
# BEHAVIOURAL CHANGE COMMUNICATION FOR E-COOKING (BCCEC) IN UGANDA

## Baseline Study Report

Baseline Study Report on Electric Cooking Market Needs and Value Proposition, and the Knowledge, Attitudes, and Practices/Perceptions towards Electric Cooking in Uganda.

2024

**National Renewable Energy Platform (NREP)**

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## ABBREVIATIONS

| | |
|---|---|
| **FCDO** | Foreign, Commonwealth & Development Office |
| **GKMA** | Greater Kampala Metropolitan Area |
| **MECS** | Modern Energy Cooking Services |
| **MEMD** | Ministry of Energy and Mineral Development |
| **NREP** | National Renewable Energy Platform |
| **NDP** | National Development Plan |
| **EPC** | Electric Pressure Cooker |
| **LPG** | Liquefied Petroleum Gas |
| **WHO** | World Health Organization |

## ACKNOWLEDGMENT

We extend our sincere gratitude to all the individuals and organizations that have contributed to the development and implementation of the **Behavioural Change Communication for e-Cooking (BCCeC) project**.

We appreciate the **Government of Uganda**, particularly the **Ministry of Energy and Mineral Development (MEMD)**, for its commitment to advancing clean cooking solutions and creating an enabling policy environment for sustainable energy adoption.

Our deepest appreciation goes to the **UK Foreign, Commonwealth & Development Office (FCDO)** for funding this initiative through the **Modern Energy Cooking Services (MECS) Programme** at **Loughborough University**. Their support has been instrumental in driving research, awareness, and engagement to accelerate the transition to e-cooking in Uganda. We also thank local governments and community leaders across the nine target cities for their invaluable collaboration in engaging households and promoting behavioural change.

Finally, we extend our gratitude to all the study participants, including the 500+ respondents who provided critical insights into cooking practices, perceptions of e-cooking, and communication preferences. Their contributions will help shape strategic interventions aimed at reducing biomass dependence, improving public health, and promoting sustainable energy solutions.

Together, we can drive the adoption of clean cooking technologies and create a healthier, more sustainable future for Uganda.

## EXECUTIVE SUMMARY

Uganda's reliance on biomass for cooking, accounting for 88% of total energy consumption in 2021, has driven significant environmental and health challenges, including rapid deforestation and household air pollution. The annual demand for wood fuel exceeds sustainable supply, contributing to forest loss, particularly in charcoal-producing districts. Inefficient cooking practices have also been linked to over 20,000 annual deaths due to household air pollution. To address these issues, the Government of Uganda has prioritized clean cooking in its Third National Development Plan (NDP III), with a goal of reducing biomass energy use for cooking to 50% by 2025 from over 80% in 2020.

Clean cooking encompasses fuel-stove combinations meeting WHO indoor air quality standards, such as improved biomass stoves, LPG, biogas, ethanol, and electric stoves. Despite significant government efforts - including tax exemptions on clean cooking technologies and the introduction of an electricity cooking tariff – adoption remains low, with only 15% of the population using clean cooking technologies by 2023.

Electric cooking (e-cooking) offers a promising solution, with Electric Pressure Cookers (EPCs) proving highly energy- and cost-efficient. These technologies enable significant savings in time and energy for cooking traditional dishes, including plant-based cuisines which are popular in Uganda. Despite this potential, adoption faces barriers, including cultural attachments to traditional cooking methods, misconceptions about taste and quality, and infrastructural limitations.

The Behavioural Change Communication for e-Cooking (BCCeC) project, implemented by the National Renewable Energy Platform (NREP) in collaboration with the Ministry of Energy and Mineral Development (MEMD), aims to accelerate the adoption of e-cooking technologies. Funded by the UK's Foreign, Commonwealth & Development Office (FCDO) through the Modern Energy Cooking Services (MECS) Programme at Loughborough University, this 18-month initiative targets nine cities in Uganda. The project focuses on raising awareness, dispelling misconceptions, and showcasing the benefits of e-cooking through tailored messaging and community engagement.

A baseline study involving over 500 respondents in each of the six cities from whom data was collected on household cooking practices, perceptions of e-cooking, and preferred communication channels. Findings will inform targeted awareness campaigns and guide strategic interventions aimed at reducing biomass dependence, improving public health, and promoting sustainable energy solutions.

## MAIN FINDINGS

### Household cooking preferences and behaviours

- Traditional biomass fuels, particularly charcoal are the predominant fuels used in urban Ugandan households. 91.4% of households use charcoal in some form, while 77% primarily rely on it.
- Fuel stacking is prevalent among urban households. 45% of households use multiple fuels to cope with seasonal changes, rising costs, and diverse cooking needs.
- Expenditure on primary cooking fuels is highest in households that utilise charcoal and firewood especially in the Greater Kampala Metropolitan Area (GKMA), Mbale, Masaka, and Mbarara.
- Electricity remains among the least expensive primary fuels, particularly when efficient appliances like electric pressure cookers (EPCs) and induction cookers are used.
- Women are the primary decision-makers for cooking technology adoption in 79% of households.

### Knowledge, Attitudes, and Perceptions about Electric Cooking

- There are high levels of grid electricity access in urban Ugandan households. Over 85% of households in Ugandan cities have access to electricity, with nearly all of them, apart from those in Gulu city, connected to the national grid.
- Electricity reliability varies widely across Ugandan cities. While 62% of households reported having reliable electricity, cities like Gulu (50% reliability) and Mbale (11% experiencing highly unreliable electricity) face significant challenges. In addition, more than 50% of households rarely or never receive advance notice about electricity service interruptions.
- Awareness of electric cooking is generally high among the population, ranging from 76% in Gulu to 96% in Masaka. However, gaps persist among female-headed households and those with lower educational attainment.
- Word of mouth, radio, and television are the main sources of information about electric cooking.
- Households recognize some of the benefits of electric cooking like efficient energy use but are less aware of benefits such as affordability, smoke-free cooking, and time savings.
- Misconceptions about cooking capacity, food taste, and appliance durability are significant sociocultural barriers to the adoption of electric cooking technologies.
- There is a low electric appliance repair culture among households. More than 50% of households do not repair damaged appliances, citing limited awareness of repair services and warranties.
- Gaps exist in the supply chain of electric cooking appliances. Except in Jinja, fewer than 50% of respondents in other cities reported the presence of electric cooking appliance suppliers.

### Communication Channels

- Households in Ugandan cities report high ownership of televisions, radios, and smartphones, which are the top three sources of information.

- Strong interest (90% in most cities) exists for downloading a clean cooking app, particularly if it includes features like locating product sellers and repair technicians. Interest is slightly lower among household heads over 50 years old and those with limited formal education.

## RECOMMENDATIONS

### Target population segments

- **Women:** As primary users of cooking appliances in most households, messages should emphasize how e-cooking saves time and reduces physical effort for women. Testimonials from women who have transitioned to e-cooking can enhance trust and relatability.
- **Community Leaders and Influencers**: Engaging respected local figures as advocates can normalize e-cooking technologies.
- **All Income Groups**: Messages should address affordability concerns while resonating with diverse economic demographics.
- **Local Communities**: Active community involvement is crucial to align e-cooking practices with cultural norms and dispel misconceptions, such as those about food taste.
- **Age Groups**: Tailor messages by age, leveraging social media for younger audiences and other traditional channels for older groups.
- **Local Languages**: Incorporate dominant local languages alongside English to reach households with low literacy levels effectively.
- **Suppliers and Distributors**: Build the capacity of local suppliers to market e-cooking technologies and provide support for new entrants to understand market dynamics and opportunities.

### Key Behavioural Change Messaging

- **Address Negative Perceptions**: Focus on overcoming barriers like perceived high costs, reparability concerns, safety issues, and misconceptions about energy efficiency or food taste.
- **Promote E-Cooking as Part of the Cooking Stack**: Highlight the compatibility of e-cooking with existing cooking practices, encouraging gradual adoption.
- **Accessibility of Appliances**: Integrate campaigns with efforts to expand distribution networks and explore alternative delivery methods.
- **Cost Perceptions**: Emphasize the long-term cost savings of e-cooking, especially given rising costs of traditional fuels like charcoal.
- **End-User Financing**: Promote flexible financing options, including hire purchase and soft loans, to make e-cooking appliances more accessible.

### Channels for Engagement

- **Media Channels**: Leverage television, radio, and social media for wide dissemination, as these are the most common sources of information in households.
- **Physical Engagements**: Conduct community meetings and live demonstrations to allow direct interaction with the target audience, address concerns, and build community ambassadors for e-cooking.


# 1. INTRODUCTION

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## 1.1 Overview of the Clean Cooking Sub-Sector in Uganda

In 2021, biomass contributed 88% of Uganda's total primary energy consumed through firewood, charcoal, and crop residues while electricity contributed approximately 2% and fossil fuels accounted for 10% of the national energy mix[1]. The total annual demand for wood fuel (firewood and charcoal) was estimated at 53 million tons, exceeding the sustainable annual supply of 26 million tons, and it is expected to rise at 4.2% per annum due to population growth and rapid urbanization[2].

Over dependency on solid biomass, combined with use of inefficient charcoal production technologies and cookstoves contributed significantly to the loss of forest cover from 24% in 1990 to 11% in 2022. Forest loss was majorly experienced in charcoal producing districts of Luwero, Mubende and Kiboga[3]. Furthermore, according to the World Health Organization (WHO) report of 2015, 20,852 deaths were caused by household air pollution from the use of inefficient biomass stoves and poorly ventilated cooking areas.

In the Third National Development Plan (NDP III), the Government of Uganda set targets to reduce the share of biomass energy used for cooking from over 80% in 2020 to 50% by 2025. One of the strategies that the government earmarked to achieve this objective is through programmes that accelerate access to clean cooking fuels and technologies, which was estimated at only 15% in 2020.

The term "clean cooking" describes a range of fuel-stove combinations whose emissions performance satisfies the indoor air quality standards set by the World Health Organization. This includes high-efficiency charcoal and biomass pellet stoves, liquefied petroleum gas (LPG), biogas, ethanol, and electric stoves and pressure cookers. The Government of Uganda recognizes the importance of clean cooking and has made it a priority in its Third National Development Plan (NDP III), 2020/21-2024/25.

Clean cooking is being given emphasis in Uganda's development agenda because of its potential contribution to the country's socioeconomic change. There are several initiatives being undertaken by the Government and her Partners within the clean cooking space to promote clean cooking fuels and technologies. For example, the Government has waived off VAT on LPG and denatured alcohol (ethanol); waived VAT on imported stove parts; and waived taxes on solar panels. The Government also introduced an Electricity Cooking Tariff in 2021 to encourage households to use electricity to cook[4]. Through partnership with the private sector, the Government is promoting local assembly and local manufacture of clean cooking technologies.

[1] Energy policy, 2022
[2] National Charcoal Survey for Uganda, 2015
[3] https://www.globalforestwatch.org/dashboards/country/UGA/?category=undefined, Uganda Vision 2040
[4] https://www.era.go.ug/index.php/media-centre/what-s-new/371-energy-minister-launches-reviewed-electricity-tariff-structure

## 1.2 Overview of Electric Cooking in Uganda

An increasing amount of both laboratory and field research studies indicate that modern energy cooking services, like electric cooking (e-Cooking), are already affordable and more energy-efficient than traditional fuels and technologies. However, matching local cooking practices and needs (user-centred design) has proven to be crucial for sustainability of clean cooking projects, including e-cooking. Relatedly, the Ugandan cuisine is largely plant-based, with most meals consisting of a staple food such as maize or millet porridge (posho), rice, potatoes, cassava or matooke, and relishes. Additionally, there are geographical variations in food intake and cooking practices. Households in Central and Western Uganda, for instance, primarily eat sweet potatoes and matooke, whereas those in the Northern region primarily eat sorghum, crushed cassava millet, and simsim (sesame) as main foods. The Western and Northern regions are the primary producers of a wide range of dry beans, which are primarily used to enhance the sauce that is served with other staples.

In 2019, a Controlled Cooking Test (CCT) was conducted at the Centre for Research in Energy and Energy Conservation (CREEC) with support from Modern Energy Cooking Services and Loughborough University. The aim of the study was to understand domestic cooking energy use and compatibility of energy-efficient electric cooking appliances to the Ugandan context. Liquefied Petroleum Gas (LPG), Improved biomass stoves and the Electric Pressure Cookers (EPCs) were tested for fuel/ energy consumption and total time needed to prepare a typical meal. Findings showed that the EPC was the most energy and time-efficient as it saved approximately 60% - 90% of the cost and 50% of the time spent, especially for preparing meals that take longer time and require much energy such as dry beans. The comparison between an electric stove, charcoal stove, and LPG stove demonstrated that cooking with charcoal took a lot of time and was more expensive[5,6].

Therefore, it goes without saying that energy-efficient electric cooking appliances, especially the EPC, are compatible with Ugandan cuisines. They significantly lower energy consumption by effectively cooking energy-intensive dishes like dry beans, matooke and starchy foods like millet floor (kalo), sweet potatoes and cassava.

Having realised the potential for e-cooking in Uganda, the private sector, with support from development partners and own investment have established supply chains for e-cooking. Some of the companies also offer after-sales services such as repair and maintenance, usage monitoring and analysis, ongoing user engagement and support, user training and education as well as end-of-life management and disposal guidance.

The Government as well, through the utility company, UMEME in conjunction with MECS conducted a pilot study which involved the purchase and distribution of 1,500 Electric Pressure Cookers to

[5] https://mecs.org.uk/wp-content/uploads/2020/10/Uganda-CCT-Report-.pdf

[6] Scott. N 2022, Comparing the costs of cooking with different fuels – mini-grids in Tanzania. Web page accessed on 21/02/2023

households, to further pilot and promote e-cooking[7].

However, despite significant efforts aimed at reducing the over-reliance on traditional biomass for cooking, only 15% of the population were utilizing cleaner cooking alternatives by 2023[8,9]. To achieve universal access to clean cooking fuels and technologies in accordance with Uganda's Energy Transition Plan (ETP) and the 2030 Agenda for Sustainable Development, significant investment in infrastructure for clean technologies, behavioural change campaigns, enabling environment, and financing must be done.

Misconceptions and cultural preferences surrounding traditional cooking practices continue to impede the adoption of electric cooking technologies. Many Ugandans have deep-rooted cultural attachments to traditional cooking methods, viewing them as integral components of their culinary traditions and identity. As a result, there is often resistance to adopting new technologies perceived as foreign or incompatible with existing cultural norms. Additionally, concerns about the taste and quality of food prepared using electric cooking appliances have deterred some individuals from making the switch, despite evidence to the contrary. To address such misconceptions, behavioural change campaigns are deemed appropriate to stimulate the desired changes in the citizenry pertaining clean cooking[10].

## 1.3 BCCEC Project Overview

The Behavioural Change Communication for e-Cooking (BCCeC) project, is a ground-breaking initiative aimed at revolutionizing Uganda's cooking landscape. The project is being implemented by the National Renewable Energy Platform (NREP) in collaboration with the Ministry of Energy and Mineral Development. The 18-month project seeks to promote electric cooking solutions and reduce reliance on traditional biomass for cooking. The project is funded by the Foreign Commonwealth Development Office (FCDO) of United Kingdom government through the Modern Energy Cooking Services (MECS) Programme at Loughborough University.

Spanning nine (9) cities, namely, Mbale, Mbarara, Gulu, Soroti, Masaka, Jinja, Greater Kampala Metropolitan Area (GKMA), Hoima, and Fort Portal, the project tackles awareness and behavioural change barriers head-on, dispelling misconceptions and showcasing the benefits of cooking with electricity. Recognizing the importance of communication and community mobilization, BCCeC is leveraging evidence-based strategies to target diverse audiences and population segments with tailored messages through various communication channels and materials which will enhance understanding, awareness, and acceptance of electric

[7] https://finovista.com/news-and-media/publication/6409bd6355b042aacb7c875f
[8] Uganda Energy Policy 2023
[9] Energy Transition Plan 2023
[10] Goodwin N. J., O'Farrell S. E., Jagoe K., Rouse J., Roma E., Biran A., & & Finkelstein E. A. (2014). *The Use of Behaviour Change Techniques in Clean Cooking Interventions to Achieve Health, Economic and Environmental Impact: A review of the evidence and scorecard of effectiveness.* London: HED Consulting.

cooking technologies among households, communities, and stakeholders.

This intervention is expected to catalyse a seismic shift in Uganda's cooking practices, fostering a healthier environment, and empowering communities to embrace sustainable energy solutions. Through targeted interventions, awareness campaigns, and strategic partnerships, the project will:

- Promote the adoption of e-cooking technologies in households through education and demonstration of the use of e-cooking technologies,
- Support local businesses in the clean energy sector and,
- Strengthen policy frameworks for sustainable energy.

## 1.4 Project Goal

The goal of this project is to accelerate the adoption of e-cooking technologies in Uganda, thereby mitigating health risks associated with traditional cooking methods, reducing environmental degradation, and enhancing clean energy access for all communities.

## 1.5 Project Objectives

a. To identify key demographic groups relevant to the adoption of e-cooking technologies in Uganda.
b. To develop tailored messaging and communication channels to effectively engage with segmented audiences.
c. To implement outreach and engagement activities targeting segmented demographics, driving behaviour change and adoption of e-cooking technologies.

# 2. STUDY METHODOLOGY

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## 2.1 Geographic Scope and Sampling

The baseline study was carried out across six (6) major cities in Uganda namely: Greater Kampala Metropolitan Area (GKMA), Gulu, Masaka, Jinja, Mbarara, Mbale. These cities are spread out across the Central, Eastern, Northern and Western parts of Uganda. The survey targeted at least 400 household level respondents from communities within each of the above-named cities. Ultimately, over 500 responses were achieved in each target city with the highest number of responses coming from Gulu (723), followed by GKMA (679) and Masaka (677), respectively as shown in Figure 1.

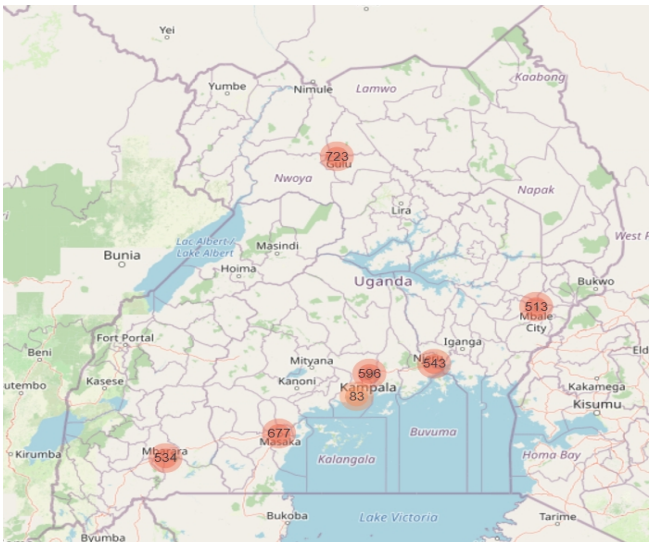


*Figure 1: Location of target cities*

Random sampling approach was used to select participating households. The survey questions were administered orally and in-person to the respondent by a member of the data collection team. Considering the diverse sociocultural contexts (e.g., different languages spoken) across the target cities, each member of the data collection team was escorted by a local guide to introduce them to the communities, but also help with simple translation of questions/responses, where necessary.

## 2.2 Data Collection Tools and Quality Assurance

A comprehensive survey questionnaire tool was developed in-house by the NREP team and received inputs from other key stakeholders from MEMD, MECS and ICLEI Africa. The questionnaire sought to capture key information about household characteristics, current cooking practices and experiences, knowledge, attitudes, and perceptions about electric cooking, and communication channels commonly used. This data is relevant for identifying population segments to be targeted with behavioural change messages, informing the design of key awareness messages, and selection of communication channels to be used.

The developed questionnaire was administered via the kobocollect platform using electronic tablets. Prior to the data collection exercise, the data collection team was trained and conducted a pilot data collection exercise of 60 respondents within GKMA to familiarize themselves with the tool, test its effectiveness, and identify any challenges that needed to be addressed before the complete roll out of the survey. The data collection team was mainly composed of NREP associate officers supplemented by a few external data collectors, all with prior experience in conducting similar data collection exercises. Supervision of the data collection process was conducted by senior NREP staff through both physical and virtual means to identify and address emerging issues and provide feedback.

## 2.3 Household Demographics

### Gender of the household heads

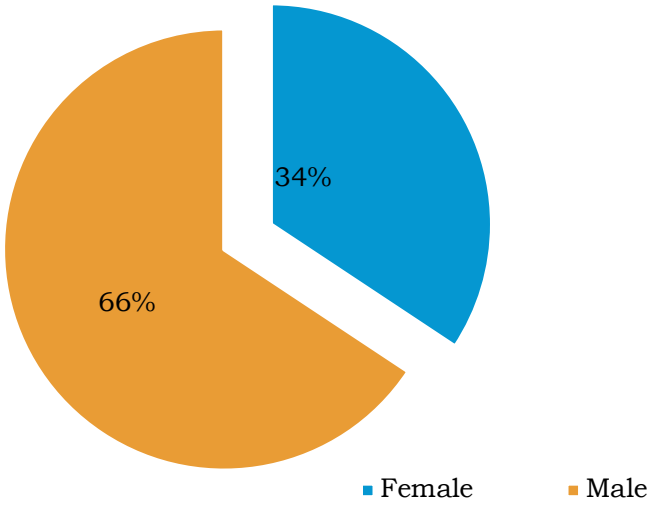


*Figure 2: Gender distribution of household heads (n = 3669)*

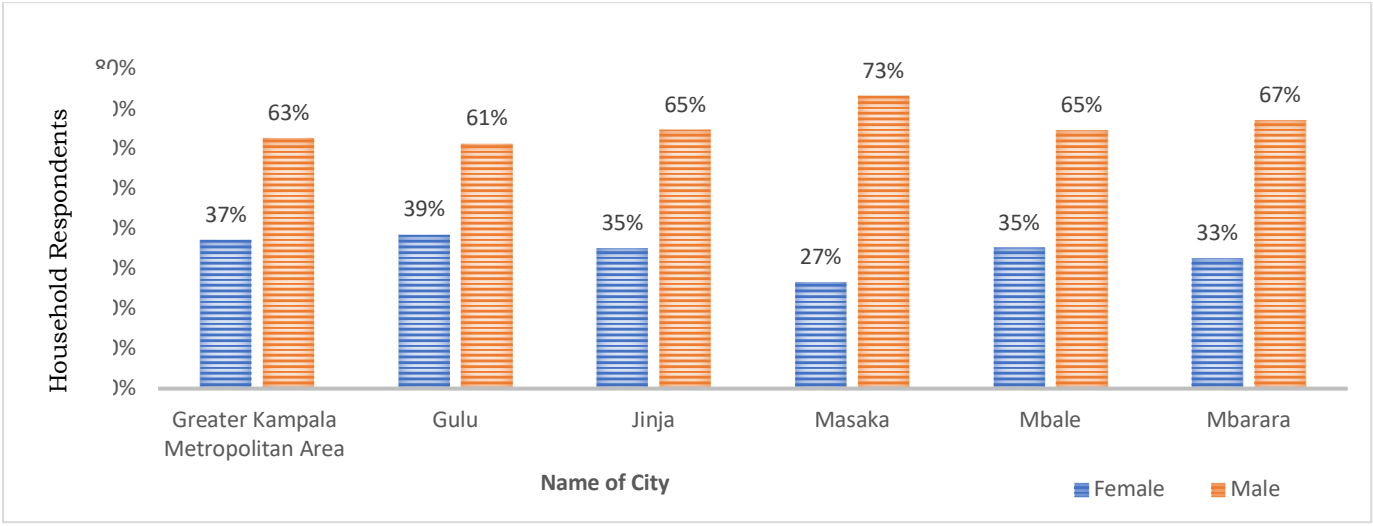


*Figure 3: Name of city segmented by gender of household head (n = 3669)*

Across all the study cities (see Figure 2), majority of surveyed households were male-headed (66%), while female-headed households accounted for 34%. Notably, as shown in Figure 3, the proportion of male-headed households was significantly higher in Masaka (73%), while Gulu had a higher-than-average share of female-headed households (39%).

*Inference*: Household heads typically play a key role in decision-making, including the purchase of cooking appliances, cooking fuels, and communication channels. To promote broader adoption of electric cooking solutions, campaigns should be designed to include tailored messages that appeal to the unique needs and priorities of the household heads, considering their gender, education level and income.

## Age of the household heads

As shown in Figure 4, most household heads fall within the age range of 31 to 40 years (35%), followed by those aged 41 to 50 years (24%), and 18 to 30 years (22%). Overall, 57% of household heads are aged 40 years or below, presenting a valuable opportunity to promote electric cooking amongst the youth headed households that are generally highly exposed to technology. Younger individuals in this segment are likely to be more receptive to adopting new technologies, making it essential to tailor behavioural change messages to align with their interests and preferences.

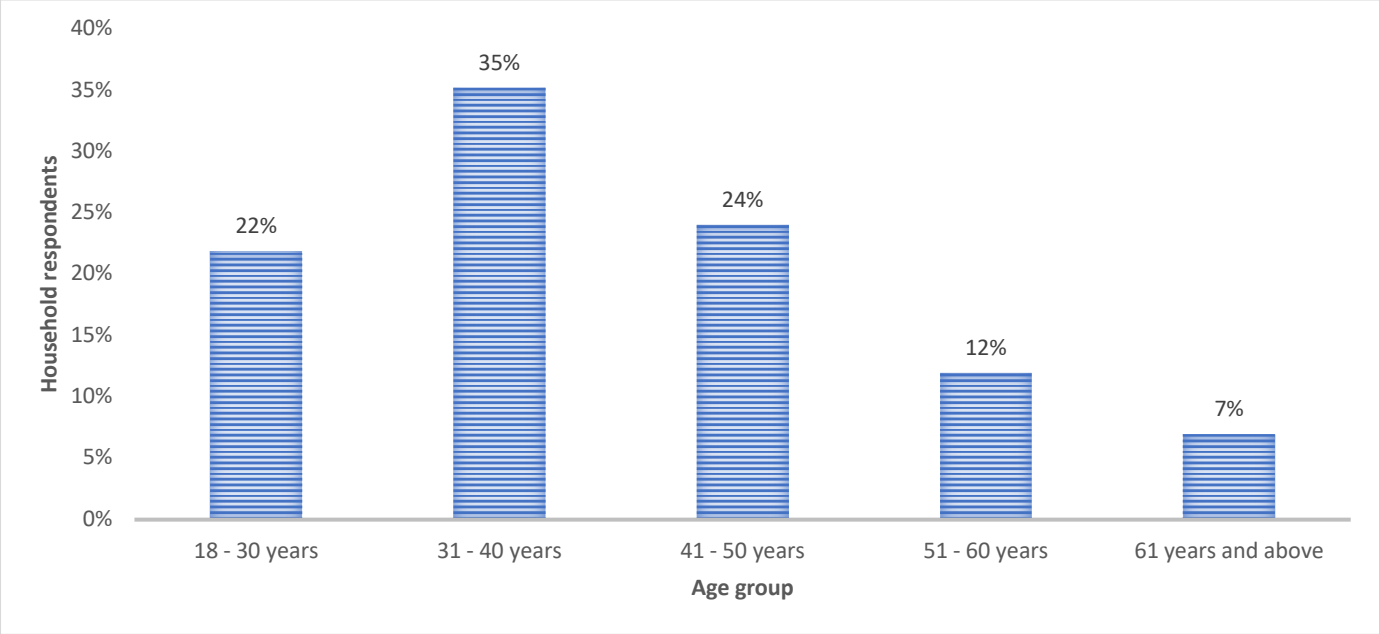


*Figure 4: Age groups of household heads*

While the gender distribution across age groups generally reflects the overall sample, female household heads account for a higher-than-average proportion (42%) among those aged 61 years and above (see Figure 5).

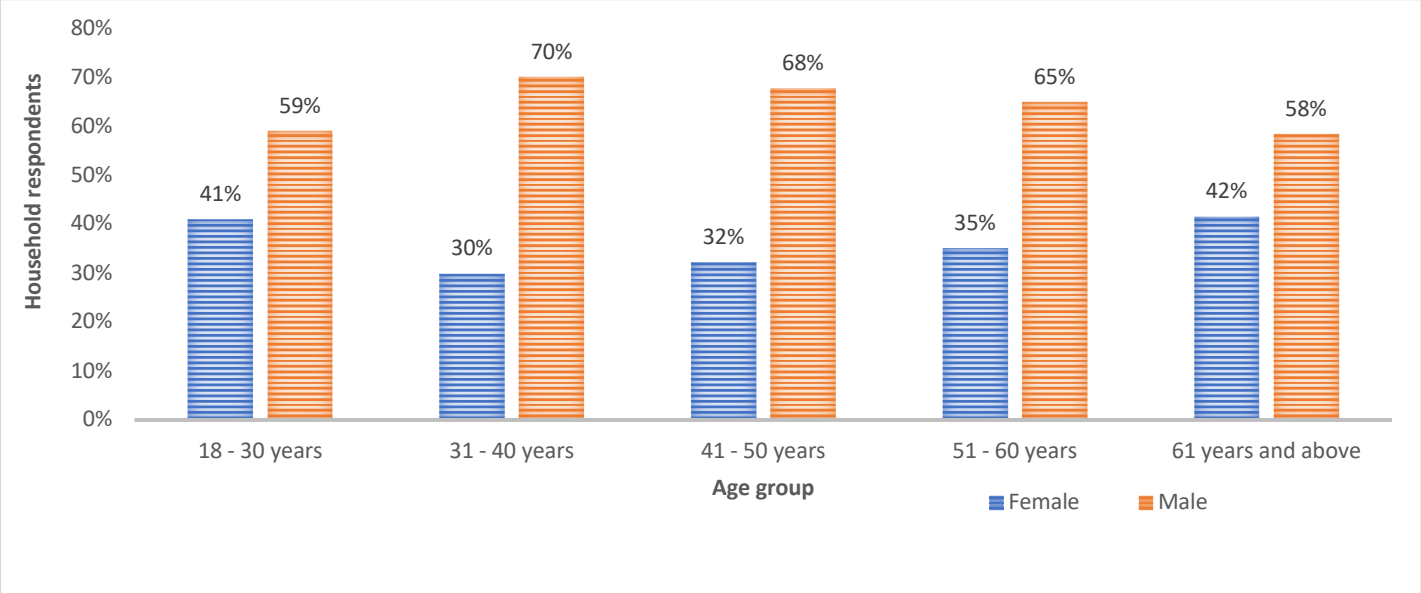


*Figure 5: Age group of the household head segmented by gender (n = 3669)*

*Inference*: The e-cooking awareness campaign messages and communication channels should be designed to target information needs of all age groups due to, among other concerns, level of exposure to new technologies.

**Household source of income**

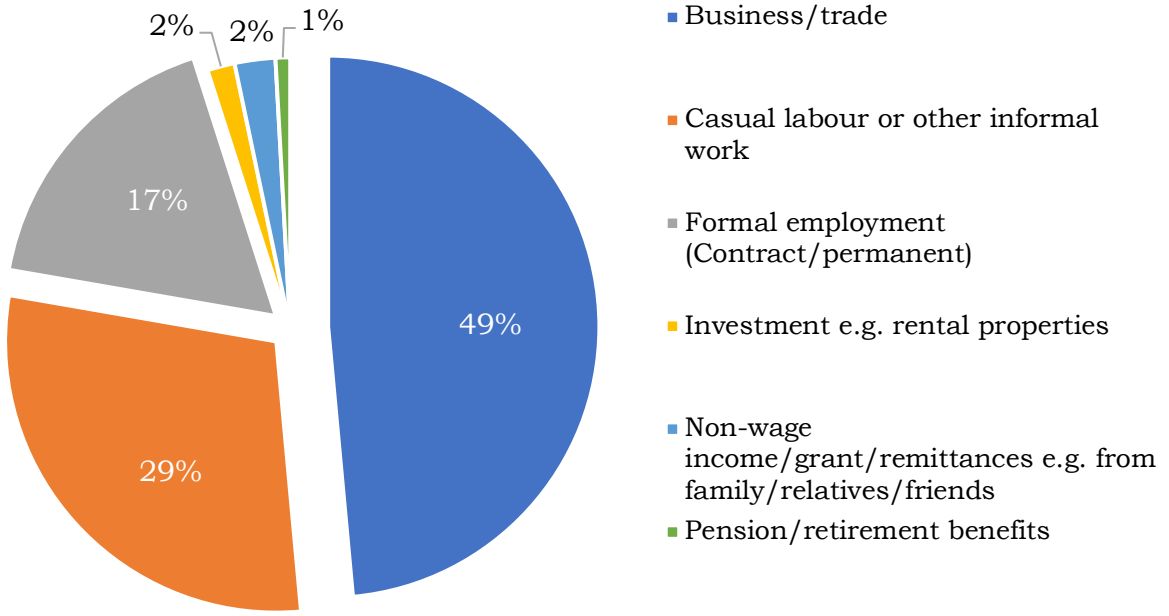


*Figure 6: Main source of income/livelihood for the household (n = 3669)*

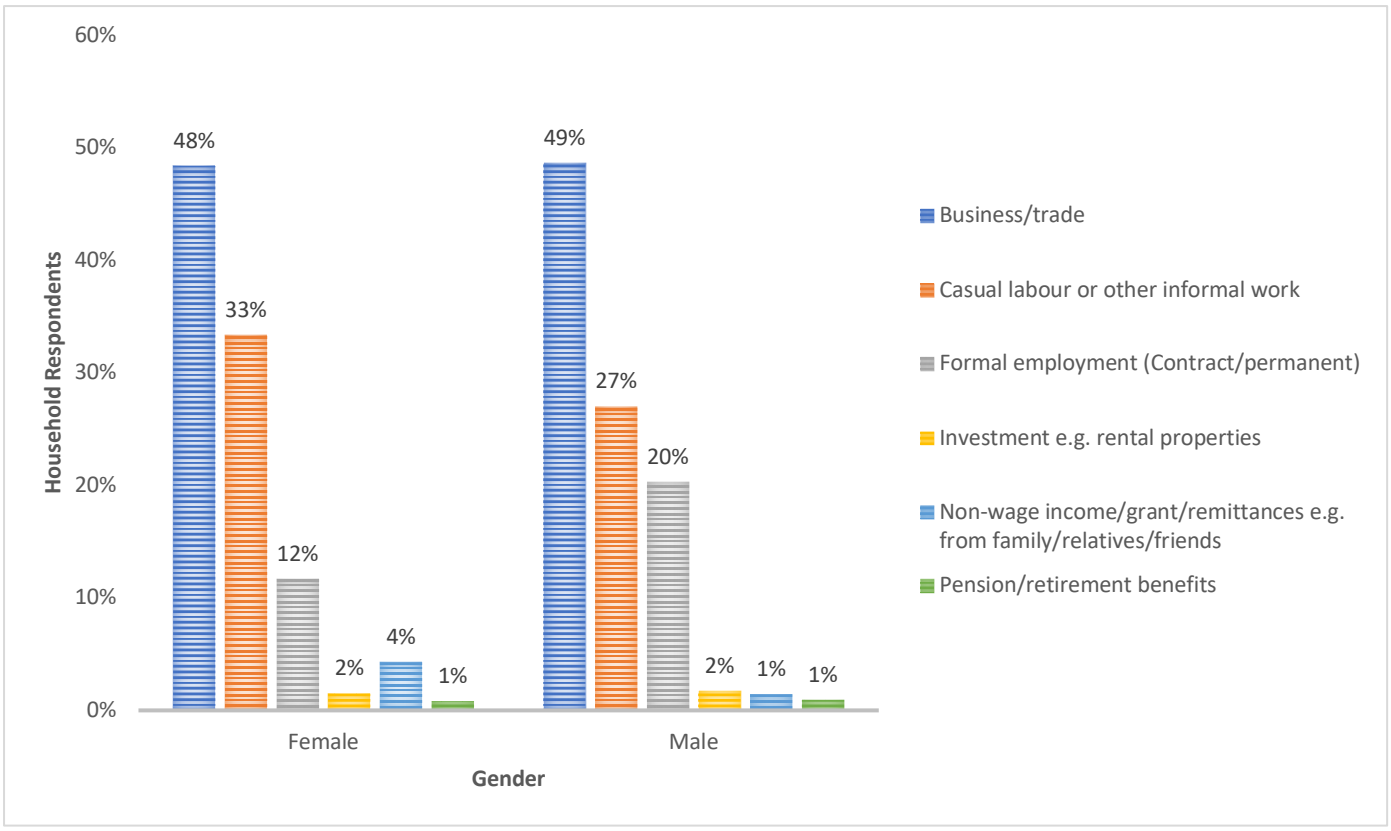


*Figure 7: Main source of household income/livelihood segmented by gender (n = 3669)*

Among the surveyed households, the primary source of livelihood was business or trade (49%), followed by casual labour or other informal work (29%). A larger proportion of female-headed households rely on informal work or casual labour (33%) and non-wage income (4%) compared to male-headed households (Figure 6). Conversely, a greater percentage of male-headed households (20%) depend on formal employment as their main source of income, compared to 12% of female-headed households (Figure 7).

These findings suggest that while many households have a reasonable income source that could support the purchase of electric cooking appliances, affordability and flexible payment options will be key to driving adoption. The high reliance on business, trade, and informal work highlights the variability and unpredictability of earnings, underscoring the need for payment plans that accommodate fluctuating incomes.

Additionally, acquisition of electric cooking appliances can pioneer economic benefits, such as opportunities for productive energy use, which can transform cooking appliances into tools for income generation. Tailored messaging that resonates with the financial realities of different household types will be crucial for the success of these initiatives.

*Inference:* Tailored messaging that resonates with the financial realities of different household types is crucial. This is because the nature of the household's source of income and the scale of earnings contributes to the behaviour towards purchase of clean cooking technologies and fuels. For example, a mason who does not have a regular source of income will need a different message from a contract employee with regards to terms of purchase of efficient e-cooking technologies, which have an upfront cost.

**Level of education of household heads**

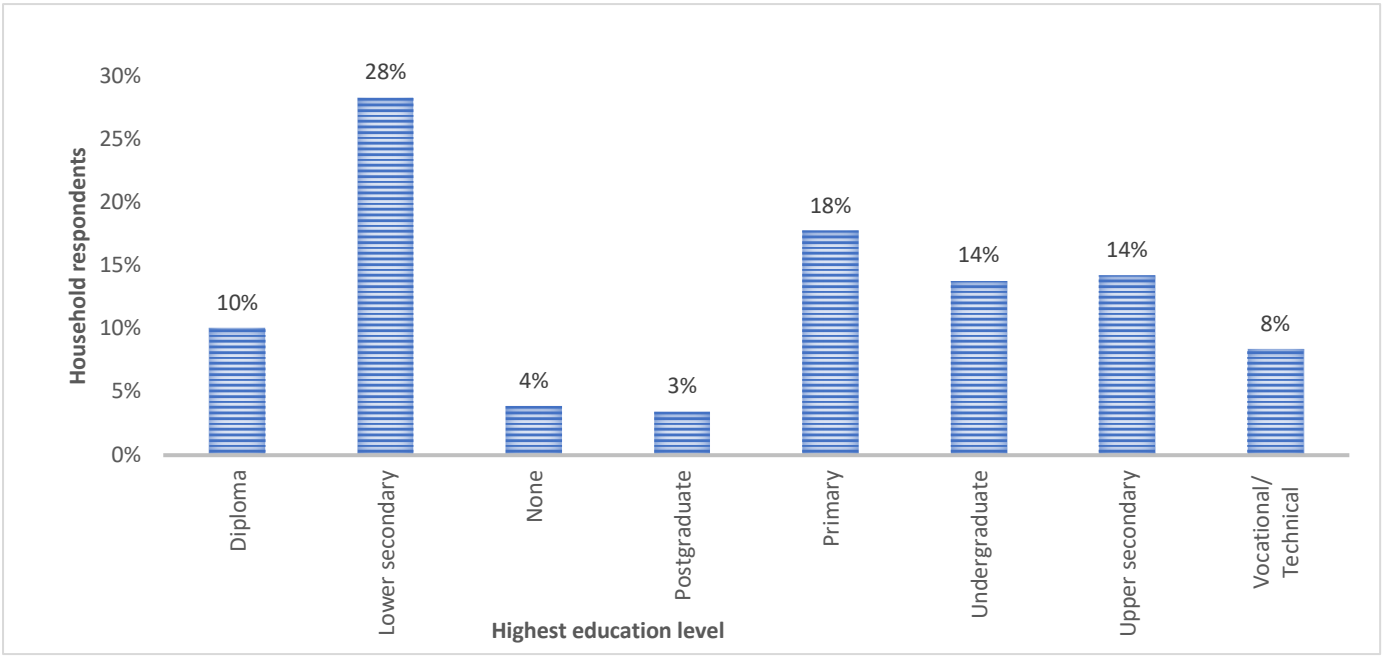


*Figure 8: Highest level of education of the household head (n = 3669)*

The data (Figure 8) indicates that most household heads (77%) have attained a post-primary level of education. Gender-disaggregated analysis in Figure 9 shows that a higher percentage of male household heads (83%) have post-primary education compared to female household heads (68%). However, a notable proportion of household heads aged 51–60 years (32%) and 61 years and above (40%) have either no formal education or only primary-level education (Figure 10).

The substantial literacy level across households provides an opportunity to convey simple behavioural change messages about electric cooking in English.

*Inference:* To ensure effective and inclusive awareness creation, it is important that a broad array of strategies be implemented to satisfy the needs of different age groups. For example, for those aged 51 and above or with lower literacy levels, campaigns should integrate visuals and practical demonstrations. Basic key messages on e-cooking should also be delivered in local languages.

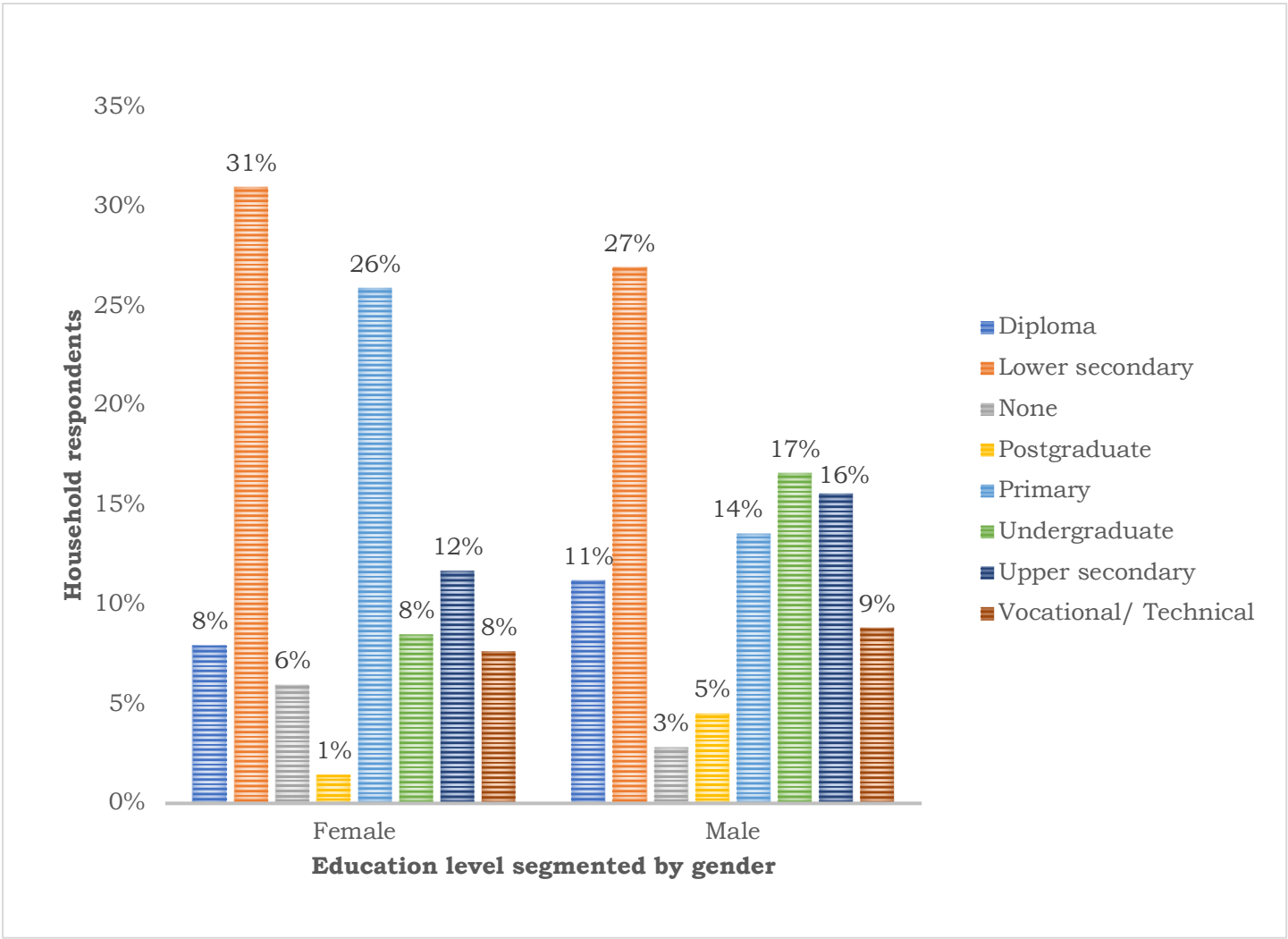


*Figure 9: Highest level of education segmented by gender (n = 3669)*

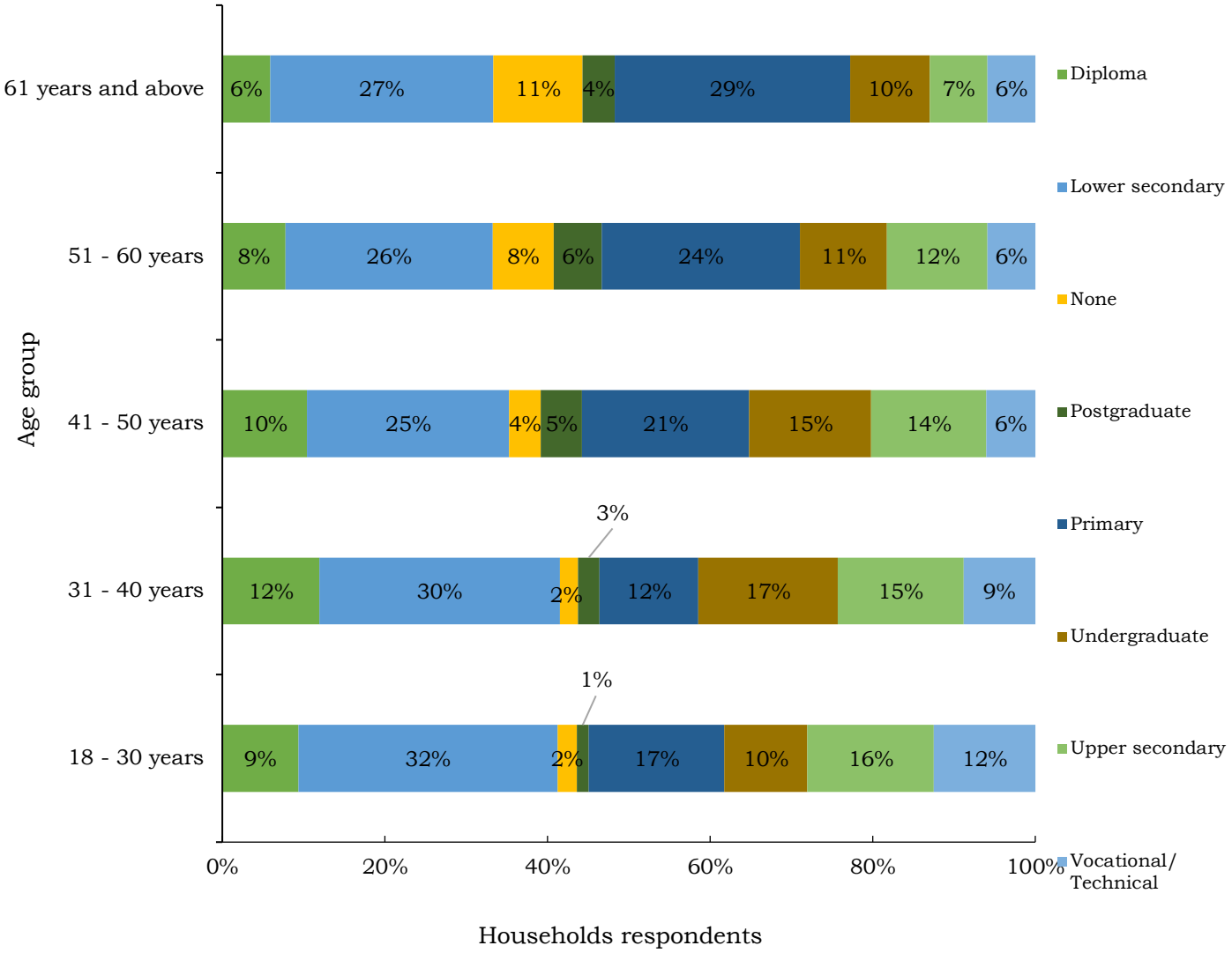


*Figure 10: Age group of household head segmented by level of education (n = 3669)*


# 3. HOUSEHOLD COOKING PREFERENCES & BEHAVIOURS

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## 3.1 Types of cooking fuels used in households

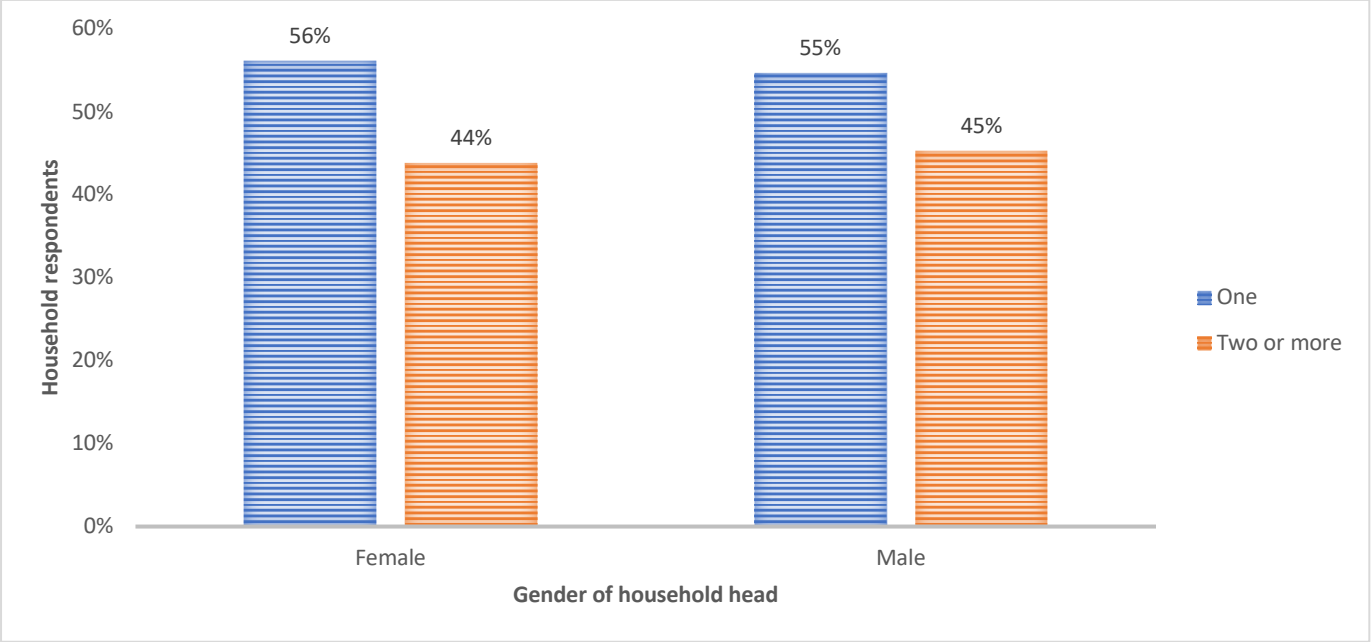


*Figure 11: Number of cooking fuels used segmented by gender of household head (n = 3669)*

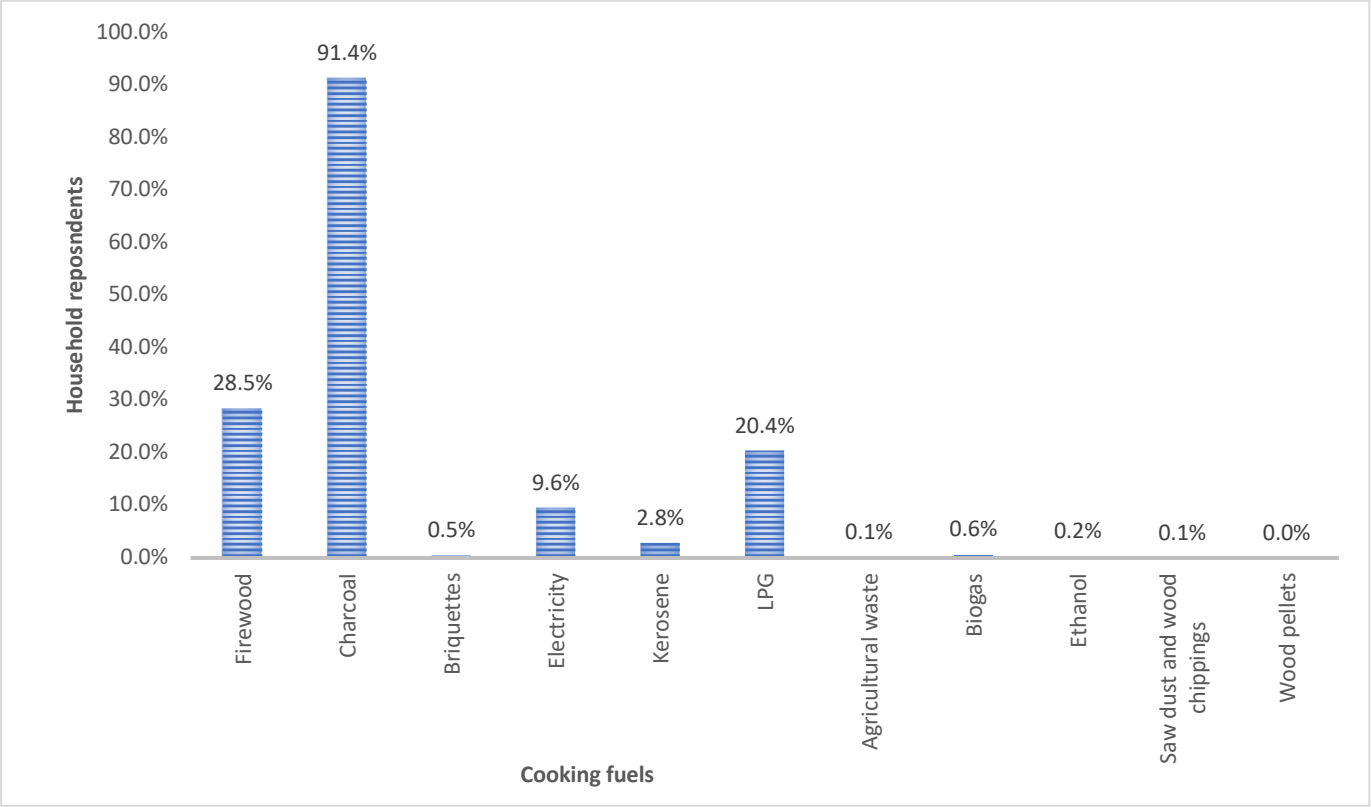


*Figure 12: Cooking fuels used in households (n = 3669)*

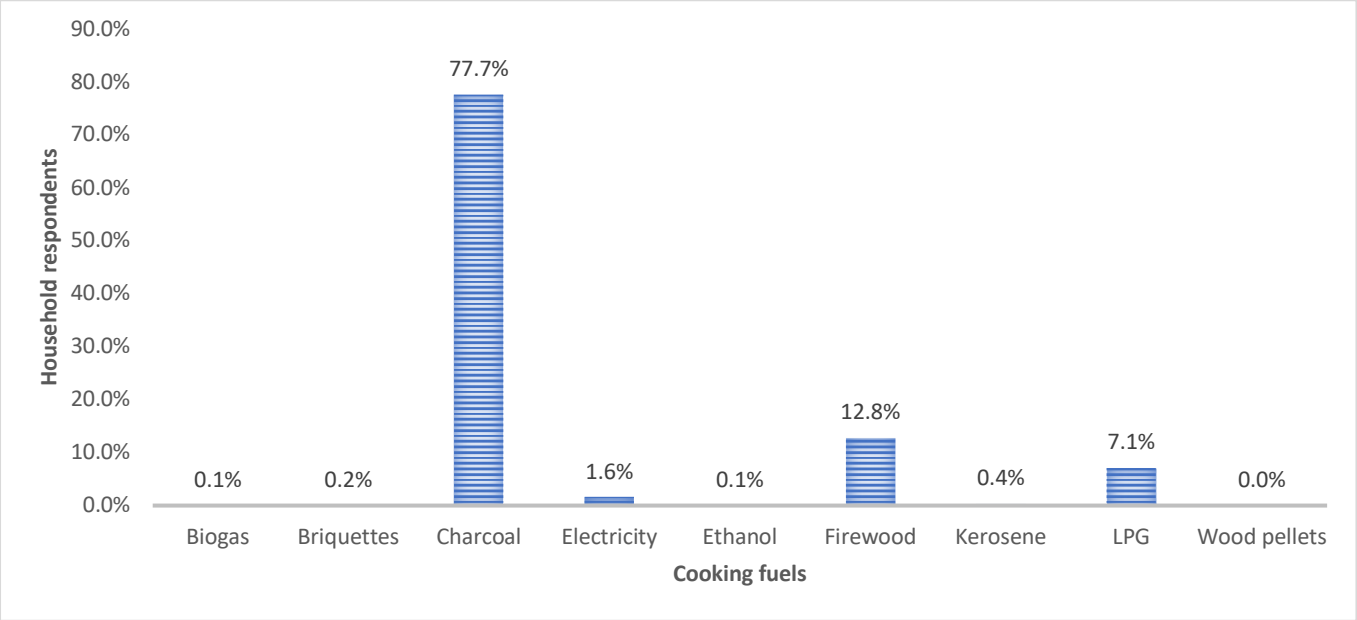


*Figure 13: Primary cooking fuels in households (n = 3669)*

From Figure 11, it is observed that slightly over half of the surveyed households (55%) rely on a single cooking fuel, while the remaining 45% use two or more fuels, highlighting the prevalence of fuel stacking in urban Ugandan households. Across all study cities (Figure 12), charcoal is the most used cooking fuel, utilized in 91.4% of households, followed by firewood at 28.5%. Charcoal and firewood are used as primary cooking fuels in over 90% of the households. This demonstrates the continued dominance of traditional biomass-based fuels in urban cooking practices and agrees with the assertion that in 2023 unprocessed biomass accounted for over 90.5% of the cooking fuels in Uganda[11].

Among modern fuels (Figure 12), LPG is the most widely used (20.4%), followed by electricity (9.6%), while alternative fuels like briquettes, biogas, and ethanol are used by less than 1% of households.

Despite relatively high urban electricity access rates in Uganda (79%[12]), the use of electricity as a primary cooking fuel remains very low – used in less than 2% of the households (Figure 13), which corroborates what is documented in Uganda's Energy Transition Plan[13]. This limited adoption of electricity as a primary cooking solution, is potentially due to technological, social, economic, informational, or cultural barriers.

*Inference*: As observed, almost 50% of households practice fuel stacking due to the diverse nature of foods and cultures. Only 1.6% of the households already use electricity for cooking, which implies a very level of acceptance of e-cooking. Increased adoption of e-cooking will require popularizing the comparative advantages of e-cooking over other cooking options, especially traditional fuels.

[11] Uganda Energy Policy 2023
[12] https://www.iea.org/data-and-statistics/data-product/sdg7-database
[13] https://memd.go.ug/wp-content/uploads/2020/07/UgandaEnergyTransitionPlan-2023.pdf

## 3.2 Expenditure on primary cooking fuels

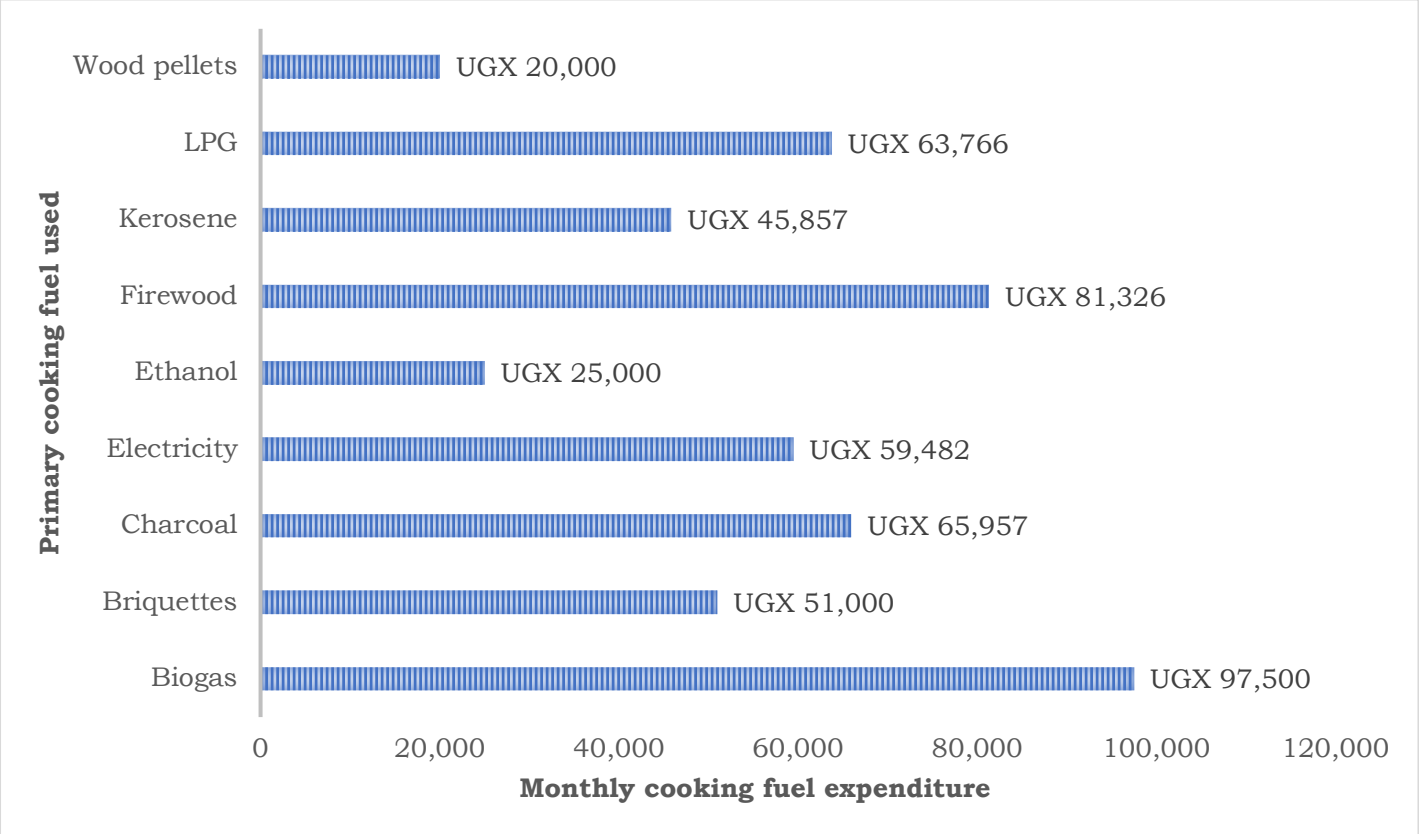


*Figure 14: Average monthly expenditure on primary cooking fuels*

On average, from the overall survey data, households across the surveyed cities spend UGX 66,876 per month on their primary cooking fuels. As shown in Figure 14, households that rely on biogas and firewood report higher-than-average fuel expenses, while those using charcoal and LPG tend to have higher expenses on cooking fuels than those that use electricity.

*Inference*: Promoting electric cooking appliances through behavioural change campaigns and other initiatives can help households, particularly those dependent on charcoal, firewood, and LPG, reduce their monthly cooking fuel costs. The potential savings would be even greater if the focus is placed on encouraging the adoption of more efficient electric cooking appliances, such as electric pressure cookers and induction cookers.

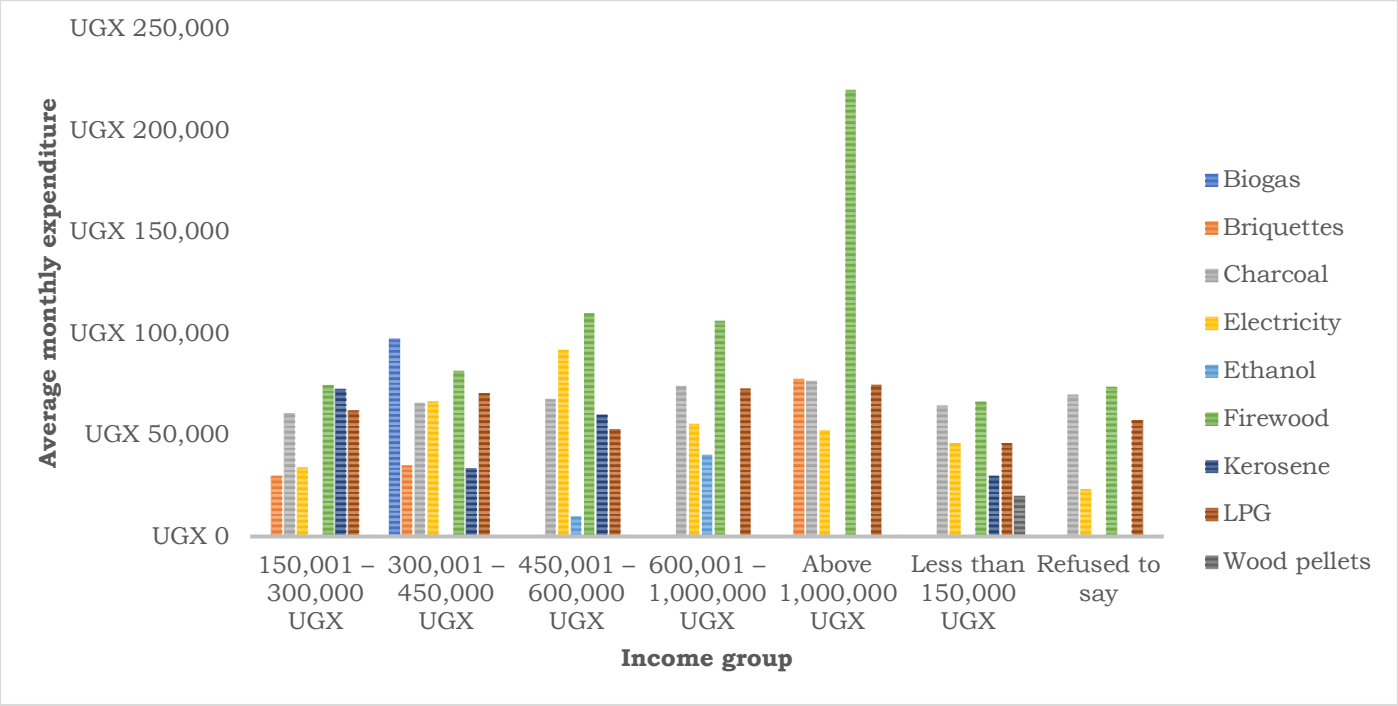


*Figure 15: Average monthly expenditure on primary cooking fuels segmented by level of income*

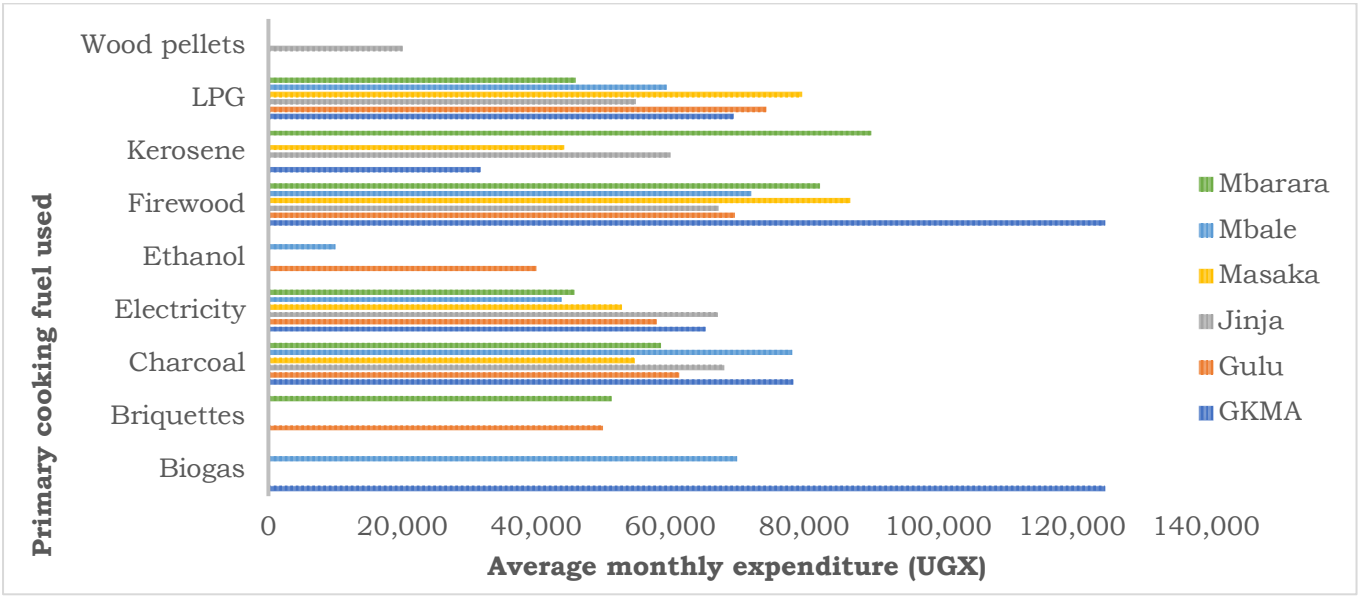


*Figure 16: Average monthly expenditure on primary cooking fuel segregated by city*

Across all income groups (Figure 15), electricity remains one of the least cost primary cooking fuels, even when households mostly use inefficient electric coils or hot plates. Acquisition of efficient appliances like EPCs and induction cookers can further reduce cooking fuel expenditure among households that primarily use electricity for cooking. A comparison across cities (Figure 16) reveals that cooking fuel expenditures for charcoal and firewood are highest in the Greater Kampala Metropolitan Area (GKMA), Mbale, Masaka, and Mbarara, while electricity expenditure is highest in Jinja and GKMA, and lowest in Mbale and Masaka. It can also be noted that households which reported high incomes i.e. above UGX 600,000 reported higher consumption of modern technologies within their fuel stacks, whereas low-income households still reported

significant use of kerosene within their fuel mix.

*Inference:* Awareness campaigns should emphasise the cost savings associated with transitioning to efficient electric cooking solutions across all income groups. These messages should cover all cities with a slight bias towards GKMA, Mbale, Masaka, and Mbarara, where expenses for traditional cooking fuels are highest.

## 3.3 Types and cost of primary cookstoves used in households

**Types of primary cookstoves**

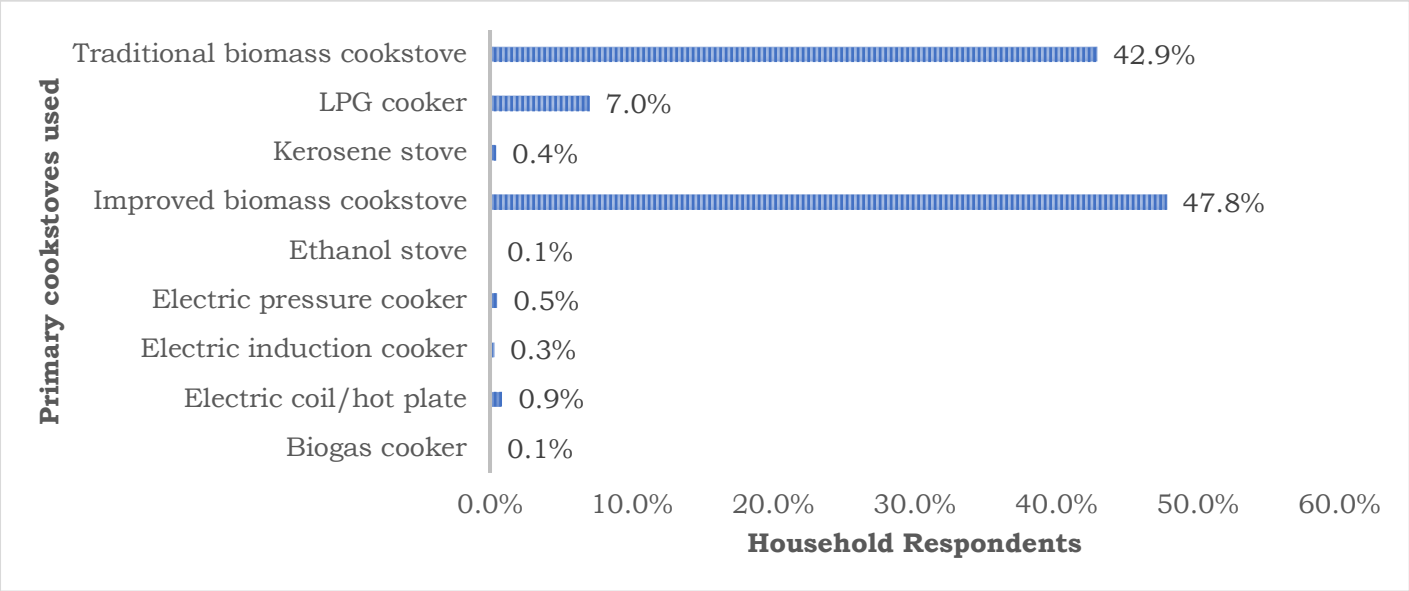


*Figure 17: Primary cookstoves used in households*

Figure 17 shows that improved and traditional biomass cookstoves are the most used primary cooking technologies, each used by over 40% of surveyed households, followed by LPG cookers. However, fewer than 2% of households currently use electric cooking appliances as their primary cookstoves, with electric coil/hot plates being the most popular, followed by electric pressure cookers (EPCs) and electric induction cookers.

It is worth noting that most people (close to 50%) have already adopted the use of improved biomass cookstoves – also known as transitional technologies. This implies a willingness to embrace newer, cleaner, and innovative cooking technologies among the population. Therefore, rigorous information and awareness campaigns, and other interventions can assist large sections of the population to take the next step in their cooking transition journey. Furthermore, households that currently use electric coils/hot plates should be sensitized about the benefits of EPCs and induction cookers, such as faster cooking and improved energy efficiency, to enable them transition from using inefficient appliances to more efficient ones.

**Cost of primary cookstoves**


*Figure 18: Average expenditure on primary cookstoves used in households*

The widespread use of biomass cookstoves both traditional and improved can likely be attributed to their low purchase cost, typically around UGX 20,000 or less (Figure 18). In contrast, electric cooking appliances, particularly electric induction cookers and EPCs, along with other cleaner cooking options like ethanol stoves and LPG cookers, tend to have higher initial costs. To address this, interventions are needed to lower the costs of efficient electric cooking appliances, such as through subsidies to make them more affordable and competitive. Additionally, funding mechanisms like loans and flexible payment options, allowing for instalment payments, should be developed in collaboration with appliance suppliers and local financial institutions, including savings and credit cooperatives (SACCOs). Finally, awareness messages that shift the focus away from high upfront costs of appliances by emphasizing the significant lifecycle cost savings associated with electric cooking are also needed.

## 3.4 Drivers of primary cookstove and fuel choices

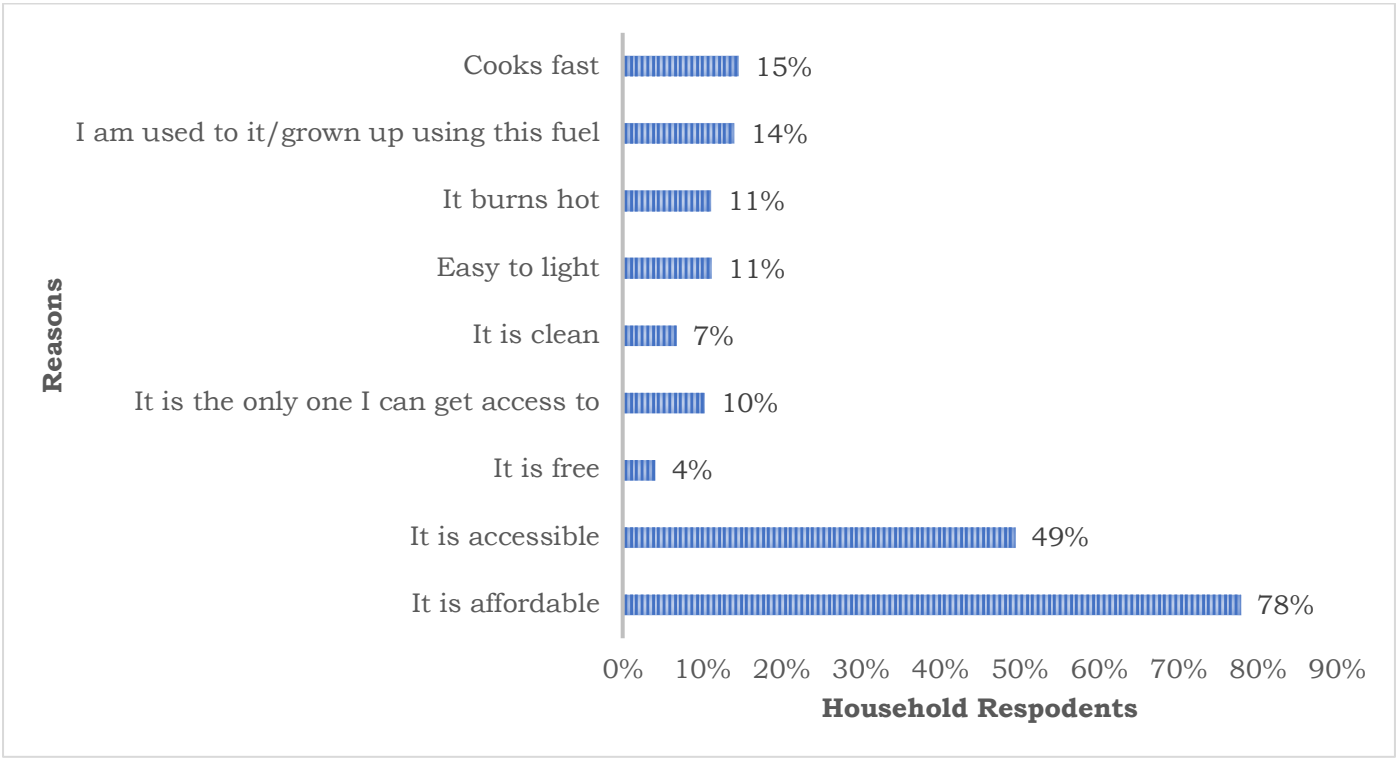


*Figure 19: Reasons for choosing current primary cookstove and fuel*

Cost is, indeed, a key factor in the selection of primary cookstoves and fuels used in households. As can be observed in Figure 19, 78% of households cited affordability as the main reason for choosing their current primary cookstove and fuel. Nearly 50% of households also selected their cookstove and fuel due to its ease of access. Other factors such as the speed of cooking, familiarity with the technology or fuel, and ease of lighting also influence household choice of cooking technology and fuel.

*Inference*: Cooking with electricity fulfils many of the key reasons that influence households' choice of primary cookstoves and fuels, such as fast cooking, ease of use, and cleanliness. However, for electric cooking to become mainstreamed in Ugandan households, it is essential to develop and implement end user financing strategies that will remove the barrier of upfront cost of the cooking technology, in addition to building extensive supply chains, in partnership with local appliance suppliers.

## 3.5 Drivers of secondary cookstove and fuel choices

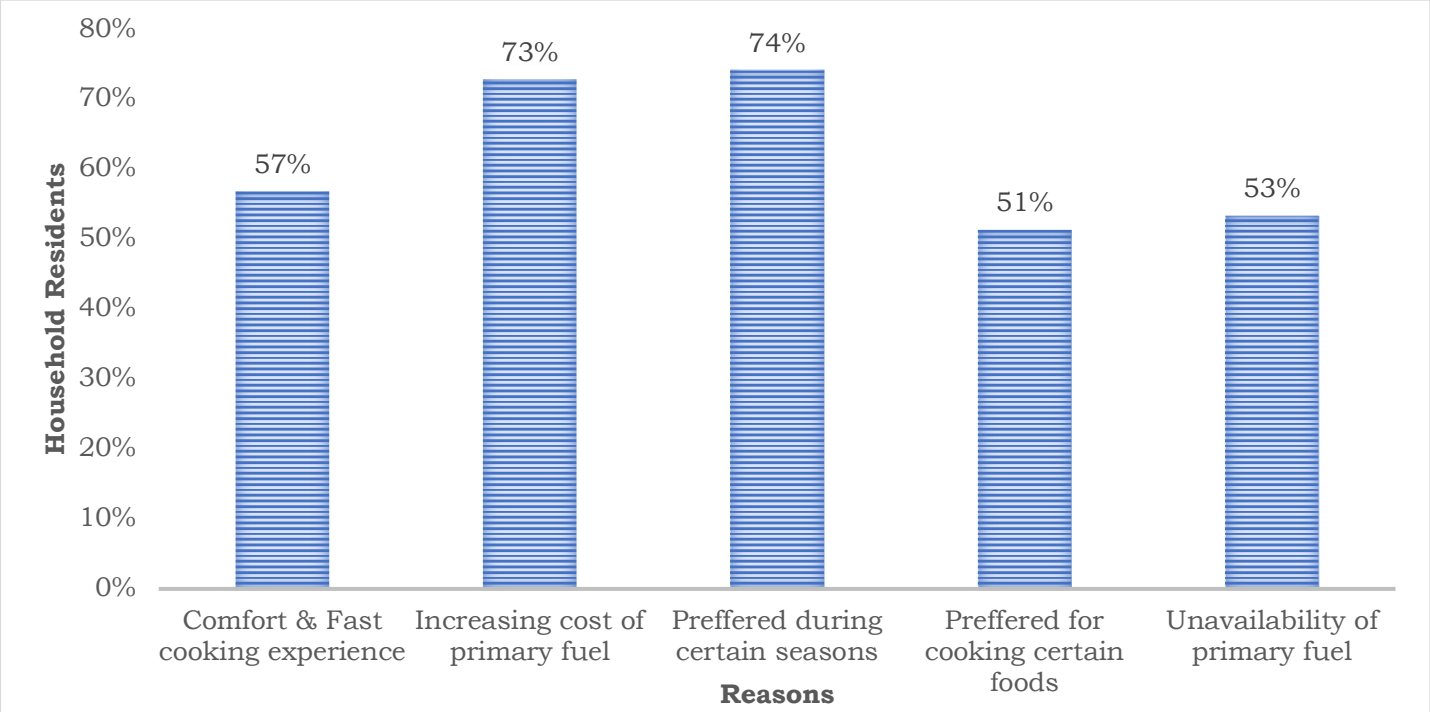


*Figure 20: Reasons for using secondary cooking fuels*

As previously mentioned, many households use two or more cooking fuels. The choice to rely on secondary fuels, in addition to the primary one, is influenced by several factors, with seasonal changes (such as during the rainy season) and rising costs of the primary fuel being the main drivers (Figure 20). Other motivators include the desire for greater comfort, faster cooking, unavailability of the primary fuel, and the need to cook specific types of food.

*Inference:* With charcoal remaining the dominant primary fuel in urban households, recent increases in its market price present an opportunity for households to transition to cleaner and more affordable options, particularly electricity. Awareness campaigns should, therefore, emphasize the rising volatility of charcoal and firewood prices in contrast to the relatively stable cost of electricity. Additional features like comfort and faster cooking should also be highlighted to encourage the adoption of electric cooking.

## 3.6 Decision making for cookstoves and fuels

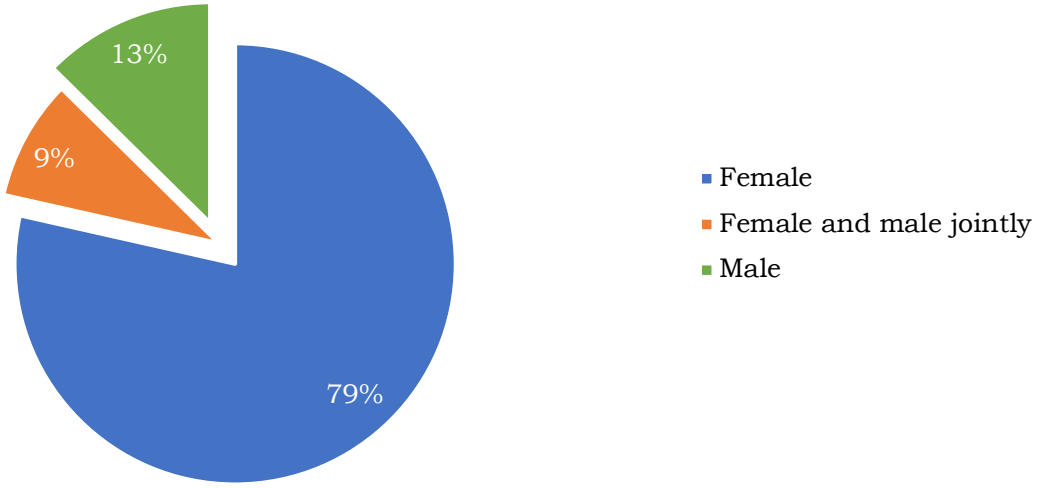


Figure 21: Who makes decisions about which cookstoves to acquire

Household heads are typically the primary decision-makers on most matters within the households. However, the decision of which cookstove to acquire or use does not always follow this pattern. Although male-headed households account for 66% of the surveyed households (Figure 2), 79% of respondents (Figure 21) report that women are the key decision-makers when it comes to selecting cookstoves. This finding reveals the gendered nature of cooking roles in households. Campaigns should, therefore, recognize the central role played by women in cookstove choices. Electric cooking promotion campaigns should be tailored to primarily appeal to women and girls by designing interventions that speak to their specific needs and responsibilities.

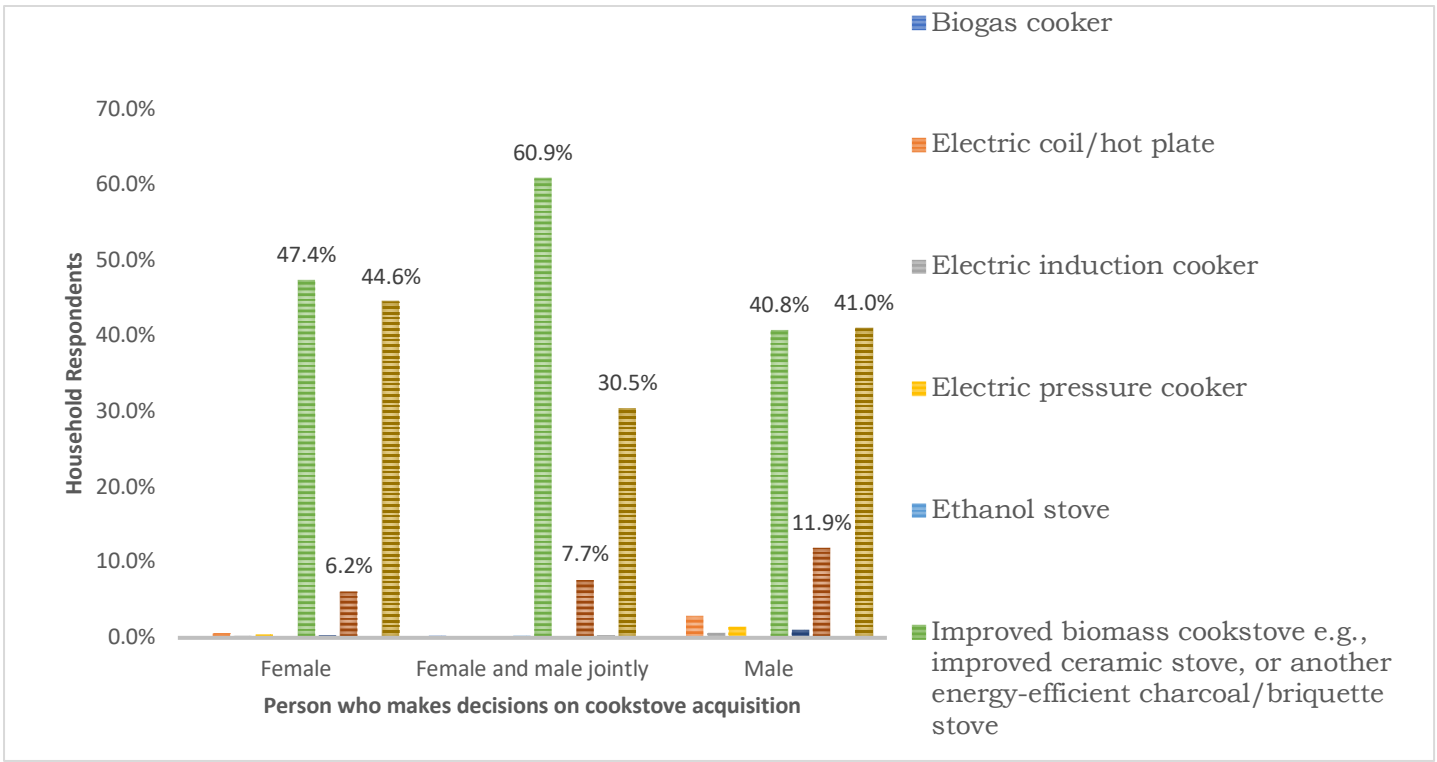


*Figure 22: Type of primary cookstove segmented by person who makes decisions on cookstove acquisition*

In households where males are the primary decision-makers regarding cookstove acquisition, findings (Figure 22) indicate a higher likelihood of using electric cooking appliances (such as electric hot plates, induction cookers, and electric pressure cookers) and LPG cookers as the main cooking method, compared to households where women are the decision-makers. This indicates that men have a slightly higher preference for electric cooking possibly due to its ease of use and comfort, than women, underscoring the importance of prioritizing reaching out to women during electric cooking awareness campaigns. However, since over 40% of both male and female decision-makers still choose traditional biomass cookstoves, it is also essential not to overlook messages directed towards men or those that are gender neutral.

*Inference:* Household energy consumption for cooking is one of the sub-sectors where gender roles are manifested. E-cooking awareness messages should consider equity to cover dynamics of gender inclusion.

## 3.7 Cooking place, frequency, and responsibilities

**Household cooking place**

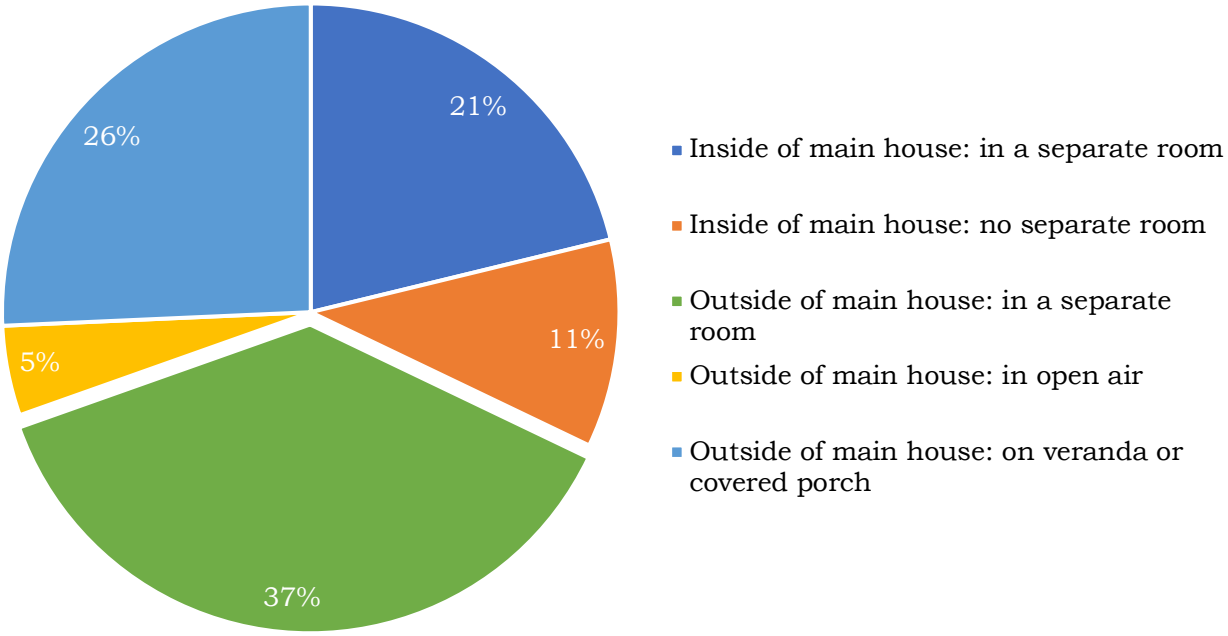


*Figure 23: Location of main cooking place of the household*

Findings represented in Figure 23 indicate that 32% of the households have their main cooking place located inside the main house. Given that many of these households likely use biomass fuels, especially charcoal, cooking indoors can expose members to significant health risks, including potential suffocation. One of the key advantages of electric cooking is that it offers a smokeless and safe cooking experience. By switching to electric cooking, households cooking in enclosed spaces – whether inside or outside the main house – can avoid the harmful indoor air pollution and related health issues typically caused by traditional biomass fuels.

**Cooking responsibilities in the household**

In 83% of the households (Figure 24), adult females/wives carry the responsibility of cooking meals, while in less than 5% of households, adult males/husbands are responsible for cooking.

Transitioning to electric cooking can reduce the physical exertion that is often associated with traditional cooking methods, for example, carrying heavy loads of firewood or charcoal. Women will also benefit more from improved air quality because of smoke free cooking experience. Moreover, practical trainings on the use of electric cooking appliances should target women, to build their confidence in the use of these appliances. Influencers and electric cooking ambassadors in communities should be mostly composed of women, ensuring easy outreach to other women.

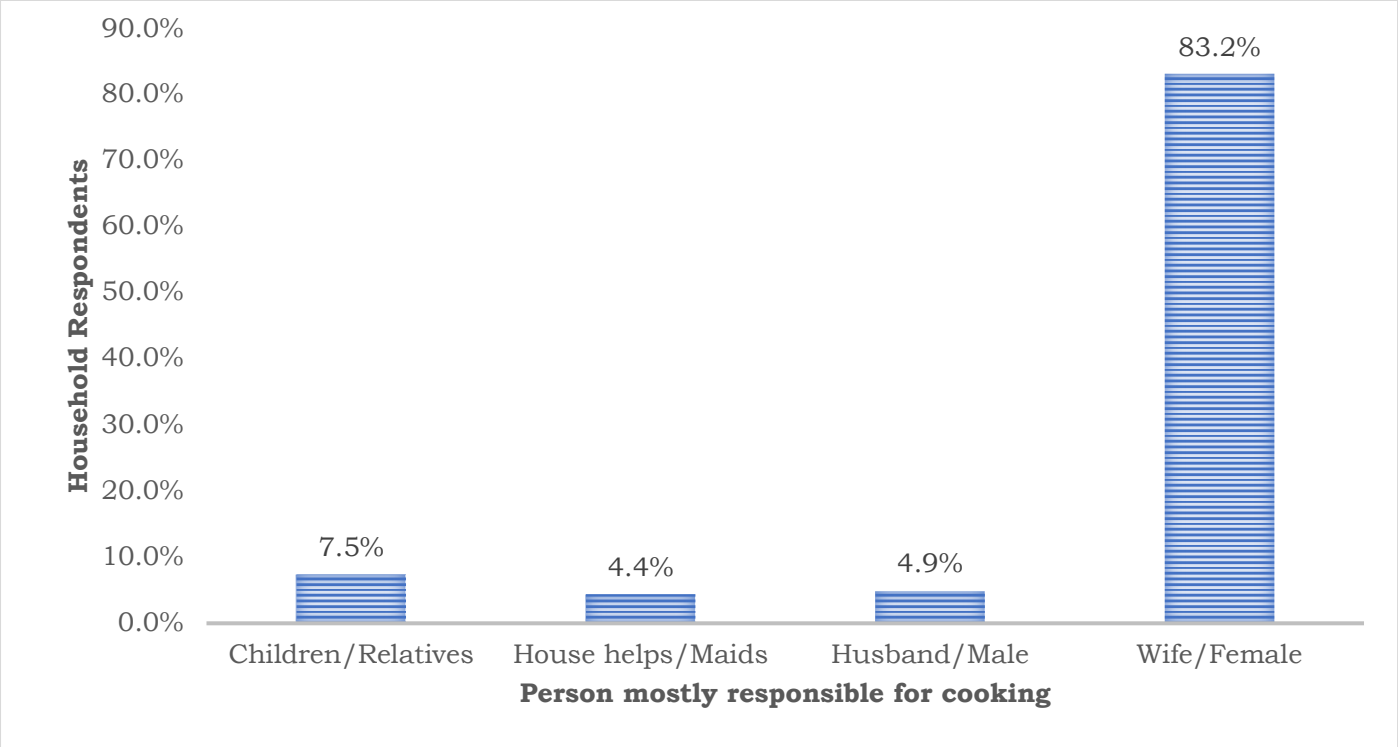


*Figure 24: Cooking responsibilities in the households*

**Cooking frequency within households**

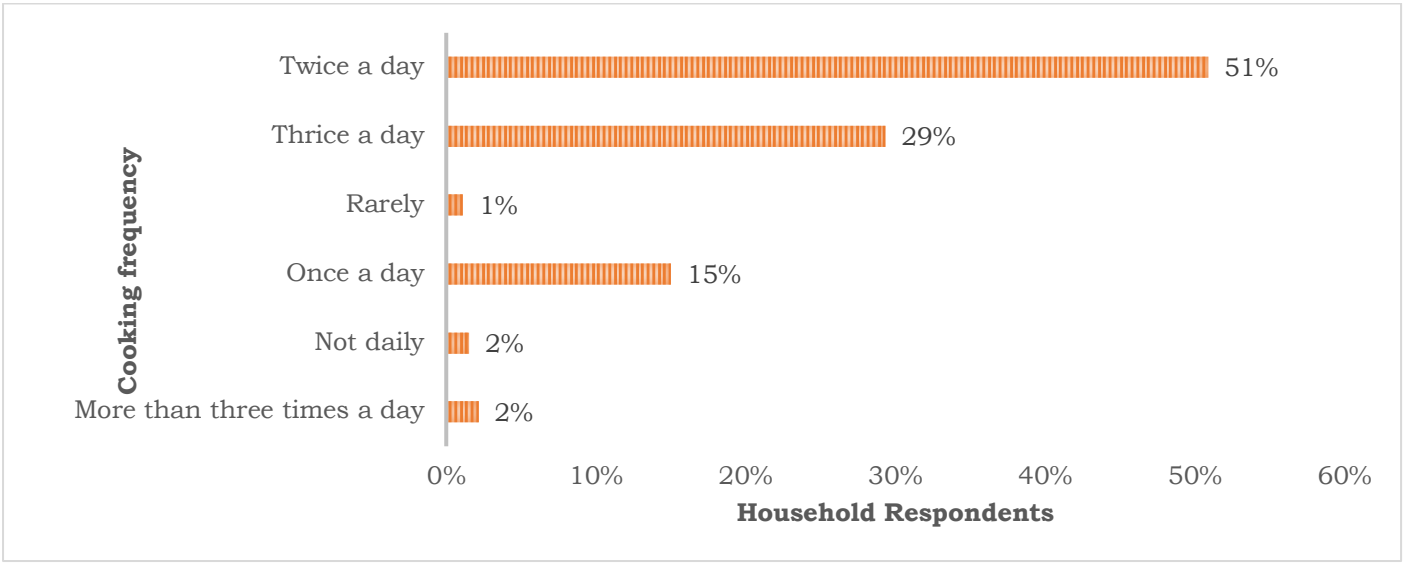


*Figure 25: Cooking frequency within households*

As is depicted in Figure 25, over 80% of surveyed households prepare meals two or more times a day. Higher cooking frequency is closely linked to increased monthly expenditures on primary cooking fuels, likely due to the greater quantities of fuel required (Figure 26).

Electric cooking appliances, such as electric pressure cookers, are highly robust, efficient, and fast, making them ideal for households that cook multiple meals daily. However, regardless of cooking frequency, switching to electric cooking can help reduce fuel expenses, with those who cook more frequently benefiting from even greater cost savings.

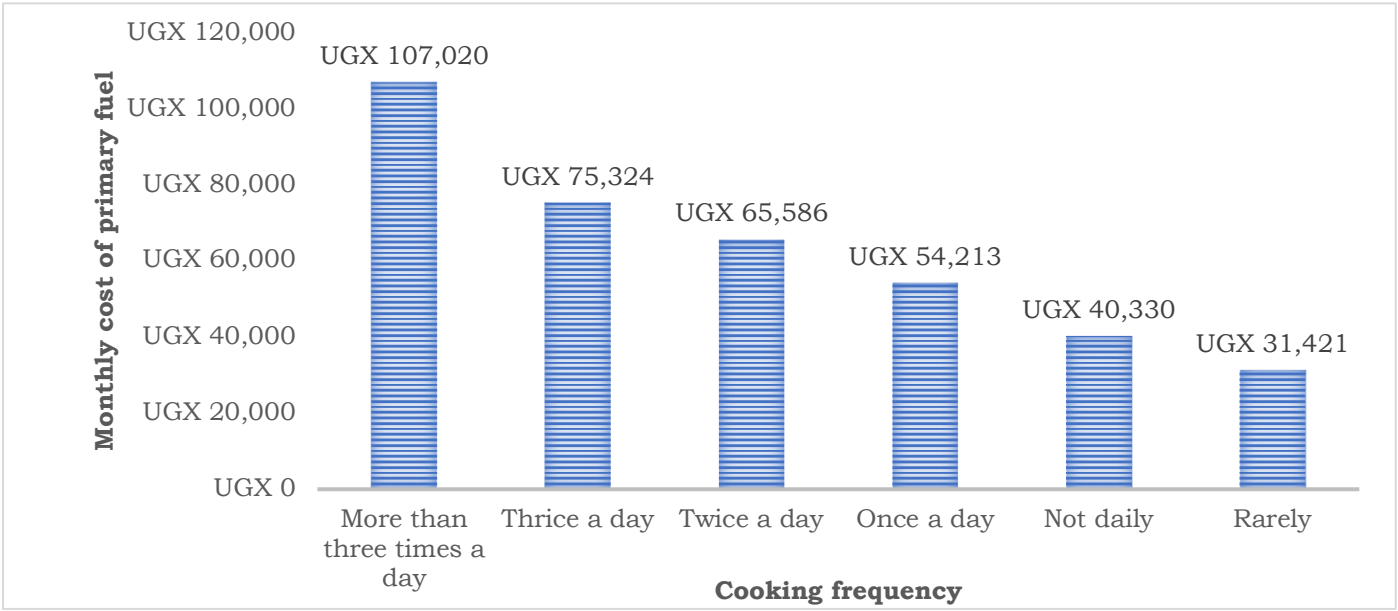


*Figure 26: Cooking frequency disaggregated by cost of primary fuel*

*Inference*: It has been reported that women are the ones who cook most in most households (80%). Additionally, many of these households cook inside the house, using mostly biomass fuels, not once but two or more times in a day. The higher proportion of time spent by women in cooking resonates with findings of the UN Women, 2023[14] that women spend nearly three (3) times of their day on unpaid care, including cooking than men. Therefore, e-cooking awareness messages directed towards women should entail communication about areas where electric cooking provides relief of burdens experienced using traditional fuels such as increased productive time and improved health.

### 3.8 Cookstoves wished for and why

Among the cookstoves desired by households (Figure 27), the electric pressure cooker (EPC) and LPG stove are the most favoured, with each being preferred by 48% of households. These are followed by the electric induction cooker and solar cooker, both at 16%, and the electric coil/hot plate at 11%. These preferences highlight a significant openness among households to adopt electricity for cooking.

Behavioural change campaigns should capitalize on the existing popularity of EPCs, positioning them prominently in awareness messages to emphasize their benefits cited in Figure 28 (e.g., smoke-free cooking experience, saves time, and saves energy). At the same time, efforts should also include promoting other appliances, particularly electric induction cookers, to broaden the appeal and showcase the variety of electric cooking solutions available.

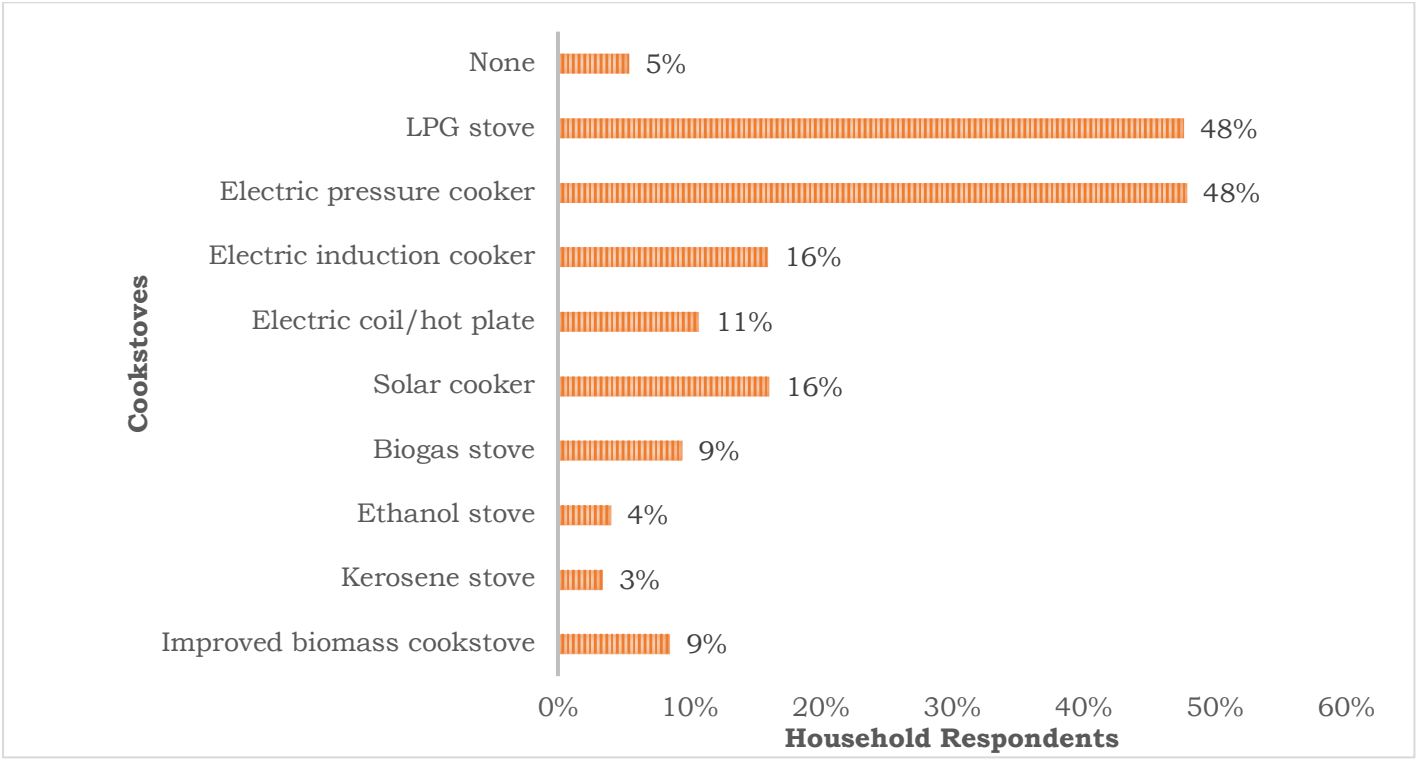


*Figure 27: Cookstoves wished for by households (n = 3669)*

[14] technical-brief-forecasting-time-spent-in-unpaid-care-and-domestic-work-en.pdf

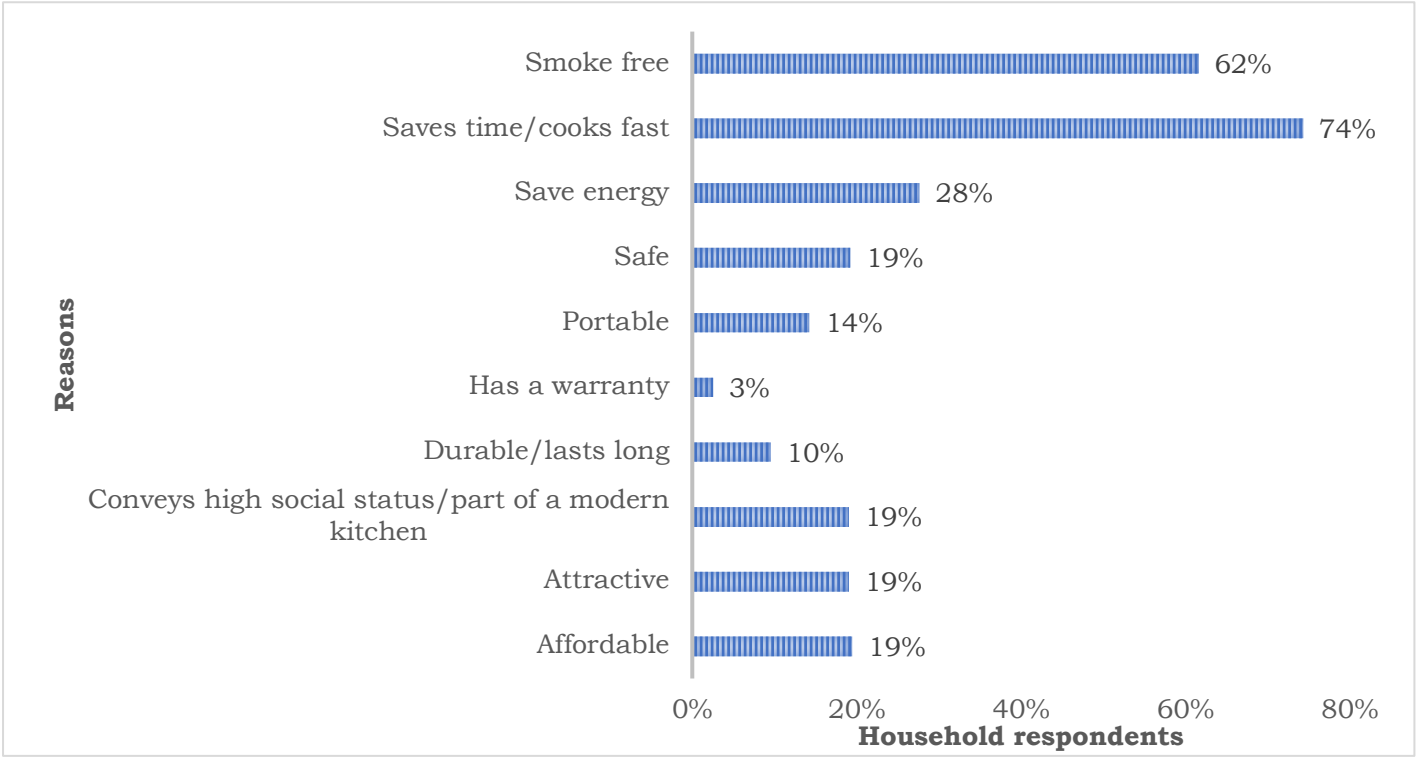


*Figure 28: Reasons for wishing to acquire cookstoves (n = 3482)*

*Inference*: Whereas majority of the respondents emphasized tangible benefits as drivers for adoption of clean cookstoves, e-cooking promotional materials, especially visual messages should also highlight some of the salient, yet important drivers such as attractiveness, portability, convenience, and safety. This is because some barriers are due to poor attitude, resulting from non-tangible barriers.

## 3.9 Preferred payment mechanism

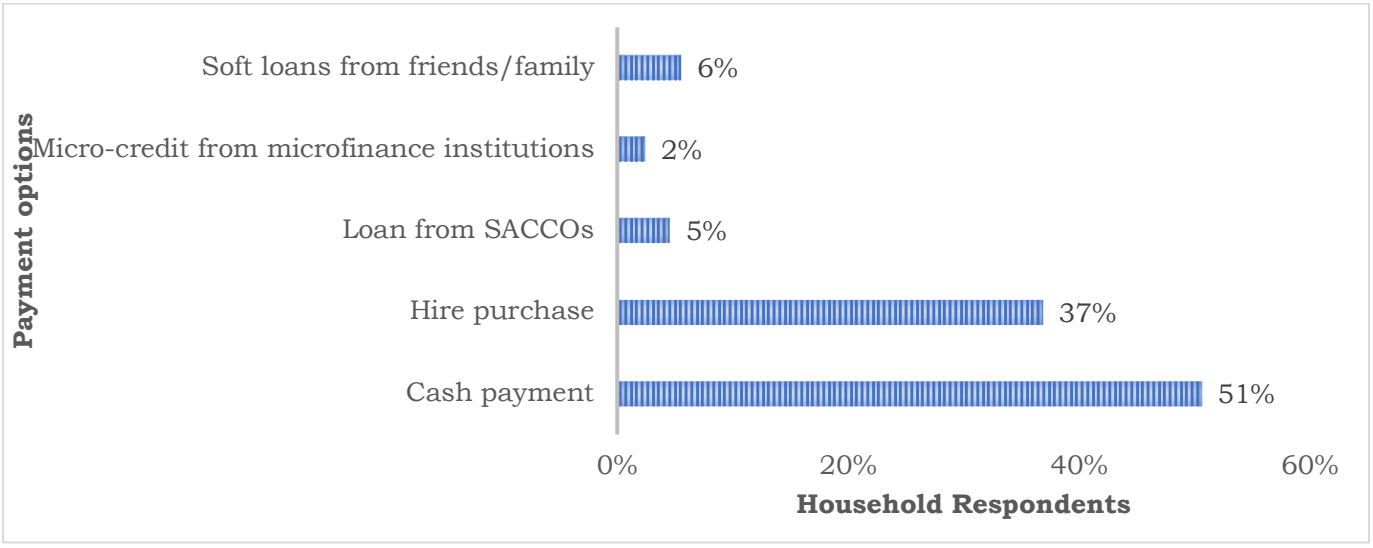


*Figure 29: Preferred payment options for acquiring clean cooking technologies*

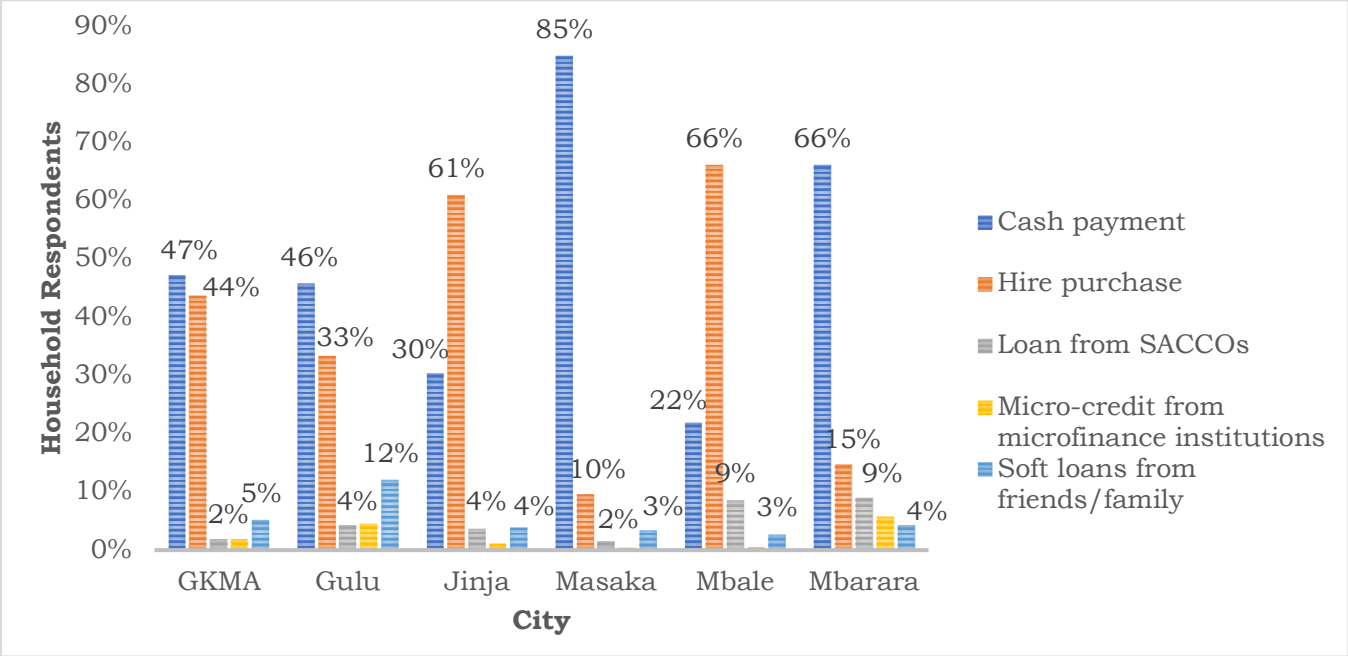


*Figure 30: Preferred payment options segmented by city*

The choice of payment methods significantly influences the adoption of clean cooking technologies, including electric cooking options, since it is directly linked to affordability. In this study (Figure 29), slightly more than 50% of households prefer to pay in cash for clean cooking technologies, while 37% opt for hire purchase arrangements. Preferences vary by city (Figure 30): cash payments are most popular in Masaka and Mbarara, whereas hire purchase is the preferred option in Mbale and Jinja.

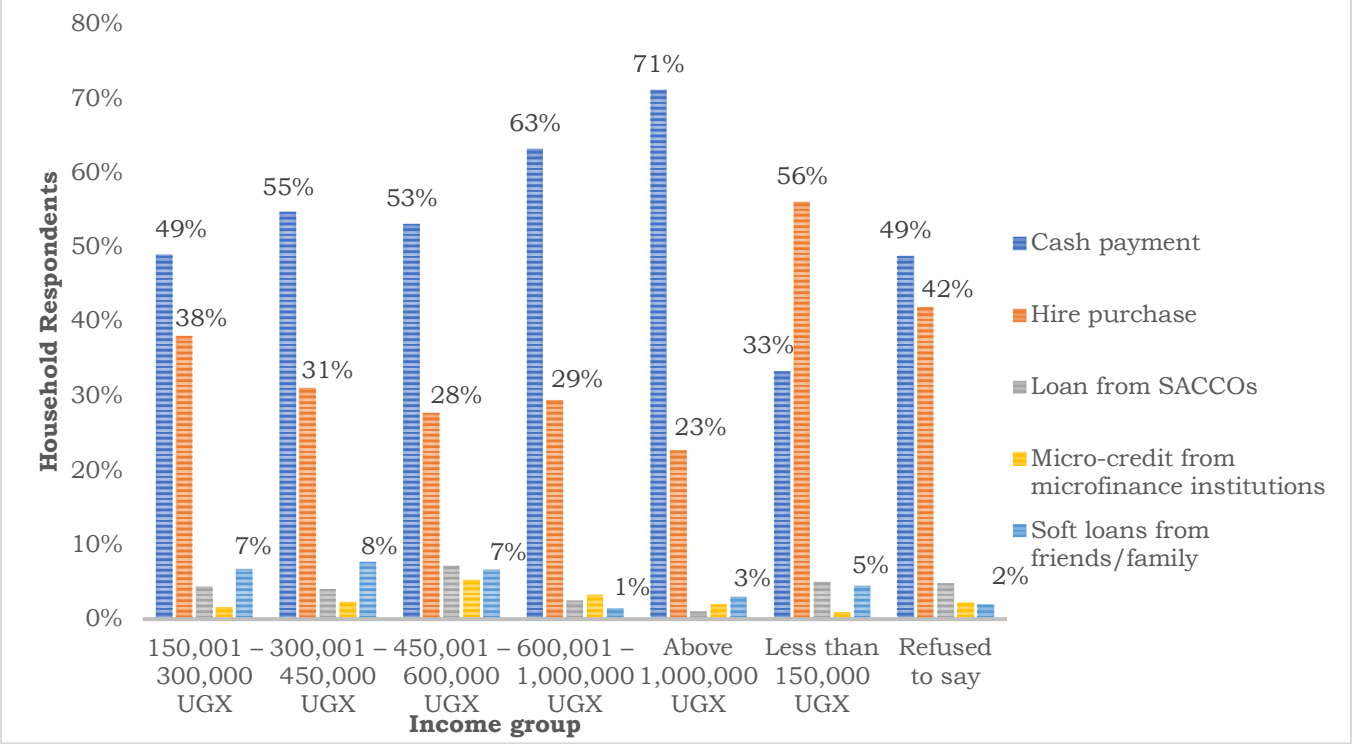


*Figure 31: Preferred payment options segmented by income group*

Income level also plays a role in determining payment modalities for clean cooking technologies as shown in Figure 31. There is a general trend of higher-income households favouring cash payments. Among households in the lowest income group (those earning less than UGX 150,000), hire purchase is more commonly chosen. In contrast, cash payments dominate among households in all other income groups. *Inference*: Whereas the findings on preferred options for payment of clean cooking technologies suggest that cash payment is the most preferred, it is worth noting that the upfront cost of e-cooking technologies could be a barrier towards their adoption.

Therefore, promoting the adoption of electric cooking appliances requires working together with suppliers of appliances to tailor payment options to meet the diverse needs of potential customers based on different income segments.

## 3.9 Willingness to pay for clean cooking technologies

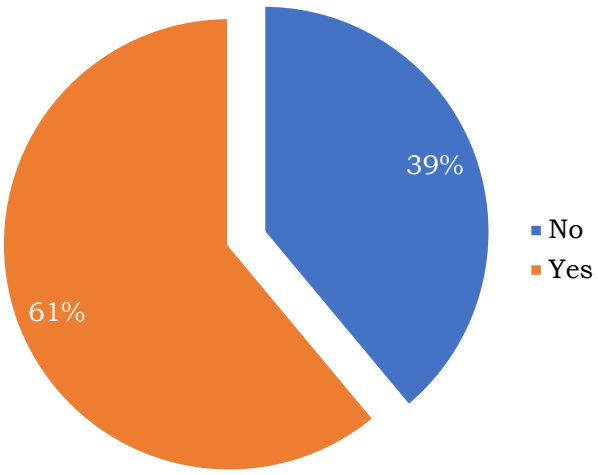


*Figure 32: Willingness to spend UGX 300,000 to buy a clean cooking technology*

Over 60% of surveyed households (Figure 32 and Figure 33) expressed willingness to spend UGX 300,000 to acquire a clean cooking technology. Approximately 52% of these respondents (n = 2240) indicated they would not purchase the technology if the price increased to UGX 400,000. Among those unwilling to buy at UGX 300,000 (n = 1429), 56% stated that they would reconsider if the price reduced to UGX 200,000.

Willingness to spend UGX 300,000 varies significantly across cities (Figure 34), with the lowest levels observed in Gulu (44%) and the highest in Mbale (76%). Income levels also play a critical role: households earning above UGX 600,000 per month exhibit higher willingness (over 75%) compared to those earning UGX 600,000 or less (below 60%).

*Inference*: These findings suggest that many urban households in various cities

are prepared to adopt clean cooking technologies at the current market price of a six-litre electric pressure cooker.

This indicates a strong potential market for efficient electric cooking appliances, provided households are made aware of their availability and benefits, and supply chains are expanded to reach underserved areas.

However, to drive greater adoption, there is a need to design and implement incentive schemes, such as subsidies, that make the upfront costs of electric cooking appliances more manageable especially for the low-income household

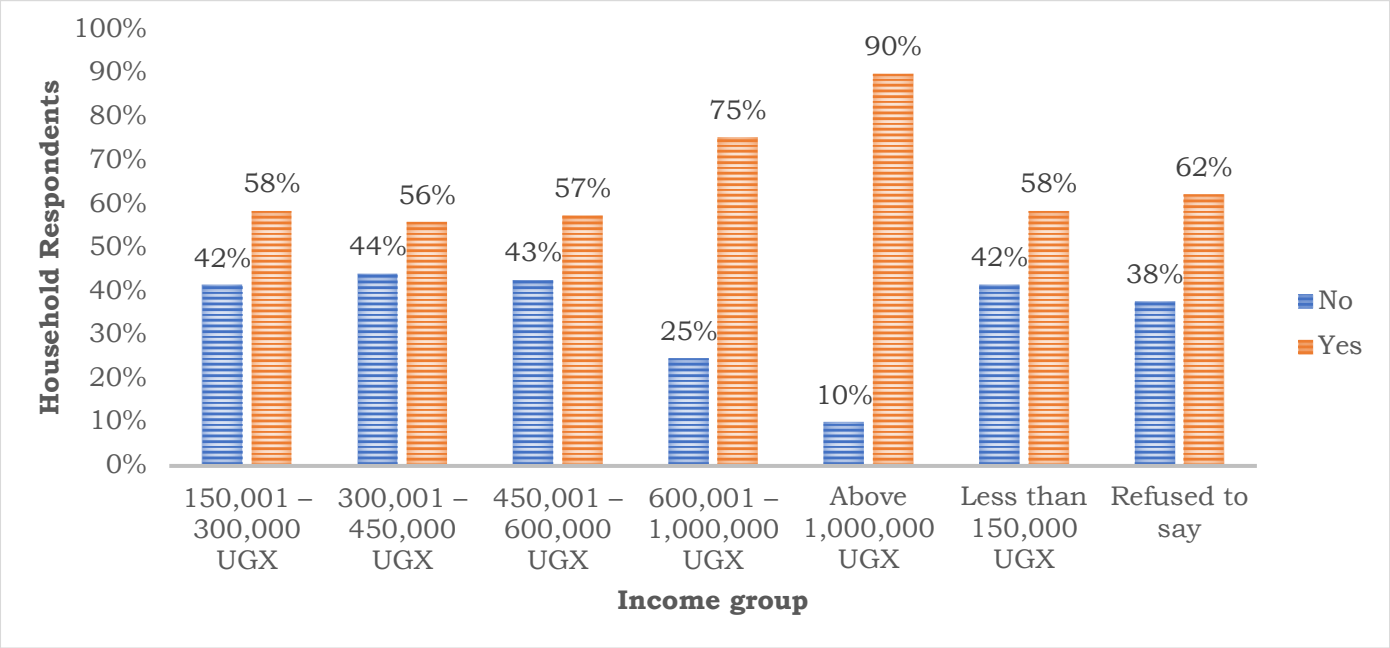


*Figure 33: Willingness to spend UGX 300,000 to buy a clean cooking technology segmented by income group*

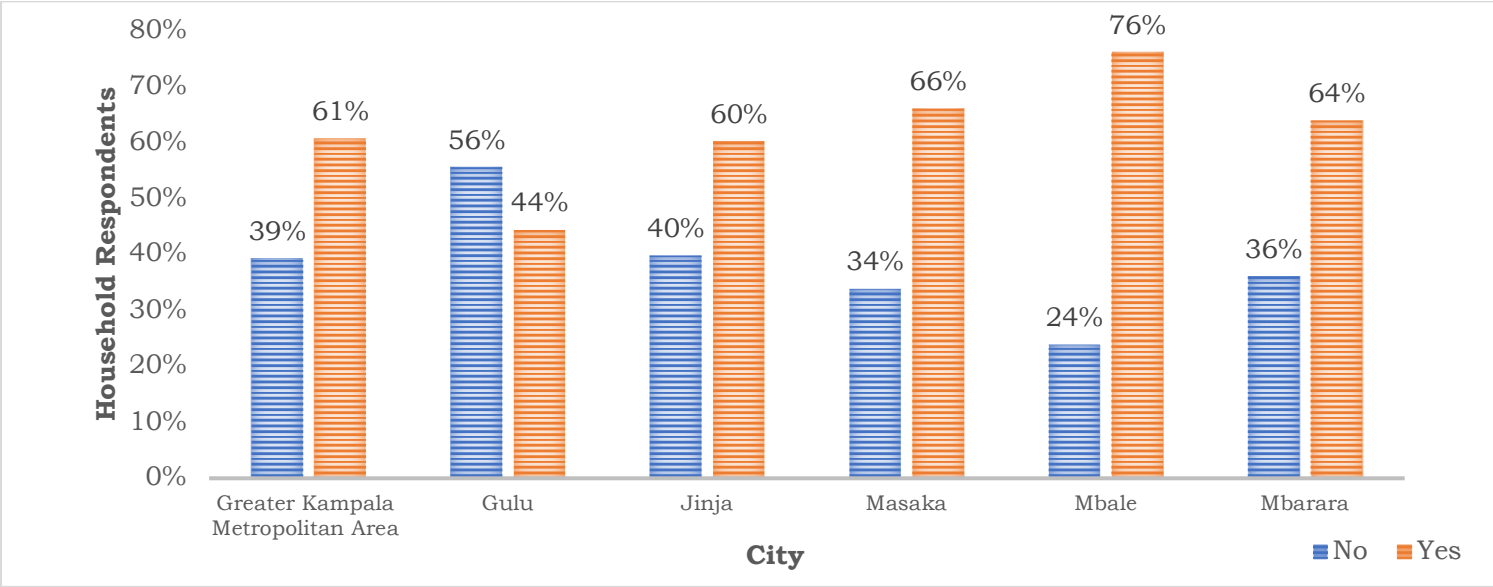


*Figure 34: Willingness to spend UGX 300,000 to buy a clean cooking technology segmented by city*

## 3.10 Cooking-related health and safety issues

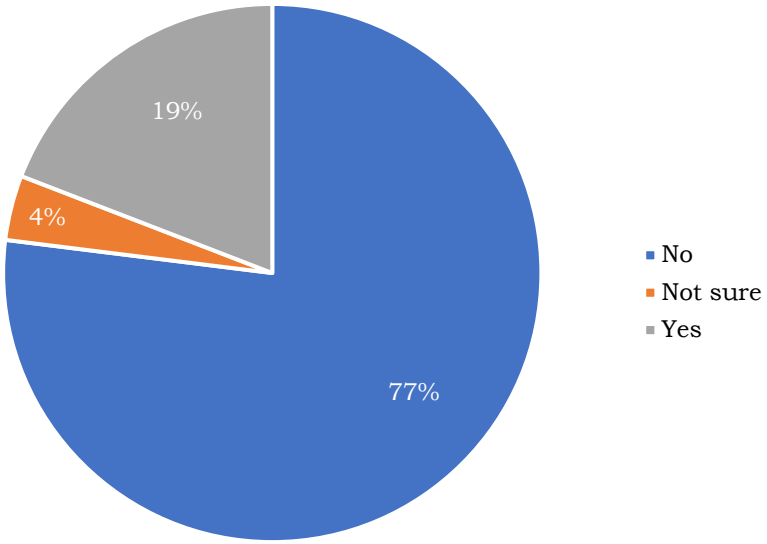


*Figure 35: Households reporting cooking-related injury to a household member (n = 3669)*

Nearly 20% of households reported that a member suffered a cooking-related injury in the past year (Figure 35). Among those who experienced injuries (n = 702), the most common issues were respiratory complications such as asthma (94%) and cough (82%), itchy or watery eyes (80%), and permanent injuries (94%), including some fatal cases.

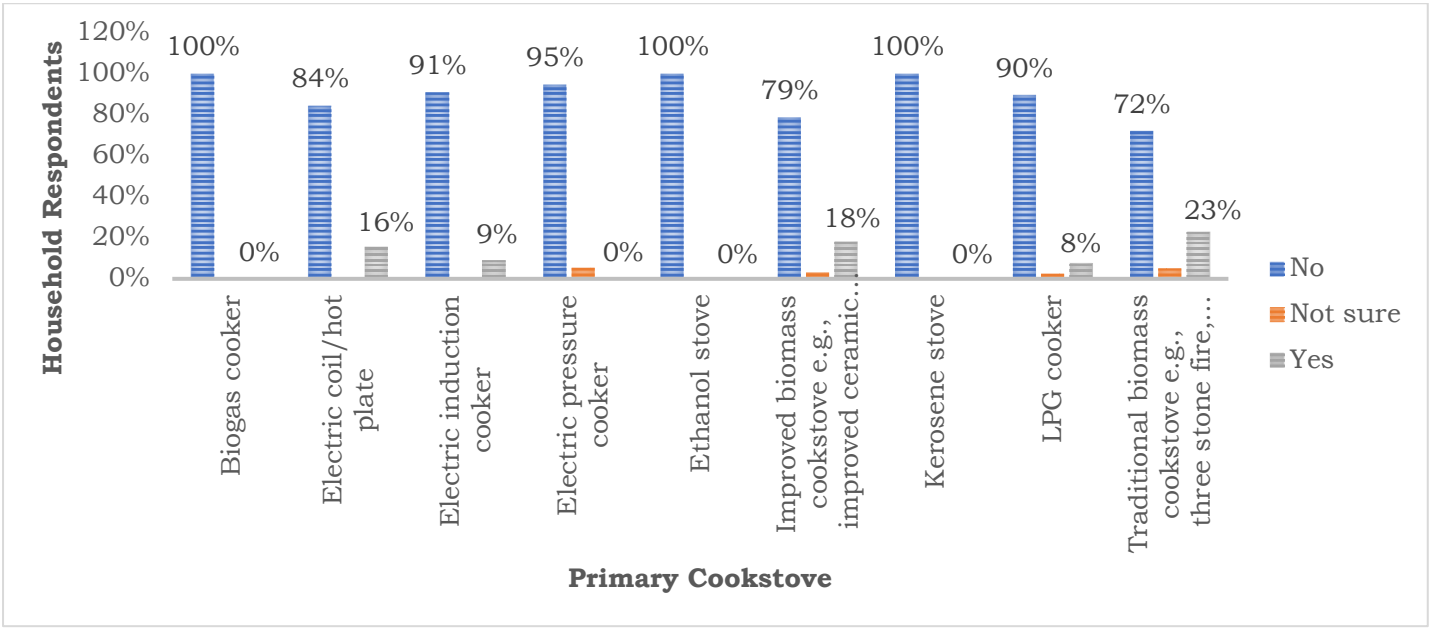


*Figure 36: Occurrence of cooking-related injuries segmented by type of primary cookstove*

Households using traditional biomass cookstoves (23%), improved biomass cookstoves (18%), and electric coils/hot plates (16%) were more likely to report cooking-related injuries compared to others (Figure 36). Notably, no injuries were reported by households using electric pressure cookers. This highlights the potential of electric pressure cookers to improve cooking safety within households. These appliances are efficient, with minimal heat escape and robust safety features, significantly reducing the risk of burns and ensuring a smoke-free cooking environment that helps avoid respiratory illnesses.

Figure 37 shows that there is a higher incidence of cooking-related injuries in households where women (20%) are responsible for cooking, compared to those where men (9%) are in charge. This is most probable because women handle the bulk of cooking responsibility (Figure 24) in a home and often are attending to other duties concurrently, exposing then to injuries in unsafe environments.

*Inference*: Awareness campaigns focusing on the superior safety features of electric pressure cookers will play a big role towards adoption of e-cooking appliances, especially by the women. Highlighting these safety benefits will be crucial in encouraging the adoption of electric pressure cookers as a safer cooking option.

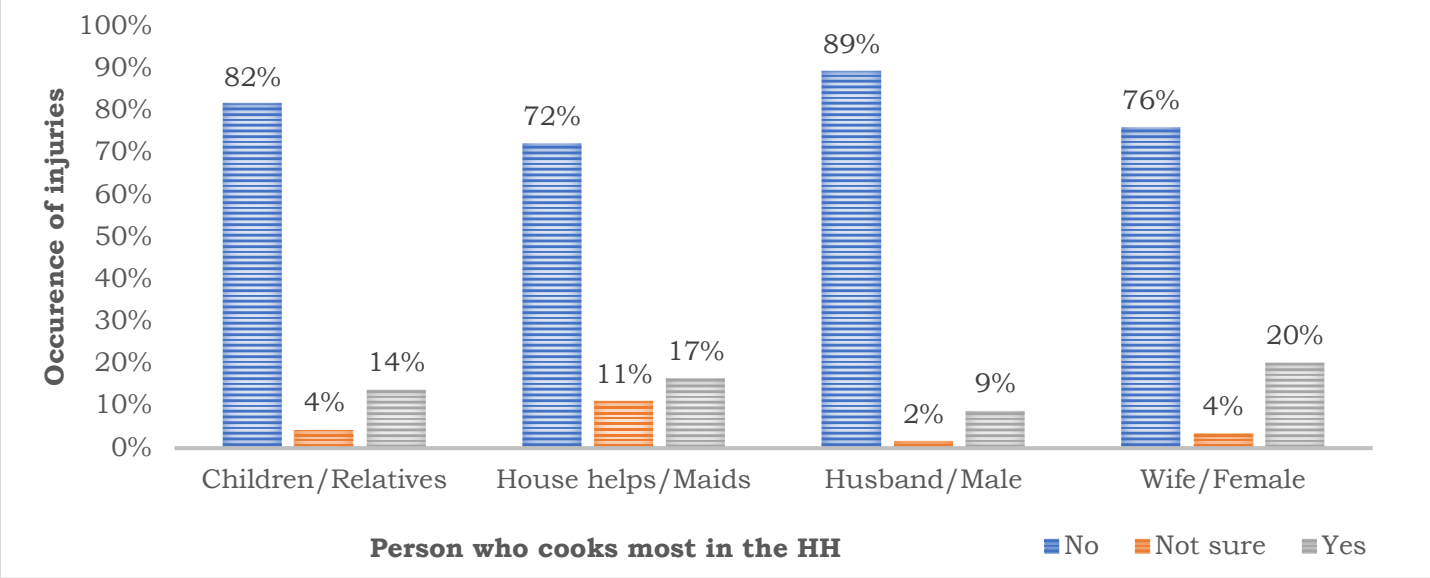


*Figure 37: Occurrence of cooking related injuries segmented by who cooks most in the household*

## 3.11 Access to cooking fuels

### Distance travelled to access cooking fuels

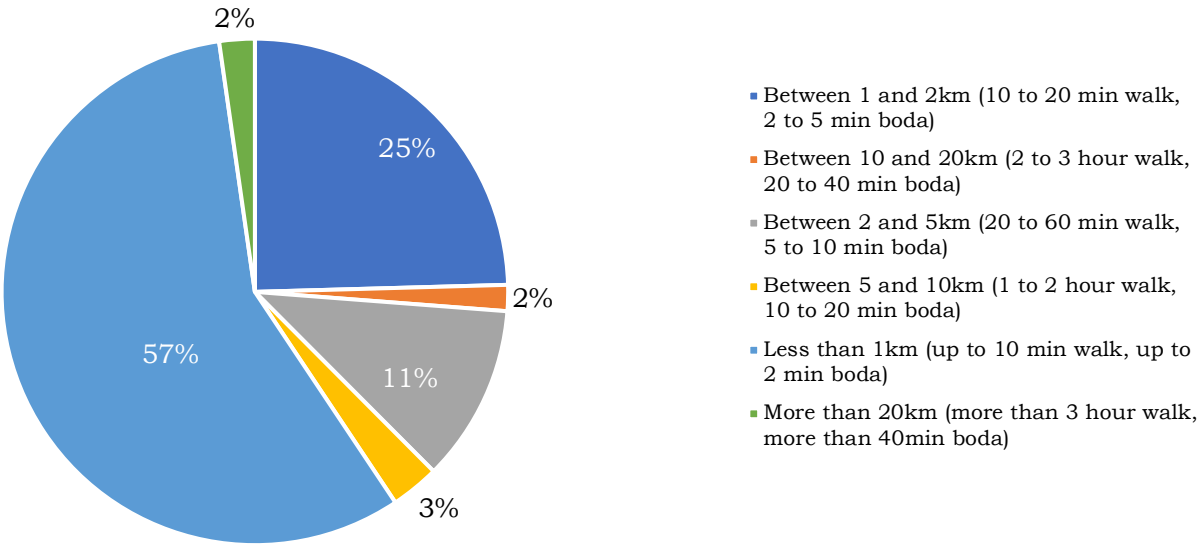


*Figure 38: Distance travelled to access cooking fuels*

The findings (Figure 38) show that 57% of households source their cooking fuel from within one kilometre of their homes, reflecting an extensively developed supply chain of commonly used cooking fuels in the communities. For those traveling farther, 25% source fuel within two kilometres, while 8% travel over five kilometres. Figure 39 shows distance travelled segmented by city.

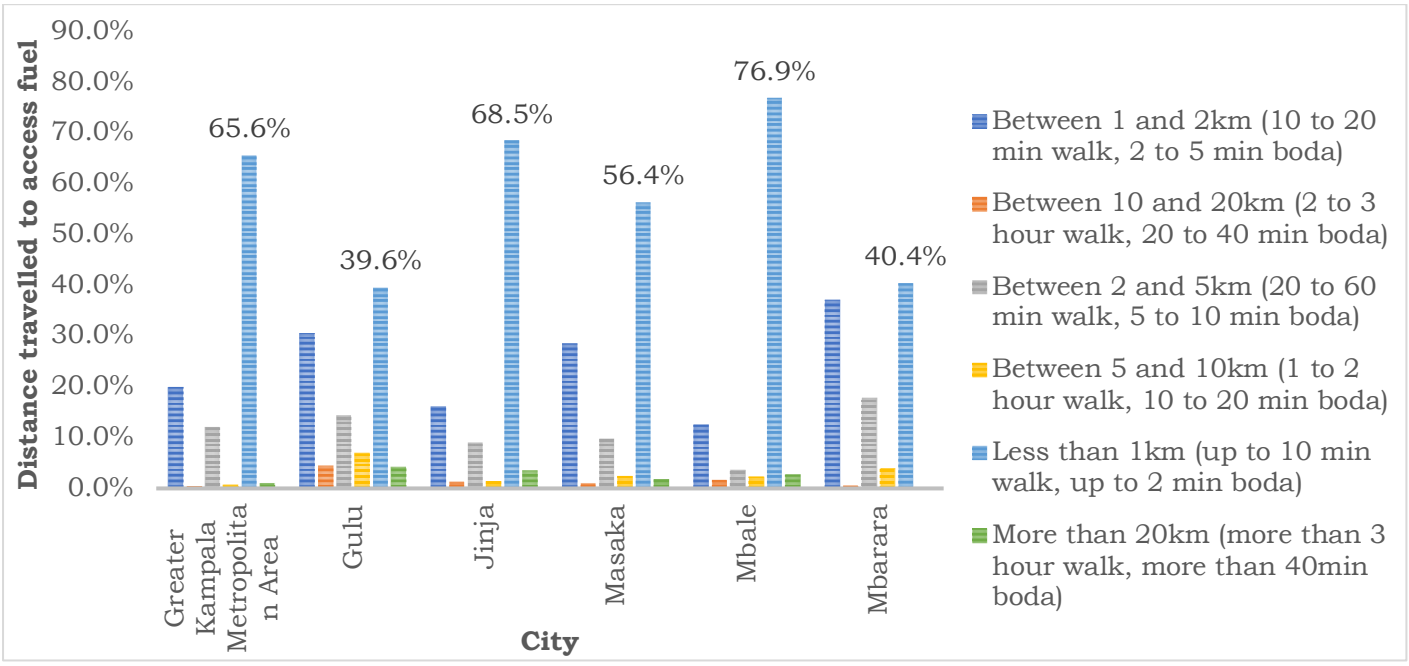


*Figure 39: Distance travelled to access cooking fuels segmented by city*

**Frequency of purchasing primary cooking fuels**

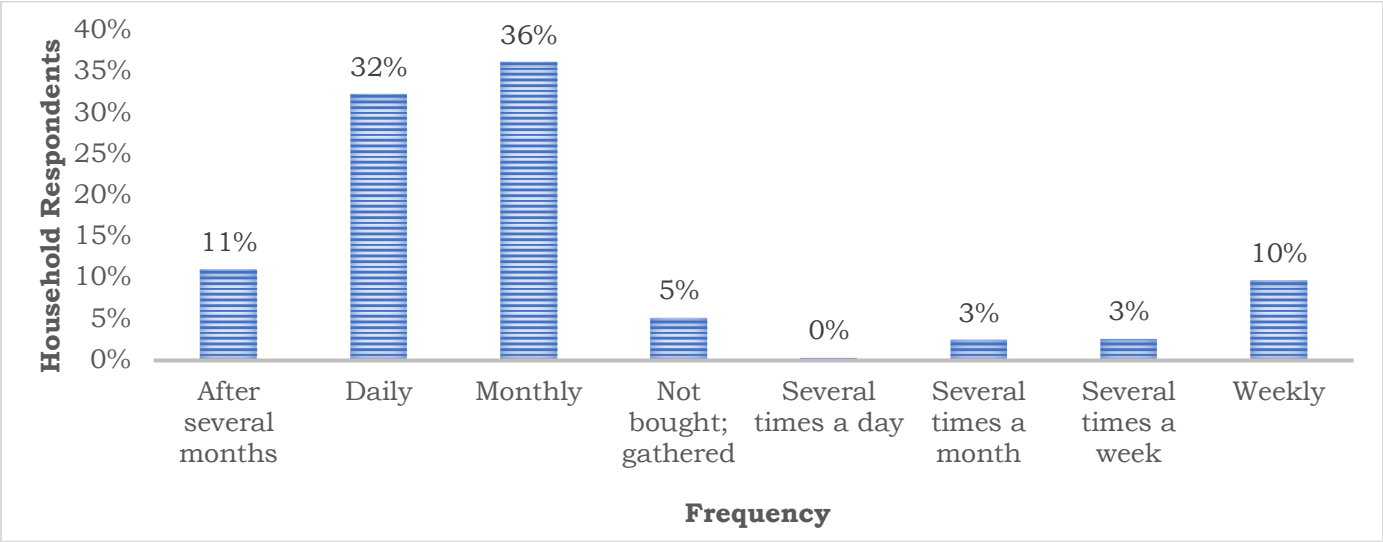


*Figure 40: Frequency of purchasing primary cooking fuel*

Data on the frequency of purchasing primary cooking fuels in Figure 40 reveals that most households (68%) buy their fuel either monthly or daily. Low-income households are more likely to make daily purchases, while higher-income households typically prefer monthly purchases (Figure 41).

Electric cooking offers significant benefits for both income groups. For the 32% of households – mainly low-income families – that purchase fuel daily, it eliminates the need for frequent trips, simplifying their daily routines and reducing associated effort and costs. For households that buy fuel monthly, electric cooking seamlessly aligns with their budgeting habits, making it easier to incorporate into their regular expenses.

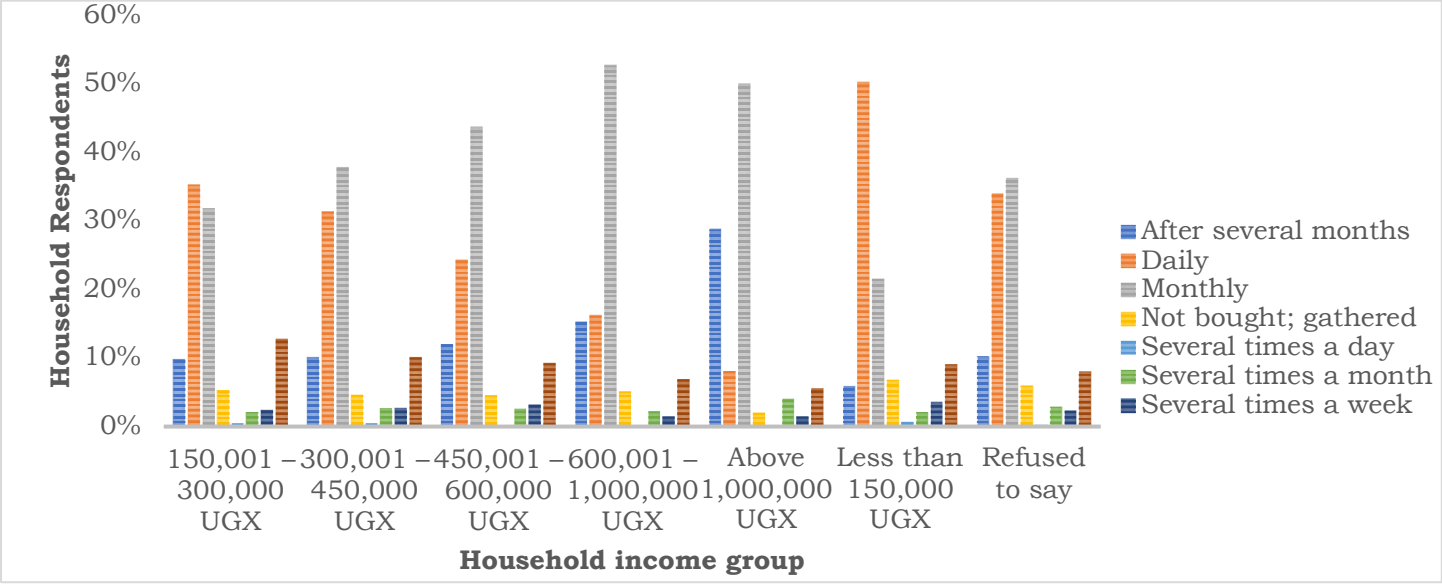


*Figure 41: Frequency of purchasing primary cooking fuel segmented by income group*

*Inference:* From the study, approximately 90% of the households were connected to electricity and rated it available most of the time. With high availability of convenient payment mechanisms – such as purchasing electricity units via mobile money from the comfort of home – electric cooking offers significant potential to simplify the process of acquiring cooking fuel for all households. In cities, such as Gulu, where households must travel longer distances to obtain cooking fuel (e.g., over five kilometres), electric cooking should be positioned as a solution that reduces the time and effort spent sourcing traditional cooking fuels.

Lastly, the e-cooking tariff presents an opportunity for households to transition towards electric cooking. Households which purchased fuels on a daily routine used approximately UGX 2,000 every day, which amounted to UGX 60,000 monthly on cooking. Coupled with other uses of electricity in the households, awareness messages could be designed to show households the savings that could be derived from cooking with electricity at the e-cooking tariff threshold.

# 4. KNOWLEDGE, ATTITUDES & PERCEPTION ABOUT E-COOKING

# 4 KNOWLEDGE, ATTITUDES, AND PERCEPTIONS ABOUT E-COOKING

## 4.1 Access to and use of electricity

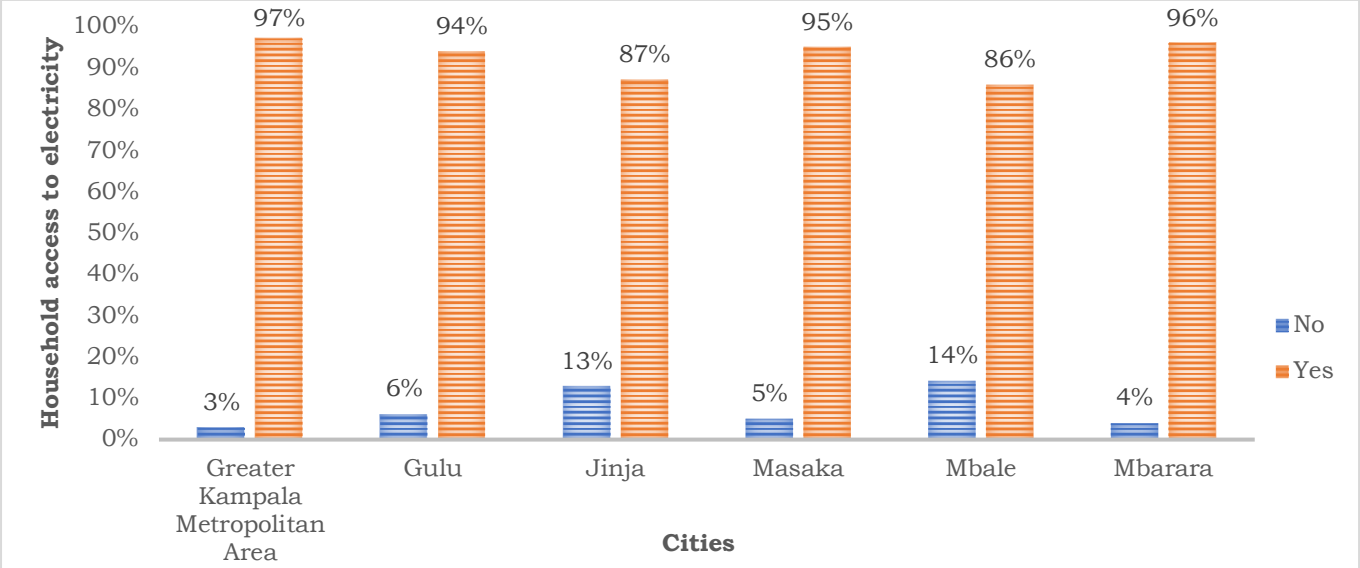


Figure 42: Household electricity access segmented by city

In all the surveyed cities (Figure 42), over 85% of households reported having access to electricity. The highest access rate was recorded in the Greater Kampala Metropolitan Area (GKMA) at 97%, while the lowest was in Mbale at 86%. Among the cities of GKMA, Jinja, Masaka, and Mbarara, nearly 100% of households with electricity access are connected to the national grid (Figure 43). In Gulu, however, only 77% of households with electricity are connected to the national grid, with off-grid sources like rooftop solar (10%) and solar lanterns/rechargeable lamps (13%) also playing a significant role. Additionally, access to electricity is notably higher in formal and semi-formal settlements (94%) compared to informal settlements (81%) as shown in Figure 44.

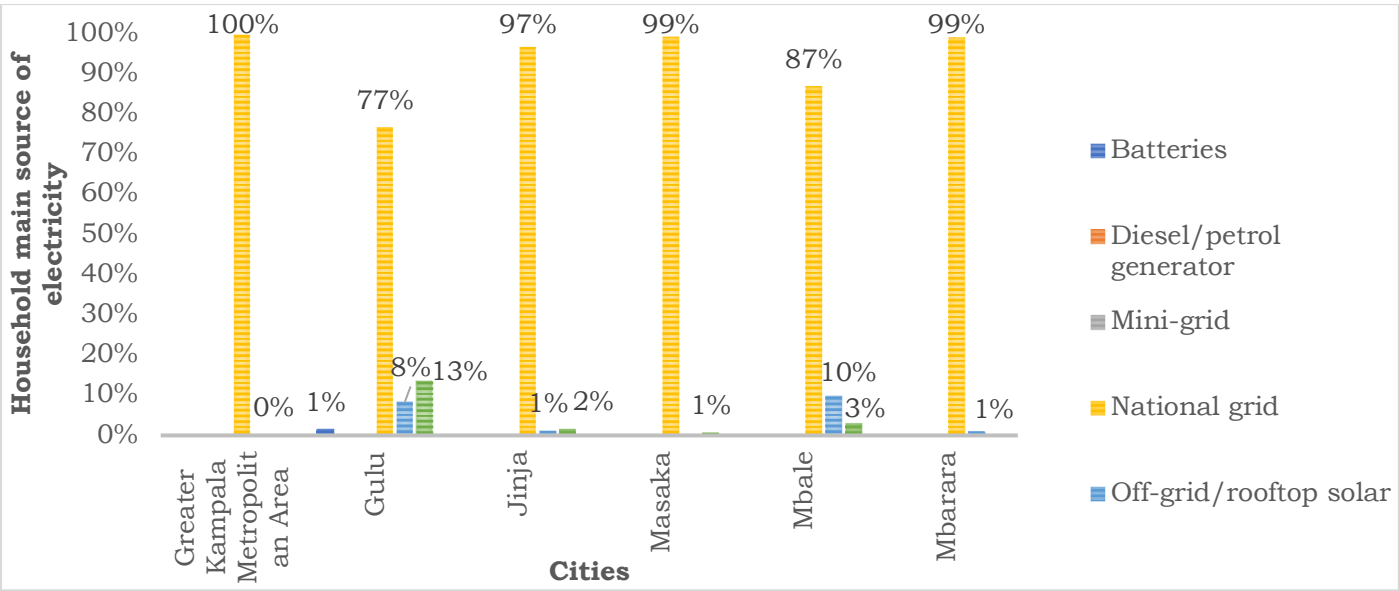


*Figure 43: Main source of electricity used in the households segmented by city*

*Inference:* The widespread access to grid electricity in urban areas provides a strong foundation for promoting electric cooking across all communities. Awareness campaigns about electric cooking should target households that already have a grid electricity connection. However, to ensure that no one is left behind in the transition to electric cooking, efforts should be made by responsible institutions to expand electricity grid connections to unserved areas. Additionally, future initiatives can incorporate the promotion of electric cooking solutions that are compatible with off-grid solar systems, particularly in cities like Gulu and Mbale, where off-grid solar use is already prevalent.

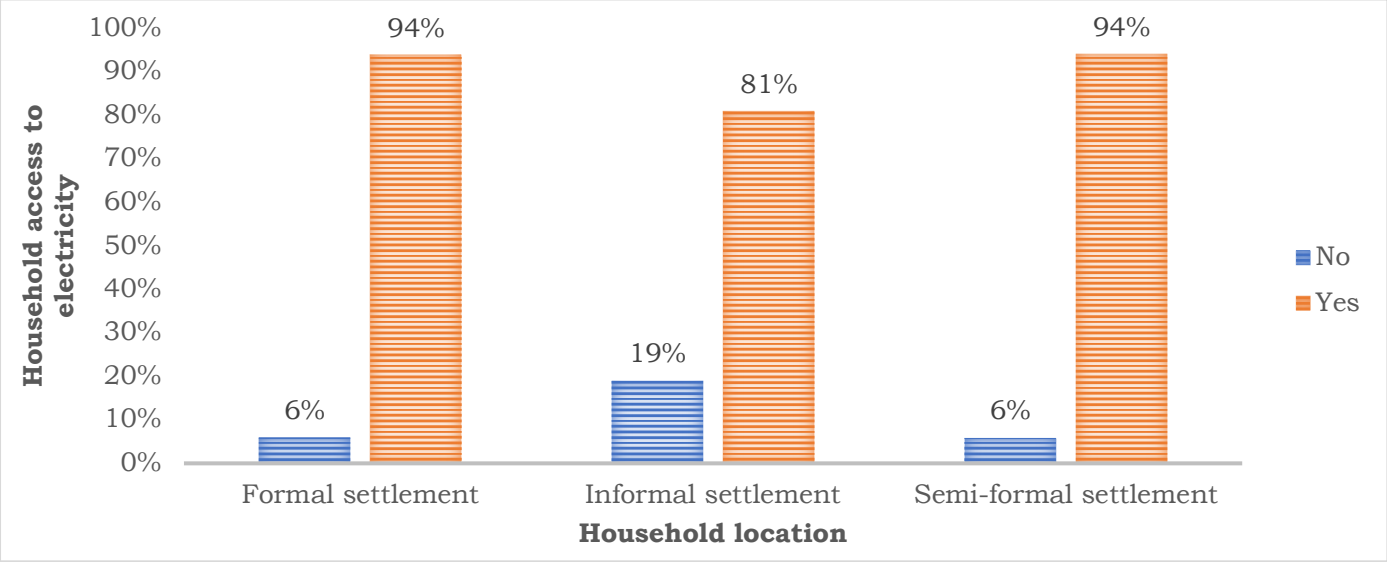


*Figure 44: Electricity access segmented by settlement type*

## 4.2 Reliability of electricity

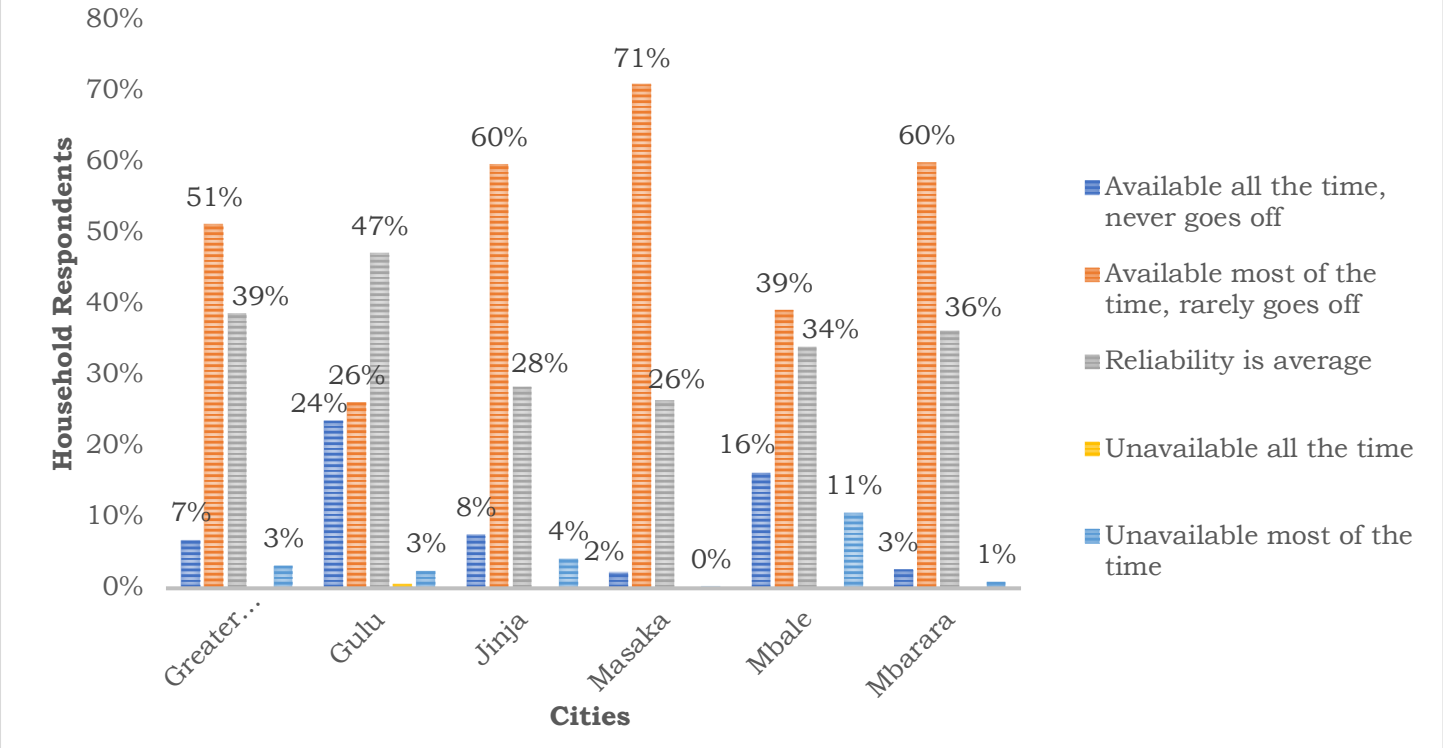


*Figure 45: Reliability of electricity service segmented by city*

The quality of electricity service plays a pivotal role in whether households choose to adopt and rely on electricity for cooking. Unreliable electricity – characterized by frequent or unpredictable interruptions – can deter households from using electricity as a primary cooking source.

Across the six cities surveyed (Figure 45), 62% of households with electricity access reported having a reliable supply, defined as electricity that either never goes off or rarely does. However, significant variations exist across cities. For example, 73% of households in Masaka reported reliable electricity, compared to only 50% in Gulu. In Mbale, 11% of households experience highly unreliable electricity, meaning it is unavailable most or all of the time, while this figure drops to just 1% in Mbarara. Additionally, 33% of households described the reliability of their electricity supply as average, meaning they could not conclusively classify it as either reliable or unreliable. No major differences in electricity reliability were observed across formal, informal, and semi-formal settlements.

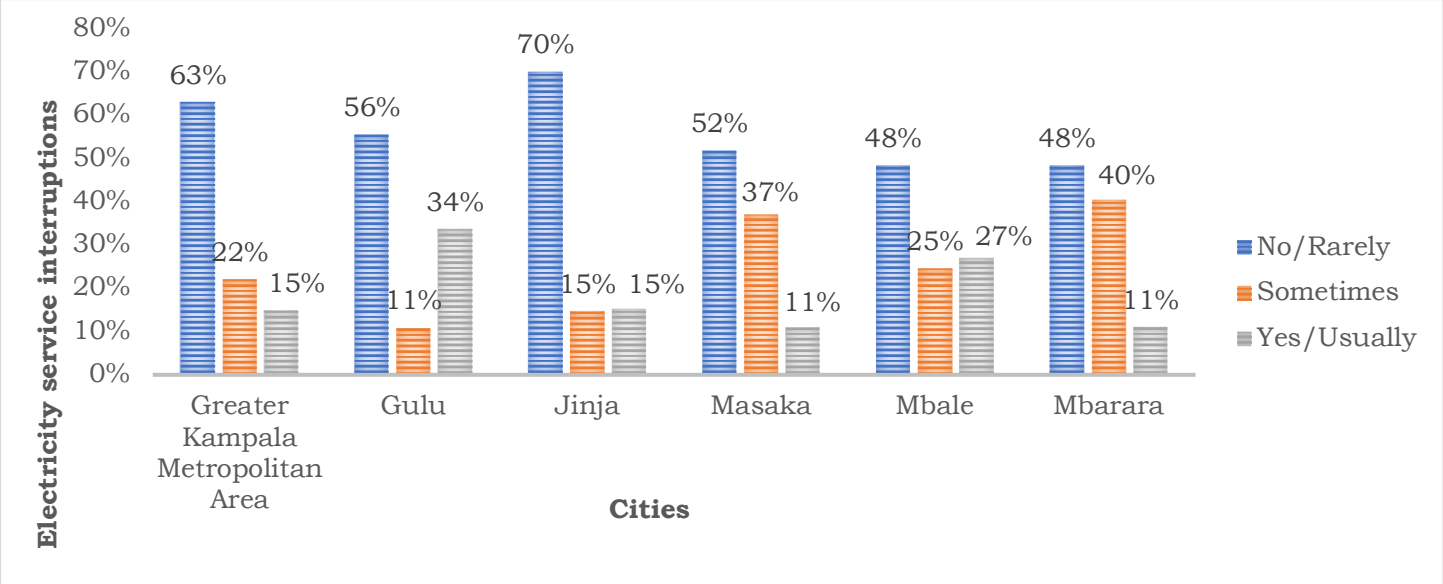


*Figure 46: Advance knowledge about electricity service interruptions segmented by city*

Another key challenge regarding electricity access is the lack of advance notice about electricity interruptions. Over 50% of households (Figure 46) reported that they rarely or never receive prior information about service disruptions, limiting their ability to plan electricity use effectively, including for cooking.

*Inference*: In order to address the challenges posed by unreliable electricity, behavioural interventions should promote electric cooking as part of a household's broader cooking fuel stack rather than as the sole cooking solution. This strategy aligns with current practices, as many households already use multiple cooking fuels. Encouraging households to integrate electricity into their existing cooking practices can help mitigate the impact of supply interruptions and allow the gradual adoption of electric cooking technologies.

## 4.3 Damage, repair, and maintenance of the appliances

Survey findings (Figure 47) reveal a low culture of appliance repair and limited awareness of appliance warranties across households in the study cities. On average, more than 50% of households reported never repairing or maintaining their damaged electrical appliances. The percentage of households that do not repair their appliances was lowest in Jinja (31%) and highest in Mbarara (60%). In all cities, very few households reported using appliance warranties.

These findings signify the need to raise awareness about the options available for repairing damaged electric cooking appliances. Emphasizing that electric cooking appliances can be repaired by local technicians and informing households about the warranties available for most of these appliances, will help build confidence that solutions exist to restore damaged appliances.

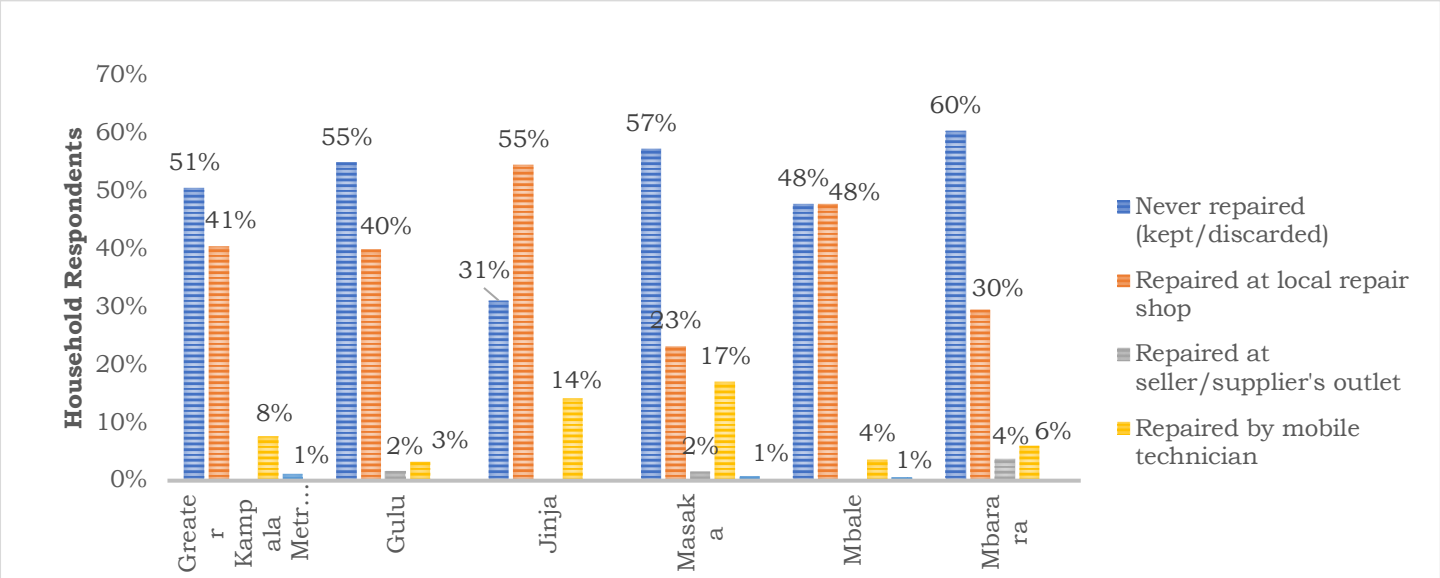


*Figure 47: Actions taken when electrical appliances get damaged segmented by city*

Among households that did repair their appliances, most used local repair shops, with some opting for mobile technicians or returning them to the seller's outlet. In Jinja, repairs at local shops were most common (55%), while Masaka had the fewest (23%). Masaka (17%) and Jinja (14%) also had relatively high shares of households using mobile technicians, while Gulu (3%) and Mbale (4%) had lower percentages.

*Inference:* Findings demonstrate the important role local repair technicians can play in ensuring the longevity of electric cooking appliances. Capacity-building interventions aimed at preparing local electrical technicians, particularly those with established repair shops, as well as mobile technicians in the target cities to repair EPCs and electric induction cookers are needed. Enhancing their skills to repair electric cooking appliances will contribute to the sustainability of electric cooking in these areas. Lastly, inclusion of maintenance and repair services as part of e-cooking interventions, including awareness creation is key towards behavioural and attitude patterns towards e-cooking appliances.

## 4.4 Awareness about electric cooking in households

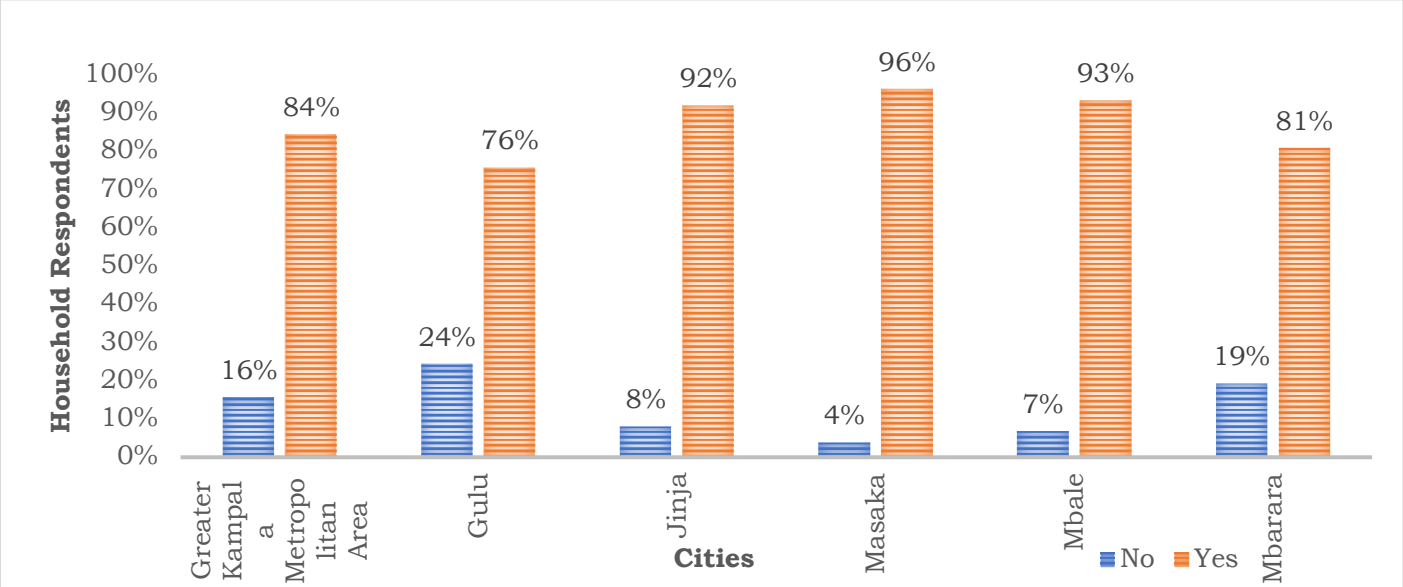


*Figure 48: Awareness about electric cooking segmented by city*

Across all the study cities (Figure 48), most households reported being aware of electric cooking, with the highest awareness levels in Masaka (96%), Mbale (93%), and Jinja (92%) cities. Awareness was lowest in the Greater Kampala Metropolitan Area (84%), Mbarara (81%), and Gulu (76%) cities. Despite the reported widespread awareness of electric cooking, only a small percentage of households currently use electricity for cooking, either as a primary or secondary fuel. This suggests that many households may have limited or incomplete knowledge, which has prevented them from fully transitioning to electric cooking. Therefore, well-designed awareness campaigns are essential to help large segments of the population to better understand the advantages of electric cooking over traditional and other modern cooking methods.

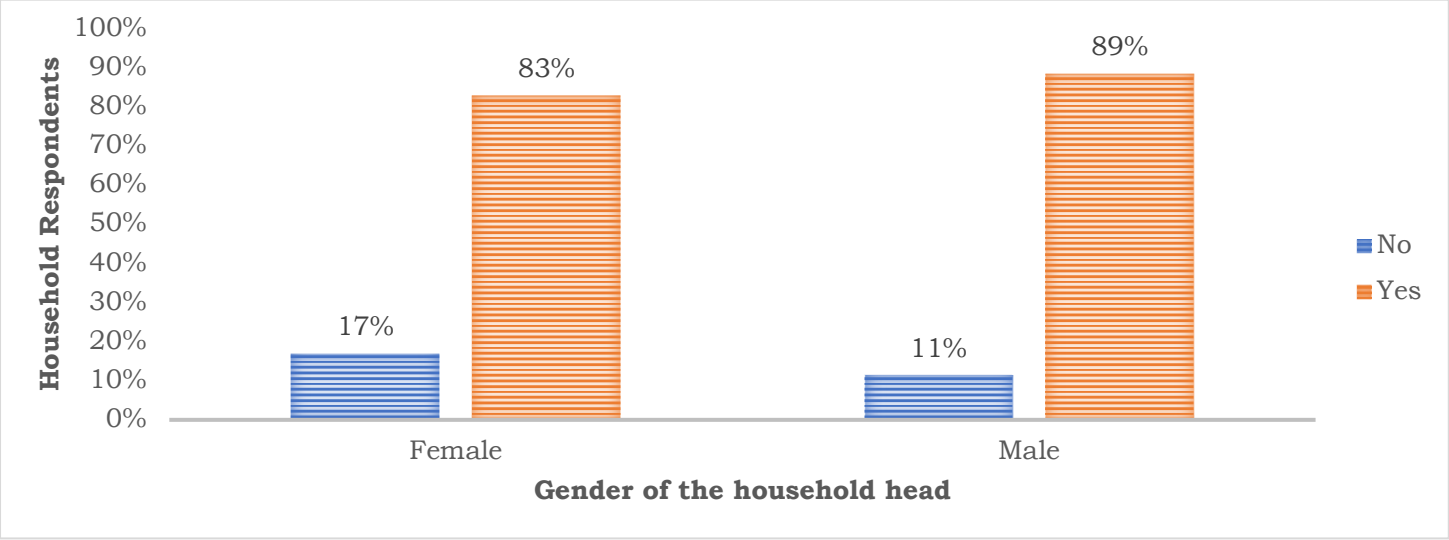


*Figure 49: Awareness about electric cooking segmented gender of household head*

Female-headed households reported slightly lower levels of awareness about electric cooking (83%) compared to male-headed households (89%) as shown in Figure 49. Additionally, fewer household heads with primary education (79%) or no formal education (70%) reported being aware of electric cooking, compared to those with post-primary education. To address this gap, it is crucial to communicate electric cooking messages in the local languages of the target cities, ensuring that those with limited or no formal education can access and understand the information. This is especially important in cities like Gulu, Mbarara, and GKMA, where significant portions of the population still lack basic awareness of electric cooking.

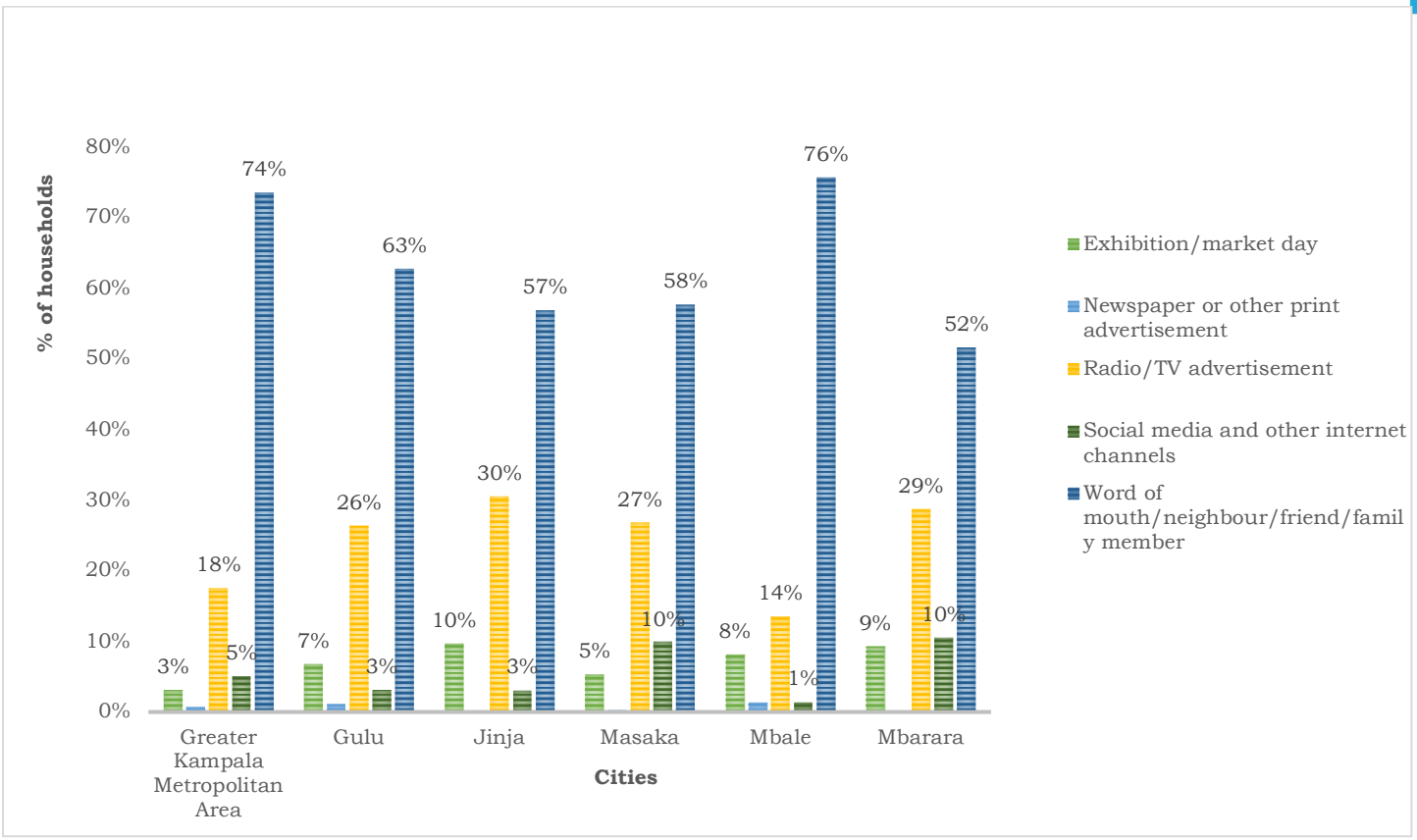


*Figure 50: How households first heard about electric cooking segmented by city*

Among households that were already aware of electric cooking (Figure 50), most learned about it through word of mouth from neighbours, friends, and family members. Additionally, information about electric cooking was accessed via radio and television channels. These findings highlight the key role personal interactions play in spreading knowledge and information. As a result, physical engagements, such as town hall-style meetings, should be central to electric cooking awareness campaigns. These events, when combined with radio and television programs or advertisements, will not only help reach a wider audience but also provide opportunities for clarity, allowing people to ask questions and receive answers.

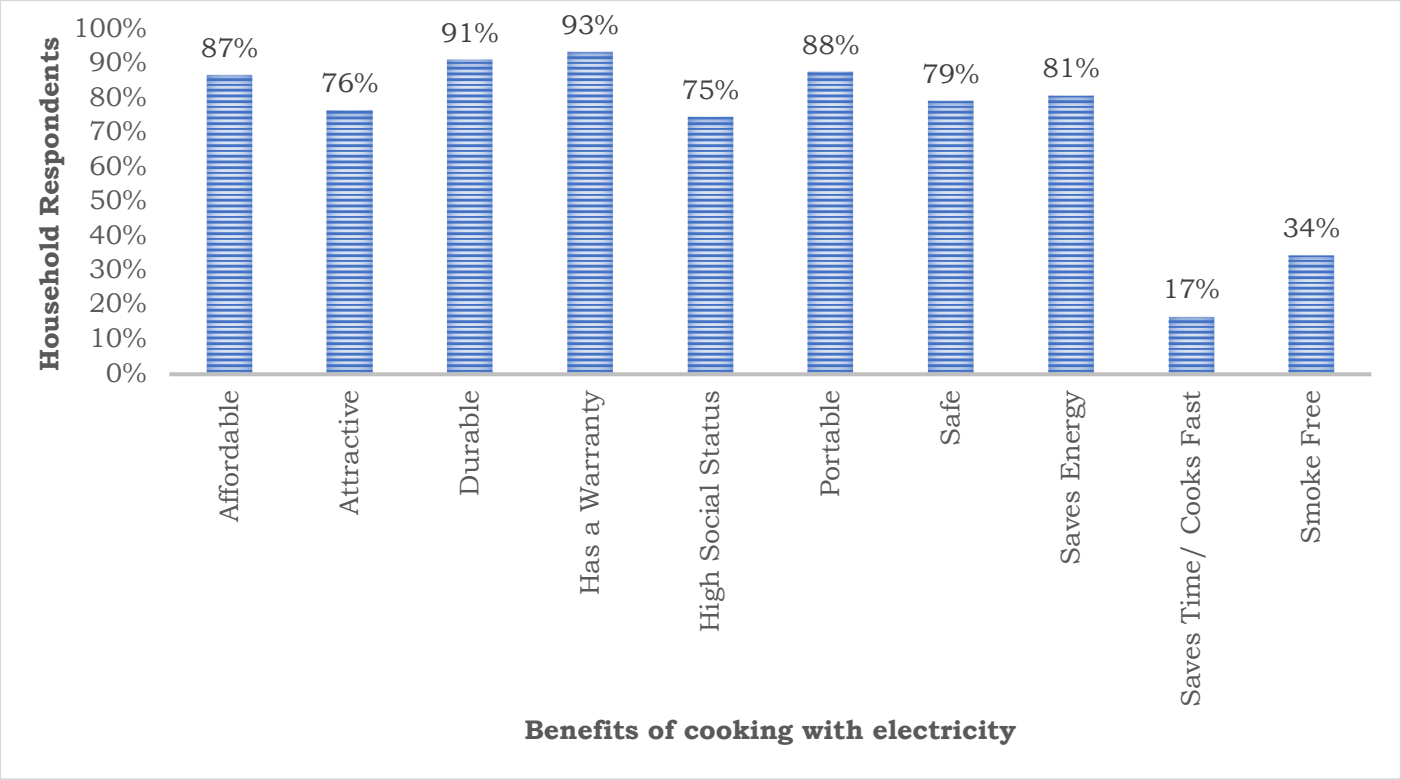


*Figure 51: Perceived knowledge of benefits of cooking with electricity among households*

Among households aware of electric cooking (see Figure 51), over 80% recognized benefits such as appliance warranties, durability, portability, affordability of electricity, and energy efficiency. However, only 17% identified fast cooking or time savings as a benefit, and just 34% acknowledged the advantage of smoke-free cooking. While many households are aware of several benefits of electric cooking, there remains a need to emphasize less commonly recognized but equally significant advantages, such as smoke-free cooking and time-saving features – particularly those offered by electric pressure cookers.

These benefits are well-documented and supported by Uganda's eCookbook[15], making them key points to emphasize in awareness campaigns.

[15] mecs.org.uk/wp-content/uploads/2024/10/Uganda-eCookbook-updated-2024-1.pdf

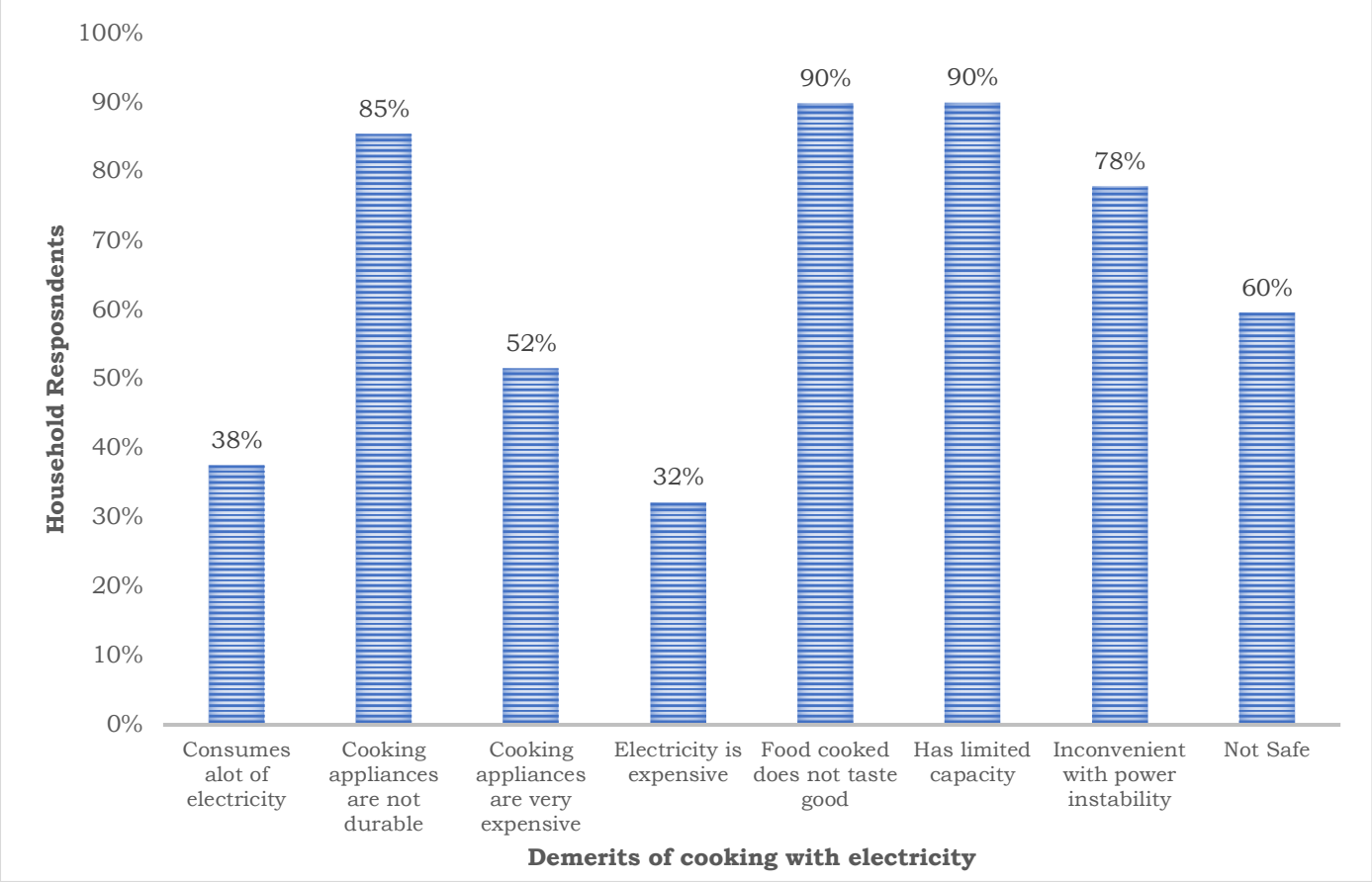


*Figure 52: Perceived knowledge of demerits of cooking with electricity among households*

From Figure 52, approximately 85% of households aware of electric cooking cited limited capacity, differences in food taste, and concerns about appliance durability as drawbacks. Additionally, power instability, safety concerns, and the high cost of appliances were reported by 78%, 60%, and 52% of respondents, respectively. Fewer than 40% expressed concerns about high electricity consumption or costs.

*Inference*: The findings from the study indicate that most urban residents are aware about electric cooking. Furthermore, it can be deduced that traditional media, especially Television and Radio still play a big role in mass communication for all population segments. Additionally, the large number of responses collected for access to information on e-cooking through word of mouth indicates the importance of having change agents for e-cooking and the significance of awareness creation through demonstrations. Awareness campaigns should also dispel sociocultural misconceptions such as doubts about capacity, taste, availability of electric cooking appliances in various sizes, capable of meeting the needs of most family sizes in Uganda and durability as salient issues which are likely to pose greater barriers to the adoption of electric cooking than economic concerns.

Lastly, on-going efforts to ensure the quality and durability of appliances, such as standardization, testing, and certification by the Uganda National Bureau of Standards (UNBS), should also be communicated.

## 4.5 Points of sale for electric cooking appliances


*Figure 53: Presence of distribution/ supply centres of electric cooking appliances segmented by city*

An extensive supply chain, including widespread presence of centres where people can purchase electric cooking appliances is crucial for accelerating electric cooking solutions in communities. Yet, the supply chain for these appliances remains underdeveloped in most cities across Uganda. In all cities except Jinja (Figure 53), less than 50% of the respondents reported the presence of distribution/supply centres of electric cooking appliances in their communities. At 73%, Jinja has the highest presence of electric cooking distribution centres while Mbarara (29%) has the lowest. Formal settlements have the highest reported availability of distribution centres (51%) than informal and semi-formal settlements reflecting better infrastructure and market penetration.

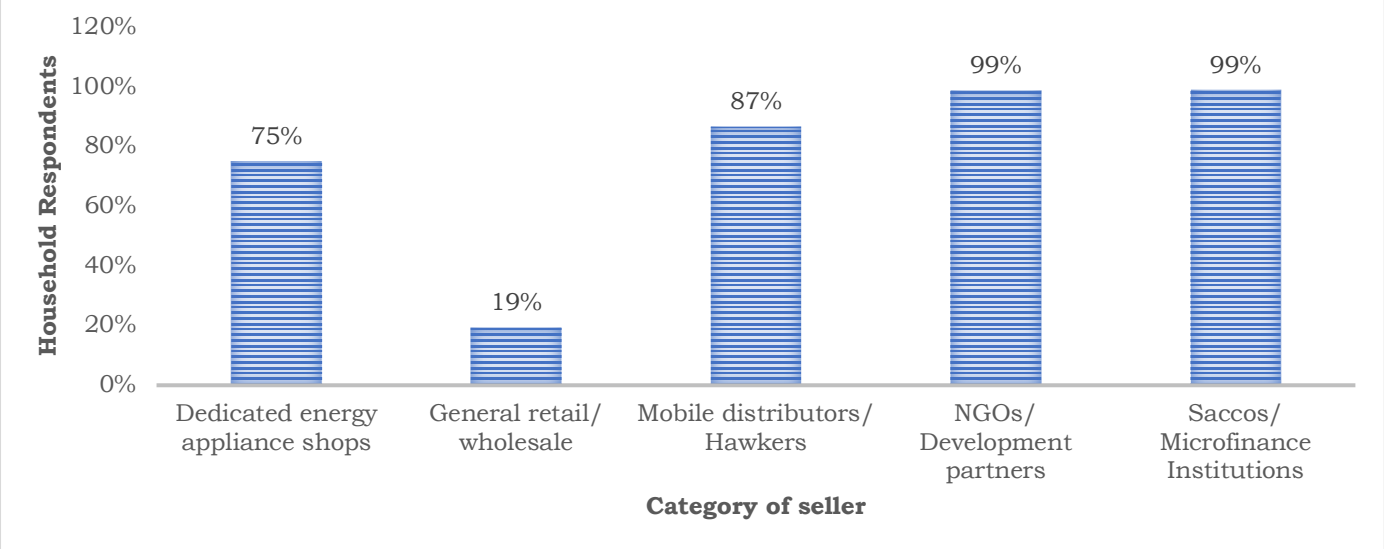


*Figure 54: Main suppliers/ distributors of electric cooking appliances*

Across study cities, NGOs/development partners, saccos/microfinance institutions, mobile distributors, and dedicated energy appliance shops were reported as the leading sellers of electric cooking appliances (see Figure 54). Nevertheless, most households prefer to purchase their clean cooking technologies from specialist suppliers (47%) and general local retailers (34%), with fewer households preferring to buy from exhibitions, supermarkets, and microfinance institutions (Figure 55).

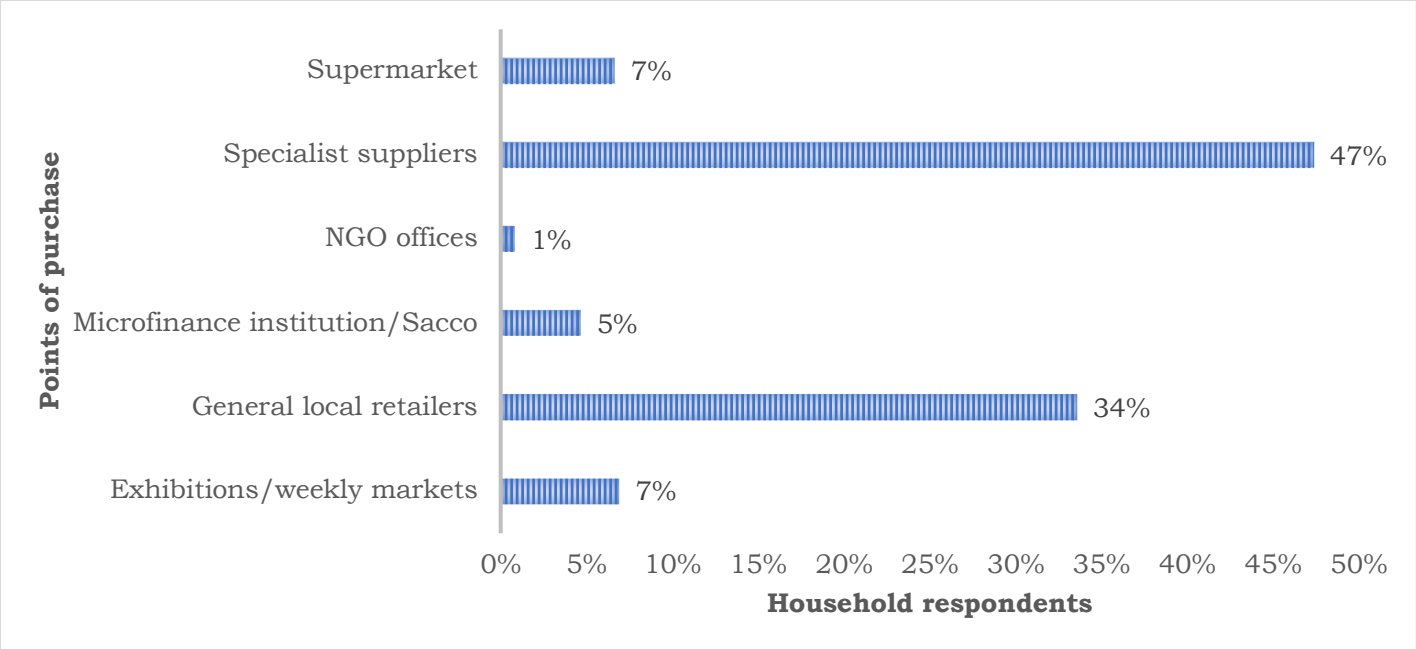


*Figure 55: Preferred point of purchasing clean cooking technology*

*Inference*: Different models for distribution of e-cooking technologies could be employed based on the status quo. In cities and communities where suppliers are already existing, awareness-building efforts should collaborate with these suppliers, particularly, specialist appliance suppliers, to conduct joint activities, connect with potential buyers, and facilitate easy access to appliances. In cities with few or no suppliers, partnerships with external specialist suppliers are essential to expand their presence in underserved areas, ensuring broader access to electric cooking technologies.

## 4.6 Perceptions about electric cooking versus traditional cooking methods and modern cooking methods

*Table 1: Perceptions about electric cooking versus traditional cooking methods*

| Perception | Agree | Disagree | Do not know |
|---|---|---|---|
| Cooking with electricity is safer and healthier as compared to traditional cooking methods | 73% | 24% | 3% |
| Cooking with electricity is more convenient compared to traditional cooking methods | 76% | 19% | 5% |
| Electricity as a cooking fuel is easily available to me compared to traditional cooking fuels | 62% | 32% | 6% |
| Cooking with electricity is a faster cooking solution compared to using traditional cooking methods | 90% | 7% | 3% |
| Electricity as a cooking fuel is more affordable compared to traditional cooking fuels | 26% | 69% | 5% |
| Cooking with electricity portrays a higher social status compared to traditional cooking methods | 81% | 12% | 7% |

*Table 2: Perceptions about electric cooking versus other modern cooking methods*

| Perception | Agree | Disagree | Do not know |
|---|---|---|---|
| Cooking with electricity is safer and healthier as compared to other modern cooking methods | 62% | 24% | 14% |
| Cooking with electricity is more convenient compared to other modern cooking methods | 64% | 22% | 14% |
| Electricity as a cooking fuel is easily available to me compared to other modern cooking fuels | 62% | 28% | 10% |
| Cooking with electricity is a faster cooking solution compared to using other modern cooking methods | 68% | 18% | 14% |
| Electricity as a cooking fuel is more affordable compared to other modern cooking fuels | 35% | 52% | 14% |
| Cooking with electricity portrays a higher social status compared to other modern cooking methods | 70% | 19% | 11% |

From the findings in Table 1, households generally hold a favourable view of electric cooking compared to traditional cooking methods such as charcoal and firewood, particularly in terms of safety, health, cooking convenience, cooking speed, availability, and social status. While this positive perception also extends to comparisons in Table 2 with other modern cooking methods like LPG, biogas, and ethanol, it is less pronounced. These insights indicate broad support for electric cooking, which is an essential foundation for its widespread adoption, provided existing barriers are addressed.

*Inference*: Despite the general perceived preference for e-cooking over traditional and other modern fuels, perceived

unaffordability remains a significant challenge. Most households—69% and 52%, respectively—perceive traditional fuels and other modern cooking methods to be more affordable than electricity. This perception contradicts earlier findings, which show that households relying on charcoal, firewood, and LPG incur similar or higher monthly fuel expenses than those using electricity. To address this misconception, targeted communication campaigns should educate the public on cost comparisons between routine fuel purchases for the different cooking fuels, not forgetting the upfront costs of the e-cook stoves. At the same time, these campaigns should continue to highlight other benefits of electric cooking to further strengthen its positive image and encourage greater adoption.

# 5. COMMUNICATION CHANNELS & MESSAGES

# 5 COMMUNICATION CHANNELS AND MESSAGES

## 5.1 Ownership of communication gadgets and sources of information in households

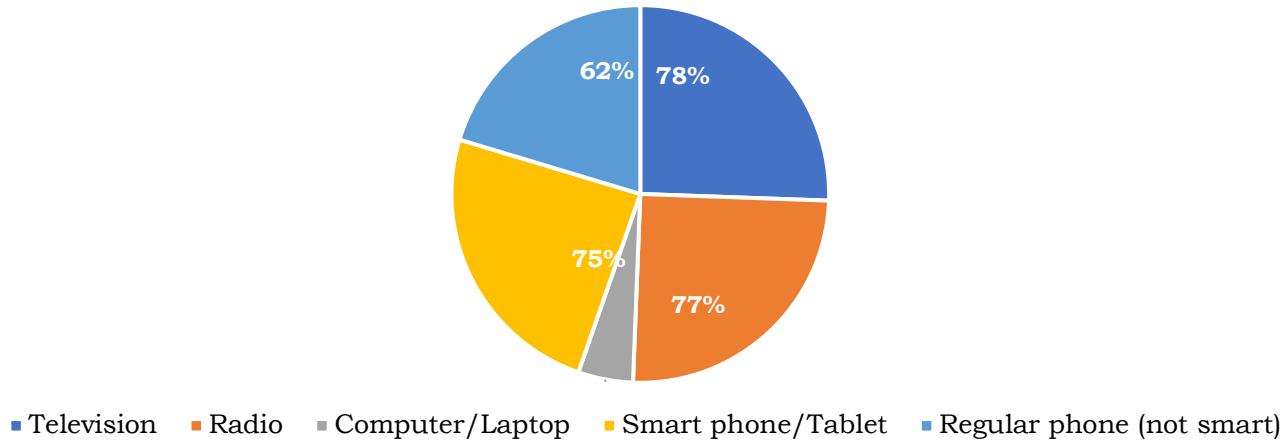


*Figure 56: Communication gadgets used in the households*

Households in the study cities report (Figure 56) high ownership of communication devices such as televisions, radios, and smartphones. These gadgets also rank as the top three sources of information across households. As shown in Table 3 below, televisions are the most common first-choice source of information, radios top the second-choice category, and social media channels are widely used as both first and second-choice sources. Similar trends are observed across most cities as shown in Table 4 and Table 5.

*Table 3: Preferred sources of information in households*

| Source of Information | First Choice | Second Choice | Third Choice |
|---|---|---|---|
| Radio programs | 27% | 28% | 14% |
| Social media channels | 25% | 24% | 16% |
| Television programs | 41% | 21% | 13% |
| Print media | 1% | 2% | 10% |
| Friends, relatives, or neighbours | 4% | 14% | 34% |
| Internet sources other than social media | 2% | 11% | 13% |

*Inference:* To maximize outreach, awareness campaigns should leverage this diverse range of communication channels across all cities. Television should be prioritized as the primary medium for disseminating electric cooking awareness messages in Greater Kampala Metropolitan Area, Jinja, Masaka, and Mbale, while radio should be the primary focus in Gulu and Mbarara. High smartphone ownership should also be leveraged to undertake digital campaigns. Other communication channels should also be utilized to ensure comprehensive coverage.

To capitalize on this, campaigns should consider engaging local influencers, community leaders, and the wider community through town hall-style meetings, and live technology demonstrations to foster community-driven awareness efforts. Additionally, interpersonal communication plays a critical role in spreading information

Friends, relatives, and neighbours are the most frequently cited third-choice sources of information (Table 3 and Table 6), underlining the importance of word-of-mouth strategies.

*Table 4: First choice household sources of information segmented by city*

| Source of Information | GKMA | Gulu | Jinja | Masaka | Mbale | Mbarara |
|---|---|---|---|---|---|---|
| Radio programs | 12% | **36%** | **32%** | 17% | **38%** | **31%** |
| Social media channels | **26%** | 21% | 22% | **33%** | 13% | **38%** |
| Television programs | **56%** | **34%** | **40%** | **47%** | **40%** | 26% |
| Print media | 0% | 1% | 1% | 0% | 2% | 0% |
| Friends, relatives, or neighbours | 4% | 4% | 3% | 2% | 5% | 4% |
| Internet sources other than social media | 3% | 4% | 1% | 1% | 3% | 1% |

*Table 5: Second choice household sources of information segmented by city*

| Source of Information | GKMA | Gulu | Jinja | Masaka | Mbale | Mbarara |
|---|---|---|---|---|---|---|
| Radio programs | **31%** | **25%** | **26%** | **29%** | **29%** | **30%** |
| Social media channels | **24%** | **27%** | **26%** | **28%** | 18% | 19% |
| Television programs | 19% | 14% | 24% | 21% | 18% | **31%** |
| Print media | 1% | 1% | 2% | 0% | 5% | 1% |
| Friends, relatives, or neighbours | 13% | 11% | 17% | 11% | 23% | 12% |
| Internet sources other than social media | 10% | 20% | 6% | 11% | 7% | 8% |

*Table 6: Third choice household sources of information segmented by city*

| Source of Information | GKMA | Gulu | Jinja | Masaka | Mbale | Mbarara |
|---|---|---|---|---|---|---|
| Radio programs | 18% | 8% | 18% | 16% | 11% | 17% |
| Social media channels | 16% | 16% | 15% | 18% | 14% | 14% |
| Television programs | 8% | 7% | 15% | 20% | 9% | 22% |
| Print media | 6% | 12% | 10% | 4% | 24% | 5% |
| Friends, relatives, or neighbours | **35%** | **43%** | **35%** | **30%** | **31%** | 27% |
| Internet sources other than social media | 16% | 14% | 7% | 12% | 10% | 16% |

## 5.2 Specific sources of information in households

### Television viewership

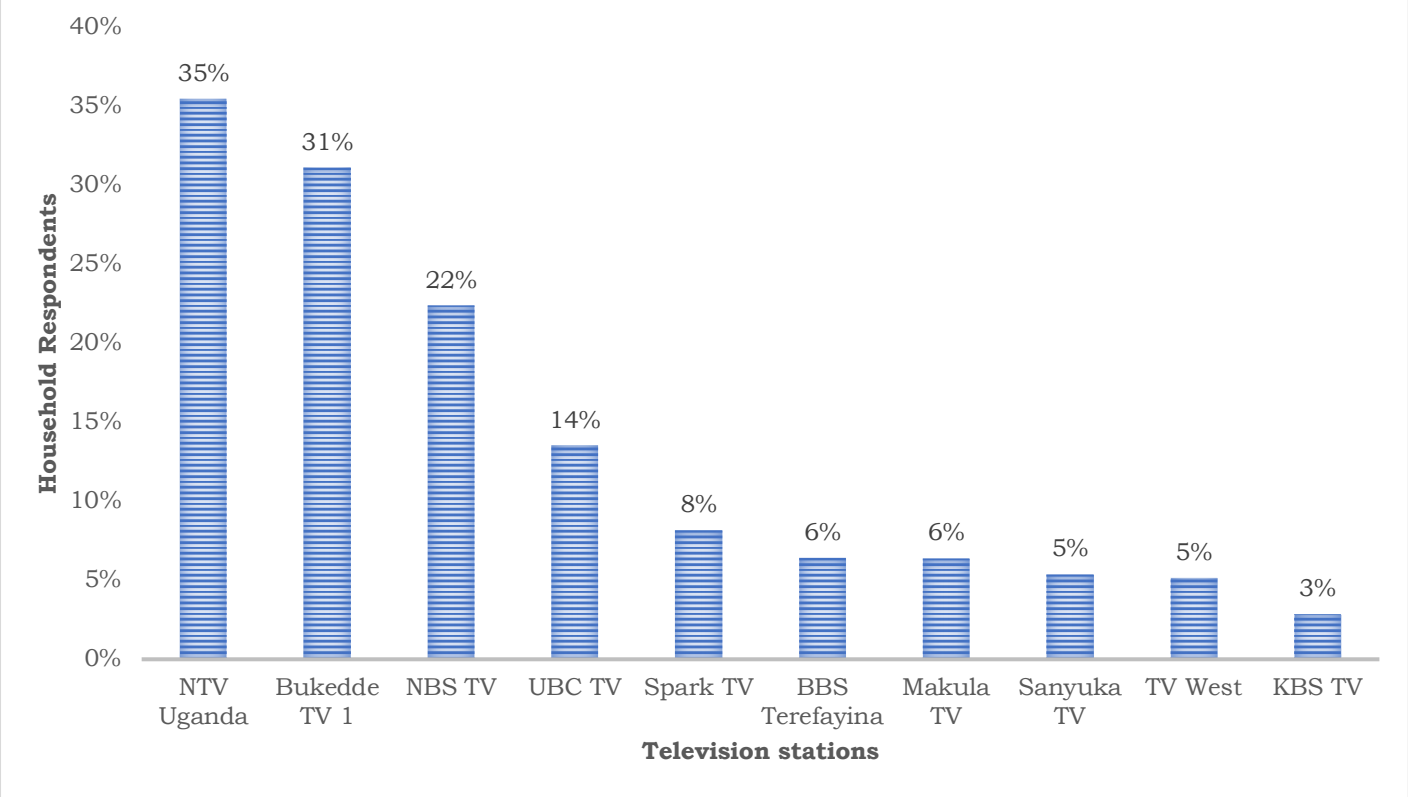


*Figure 57: Most watched television stations in households*

Across all the cities (Figure 57), the most watched television channel is NTV Uganda which is watched in 35% of the households. This is followed by Bukedde TV 1, NBS TV, and UBC TV which are watched in 31%, 22%, and 14% of the households. In Figure 58, disaggregation of television viewership by city also shows that NTV Uganda, NBS TV, UBC TV and Bukedi TV 1 are watched in all cities surveyed while other TV stations such as Spark TV, BBS Terefayina, Makula TV and Sanyuka TV (which mostly appeal to the youth) are watched in all cities aside from Gulu.

Apart from these leading nationwide TV stations, some cities have popular local language TVs. For example, BBS Terefayina is popular in Masaka and GKMA, Wan Luo in Gulu, and TV West in Mbarara

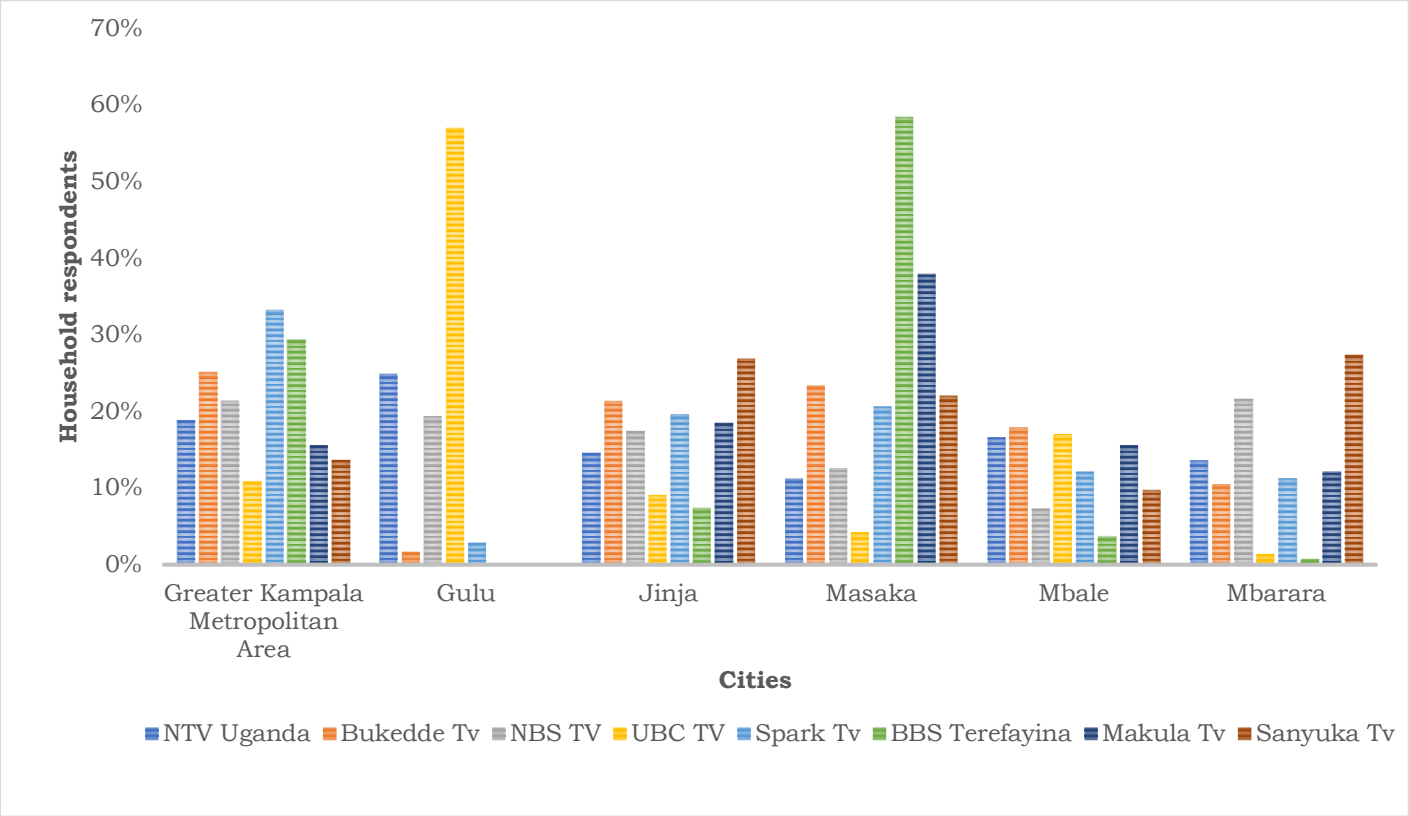


*Figure 58: Television viewership segmented by city*

*Inference:* It can be deduced that majority of the population accesses information from the common gadgets, i.e. Televisions, Radios, and Smart Phones. Furthermore, the most watched TV stations in all the 5 cities, i.e. NTV Uganda, Bukedde TV 1, NBS TV and UBC TV stations are nationwide, accessed in all regions of the country. Communication of messages on these channels will ensure spread of e-cooking beyond the nine project cities, hence impacting a wider audience.

These TV stations have an added advantage of having programs in both English and some of the local languages. In addition, leading local language TV stations in each of the cities should be used.

## Radio Listenership

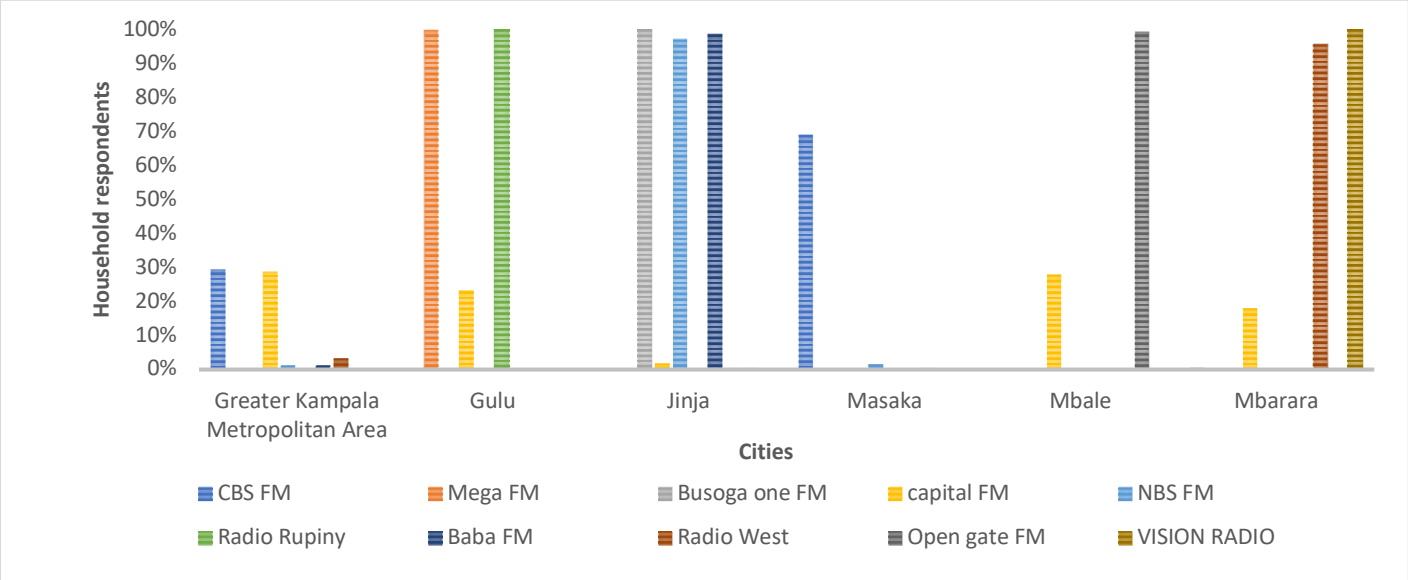


*Figure 59: Radio listenership segmented by city*

Data in Figure 59 on radio listenership shows that Capital FM is vividly appearing in most of the cities apart from Masaka City. It should also be noted that for each city/region, there is a unique radio station that is listened to. In the central region (GKMA and Masaka), CBS FM has the highest listenership (30% and 69% respectively) while Mega FM and Radio Rupiny are most listened to in Gulu City (Northern region) at a listenership of 100% each. In Jinja City, 100% of the respondents listened to Busoga One FM, while 99% and 98% listened to Baba FM and NBS FM respectively. Open gate FM (99%) and Capital FM (28%) are the most listened to radio stations in Mbale City. In Mbarara City, 100% of the respondents listen to Vision Radio while 96% listen to Radio West.

*Inference:* All Cities, aside from Masaka City listen to Capital FM. Also, each city/region has unique radio stations that are most popular. Therefore, awareness messages may have to be aired on at least one radio station in each City. English messages may be aired through Capital FM and messages in local languages through the local stations.

## Social media usage

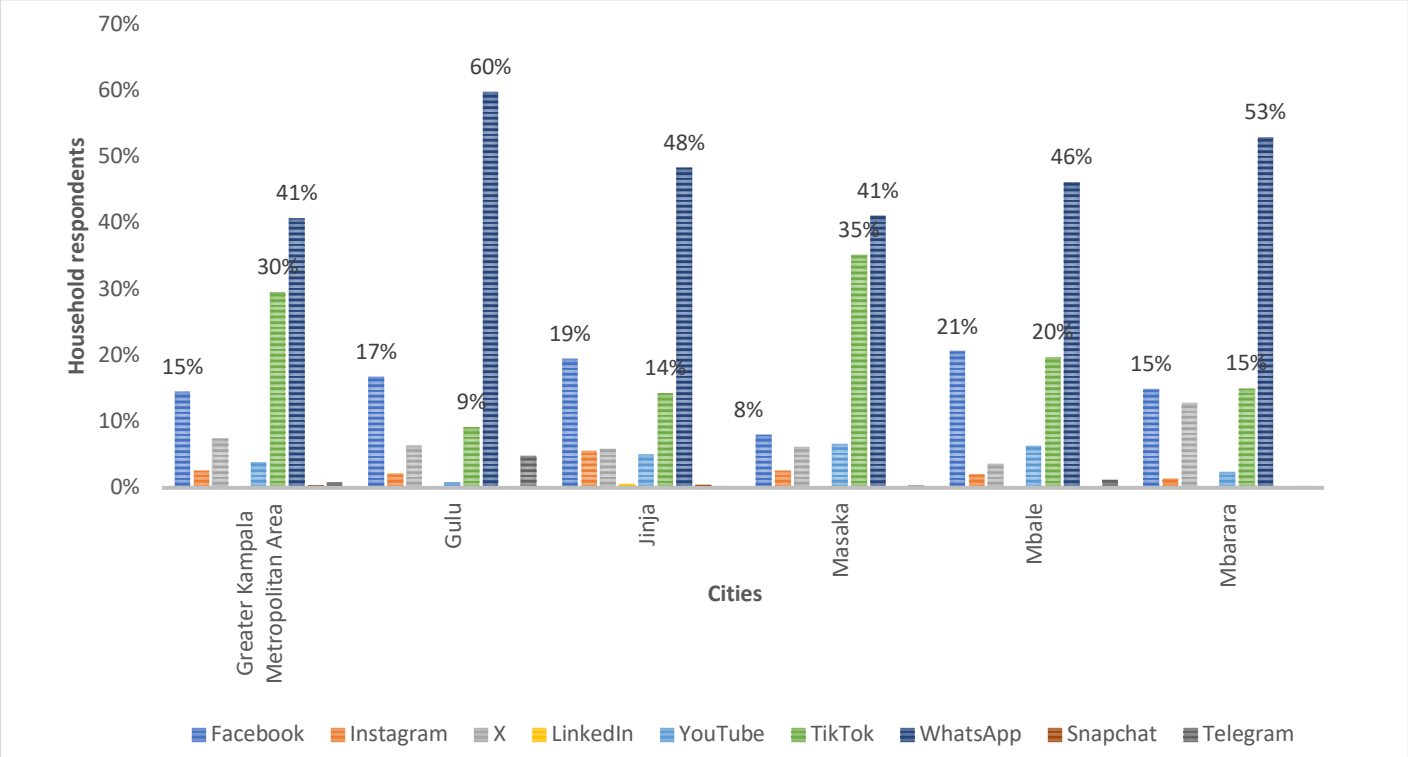


*Figure 60: Social media platforms used segmented by city*

Figure 60 shows that WhatsApp, is consistently the highest social media platform used across all cities, followed by TikTok and then, Facebook and X. This shows the wide acceptance and use of the different social media platforms across the cities.

*Inference:* Continuous engagement of the public is key to keep the momentum on transition towards clean cooking. The different social media platforms appeal to different groups of people. While WhatsApp is widely used by all segments of the population, TikTok and X appeal to the youth and corporates respectively. Moreover, high prevalence of smart phones as communication gadgets also provides an opportunity to share e-cooking messages countrywide using the same resources.

## 5.3 Mobile Application Downloads

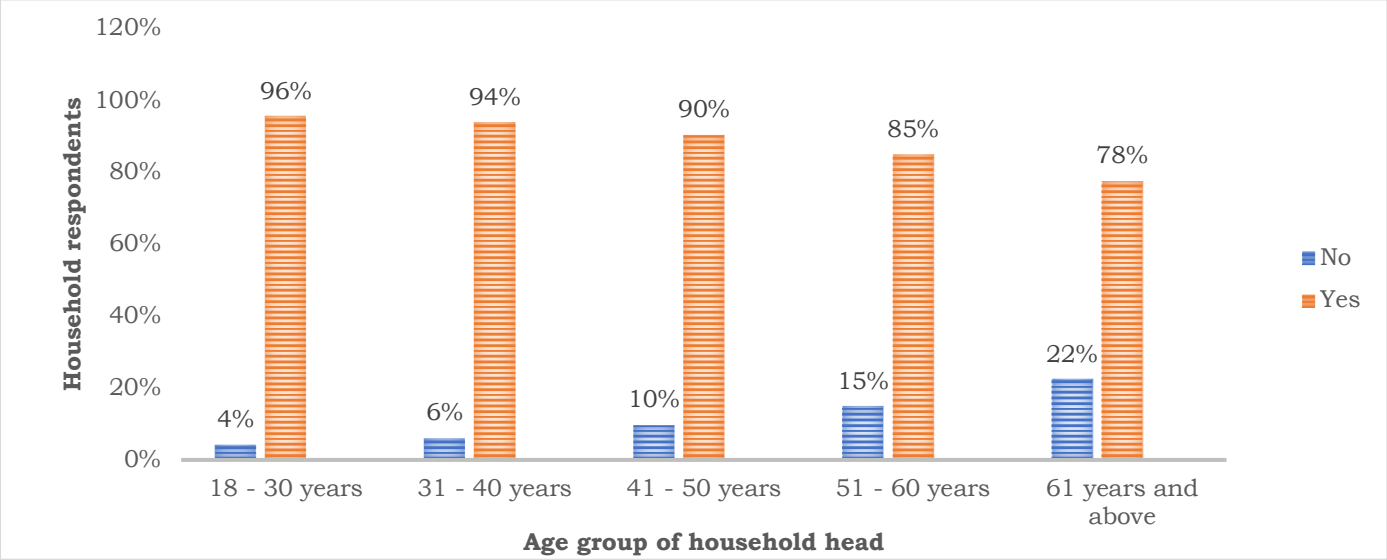


*Figure 61: Download mobile apps on the phone segmented by age group of household head*

Across all cities, downloading third-party mobile applications onto smartphones is a common practice in households. However, this practice is slightly less prevalent among household heads over 50 years old and those with only primary or no formal education (Figure 61 and Figure 62).

Respondents also showed strong interest in downloading a clean cooking mobile application, especially if it offers practical features such as helping users find reliable product sellers or nearby technicians for appliance repairs. In all cities except Mbale (see Figure 63), 90% of households expressed a willingness to download such an application. However, this willingness drops below 90% mainly among household heads over 50 years old (Figure 65) or those with limited formal education (Figure 64).

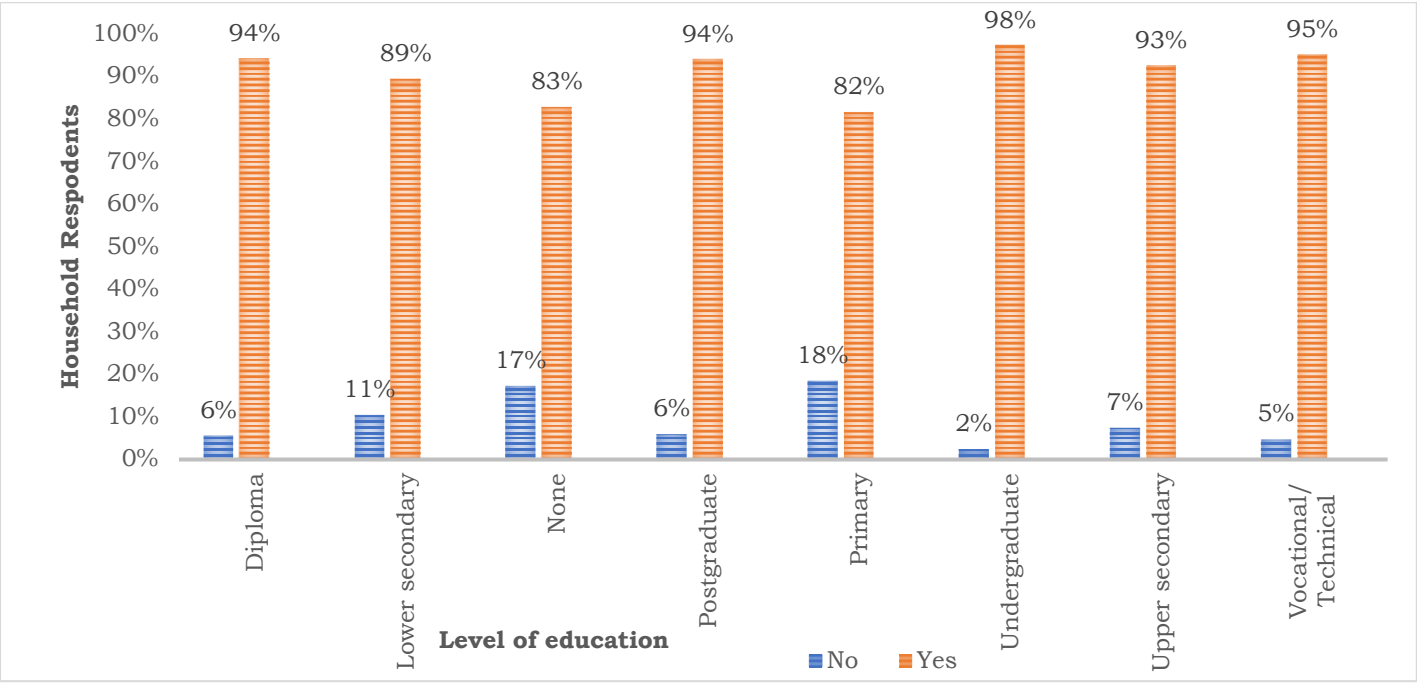


*Figure 62: Download mobile apps on the phone segmented by level of education*

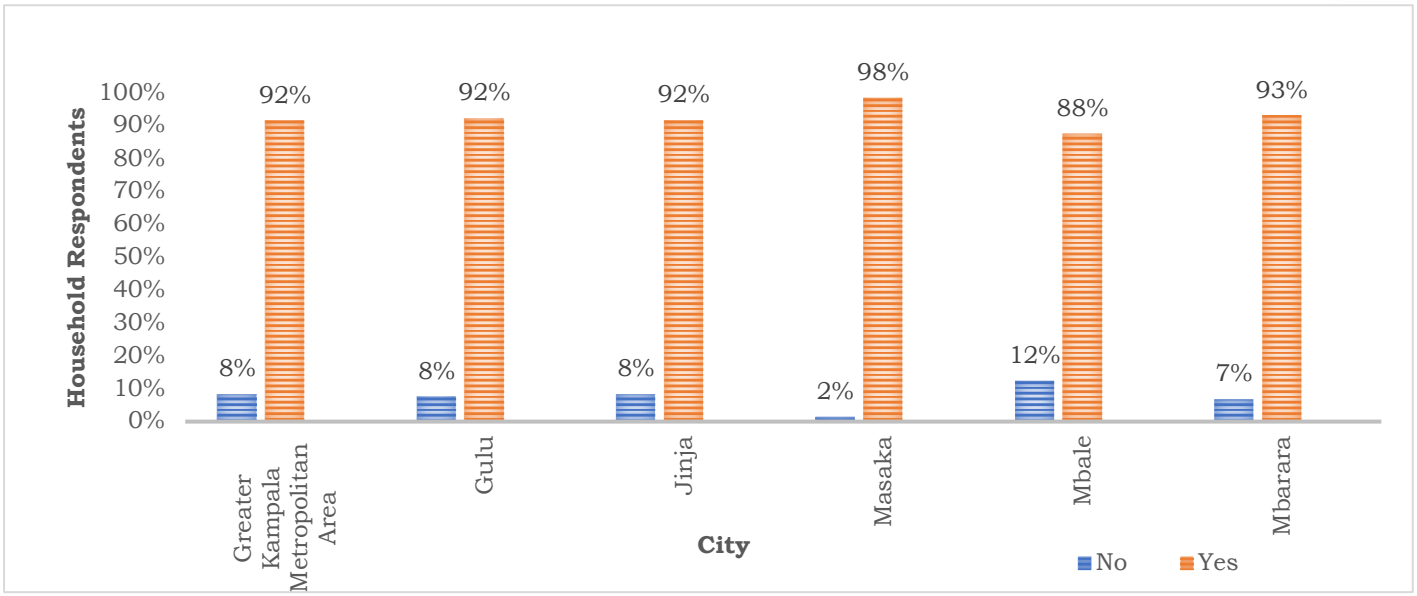


*Figure 63: Willingness to download clean cooking mobile app segmented by city*

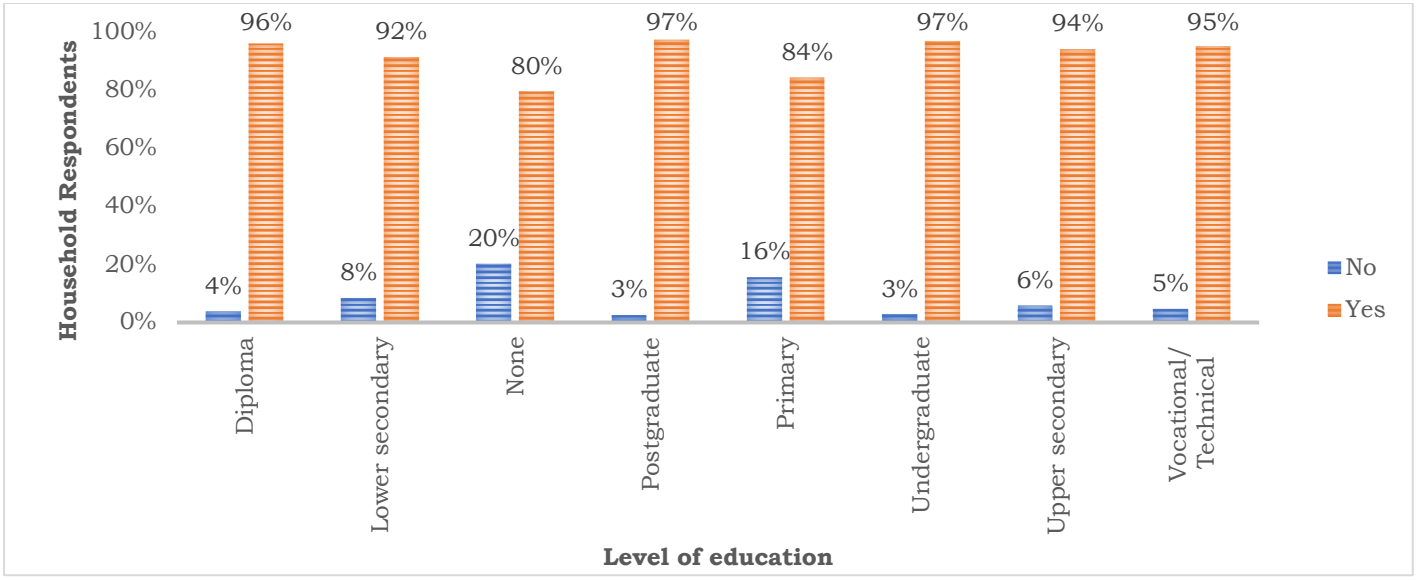


*Figure 64: Willingness to download clean cooking application segmented by level of education*

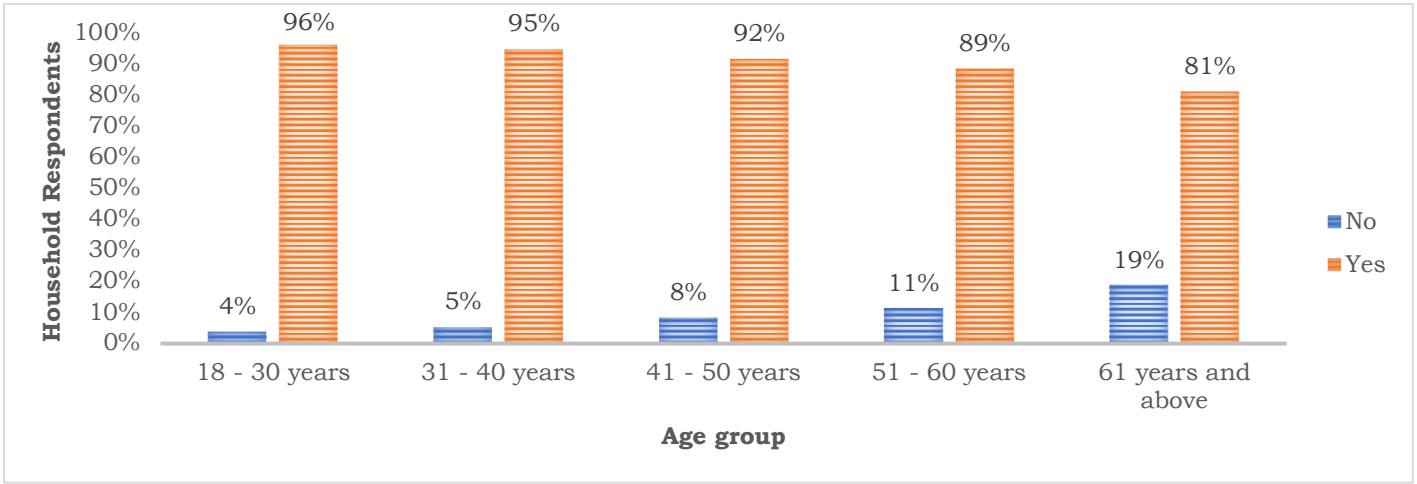


*Figure 65: Willingness to download clean cooking application segmented by age group*

*Inference:* These findings support efforts to develop a clean cooking mobile application. Simplified features that are easy to understand and use by all categories of people should be incorporated in the application to maximize appeal and ease usability especially among older persons.

Advancement in technology is a global trend, aimed at making service provision more efficient.

The willingness to download clean cooking apps, accompanied by some of the functions that the public would like the app to have, is a positive step. However, its success still requires stakeholder engagement of the key users of the app, including suppliers and consumers of clean cooking fuels and technologies, especially with regards to data provision.


# 6. RECOMMENDATIONS

# 6 RECOMMENDATIONS

Many lessons can be drawn from the findings of this study to inform actions of a diverse set of stakeholders. Some of these lessons have been stated in the body of this report. This section emphasizes the key lessons /recommendations that are necessary to implement a behavioural change campaign.

## 6.1 Target population segments

- **Women:** Women are the primary cooks, both in male- and female-led households, especially in households with traditional cooking methods. As such, messaging highlighting how e-cooking can save time and reduce physical labour should be designed targeting women. Additionally, testimonials from women who have successfully transitioned to e-cooking should be disseminated to the women.
- **Community leaders, eminent persons, and local influencers:** It is important to identity change agents who can advocate for e-cooking on a mass scale since seeing respected figures and public icons adopting the technology can help normalize its use.
- **All income groups** should be targeted by behavioural change messages
- **Community involvement**: Local communities should be allowed to participate actively in the awareness campaign to align e-cooking with cultural norms, thereby dispelling myths and misconceptions regarding perceptions such as food taste.
- **Age group:** Whereas behavioural change messages should be designed to reach all age groups, effective communication will call for segmentation of communication channels depending on the age of the population. For example, social media could be used to design messages for the younger population.
- **Integration of local languages:** Within a particular city, aside from English, awareness campaign messages should be implemented in at least one local and predominant language to cater for households whose decision makers, and/or cooks have low levels of education. These could be household heads, women or relatives and house helps who are involved with cooking.
- **Suppliers/distributors of electric cooking appliances:** In cities where suppliers of electric cooking appliances are already existing, there is need to ascertain and build their capacity to market e-cooking technologies through segmented communication, education, and sensitization of communities where they operate. In cities where suppliers are few or non-existent, external suppliers of e-cooking should be supported with segmented city profiles on current cooking behaviour, perceptions, preferences, willingness to pay and a value proposition report for e-cooking to help them identify entry points.

## 6.2 Key behavioural change messaging

- Focus on addressing negative perceptions on e-cooking; Awareness raising campaigns should incorporate messages that address perception barriers towards adoption of e-cooking. Messages around reparability; safety; energy savings;

perceived high costs; taste of food should be promoted. Furthermore, live cooking demonstrations or or workshops where people can try e-cooking appliances for themselves, ask questions, and receive personalized advice are key in breaking entry barriers.

- **E-cooking as part of the household cooking stack:** The fact that many households already practice stacking of cooking options/fuels provides an opportunity for a soft integration of electric cooking either as an additional cooking option or by replacing one of the existing options. In this way, households are given an opportunity to experiment with electric cooking, solaced that they have a safety net of the other cooking options in case challenges emerge.
- **Availability and accessibility of e-cooking appliances:** Awareness campaigns should integrate efforts to set up or expand distribution networks, ensuring accessibility. Messages should emphasize ongoing efforts to improve access and provide alternative channels, such as mobile distribution units or online marketplaces.
- **Perceived High Costs**: The baseline study report indicated that people perceived e-cooking appliances as too expensive. Awareness campaigns should be designed to emphasize both potential immediate and long-term cost savings from using efficient electric cooking appliances. The fact that the prices of most consumed primary fuel, especially charcoal, are already high and likely to continue increasing should also be emphasized.
- **End user financing models:** Awareness-raising campaigns should ensure that different financing options for electric cooking technologies are designed to meet the diverse abilities of potential customers. Cash, hire purchase, soft loans should be emphasized and promoted to ensure accessibility. Hire purchase options should be more actively promoted in Mbale and Jinja, where they are the preferred choice.

### 6.3 Channels for engagement

- **Television, radio, and social media** have been identified as the most common sources of information within households. In most cases, at least one of these communication channels exist within households in the different Cities. Therefore, **a blend of these channels should be used** to widely disseminate information about electric cooking.
- In addition to the above-mentioned channels, **physical engagements such as town hall-style meetings should also be conducted.** These are necessary to provide the target population with an opportunity to directly interact with the behavioural change team, ask questions and seek clarity regarding any open issues, and participate in live technology demonstrations. It will also provide an opportunity for rapport creation among the meeting participants who will then become electric cooking ambassadors and champions in their communities.

## APPENDIX: SAMPLE PHOTOS FROM THE BASELINE DATA COLLECTION EXERCISE

The following photos capture some of the interactions between interviewers and respondents during the BCCeC baseline data collection exercise. Notice an EPC and traditional biomass cookstove in the background of the fourth photo.

In the photo above, an interviewer is being shown an outside the house cooking area where traditional biomass is used for cooking.

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