

Assessing the impact of appliance subsidies on electric cooking usage in Nepal



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Abbreviations

ECO	-	Electric Cooking Outreach
EPC	-	Electric Pressure Cooker
HH	-	Household
KAPEG	-	Kathmandu Alternative Power and Energy Group
KM	-	Kilometre
LPG	-	Liquified Petroleum Gas
MECS	-	Modern Energy Cooking Services
NPR	-	Nepali Rupees
PEEDA	-	People, Energy and Environment Development Association



Executive Summary

PEEDA conducted this study to assess the impact of electric cooking (eCooking) appliance subsidies on the use of electricity for cooking and cooking practices. Understanding the impacts of subsidies is important for informing the design and sustainability of future eCooking interventions, particularly with significant forthcoming projects planned by the government and non-government entities. The study was carried out in Mahankal Rural Municipality (South Lalitpur district), an ideal site as it is one of the few locations in Nepal where both major subsidised and more market-based eCooking interventions have been carried out.

The study focussed on two groups of households (HHs) that had been beneficiaries of different eCooking subsidy schemes in 2021. Namely, 32 (of a total of 110) households which had received a 60% subsidy on the cost of an electric pressure cooker (EPCs) as part of a PEEDA pilot study funded by the MECS Electric Cooking Outreach (ECO) challenge fund, and 202 (of approximately a total 2000) households which had received free electric induction stoves through a government intervention. A survey and the MECS 'indicative cooking diaries method were used to compare the usage of eCooking appliances among the two groups in 2023, more than a year after the initial interventions.

The results show a much greater proportion of the ECO pilot study HHs (ECO HHs) which part-paid for an EPC are using their appliances compared to the non-ECO HHs which received induction cookstoves for free. 81% of the 27 ECO HHs with EPCs in working condition were using them compared with only 68% of the 200 non-ECO HHs with working induction stoves. A lack of compatible induction-ready cookware was by far the main reason for households not using the induction stoves, cited by 66% of non-ECO HHs. These findings indicate subsidy schemes which require beneficiaries to buy compatible cookware for induction stoves provided for free result in lower usage rates of the stoves. The amount households were willing to pay for eCooking appliances also appeared to be informed and influenced by the subsidised prices available in the community.

The ECO HHs also received household wiring upgrades, after-sales support, and training on the use of their EPCs as part of the pilot study, while recipients of the free induction stove did not. These support services also contributed to ECO HHs' greater usage of eCooking. 31% of non-ECO HHs said they were not using their induction stoves because they needed wiring upgrades and 22% reported they lacked the necessary skills to use the appliances. This compares unfavorably with the ECO HHs, where only 14% of HHs said they lacked the necessary skills to use their EPCs, and none reported needing wiring upgrades. Distribution of eCooking appliances without support services correlates with lower usage rates. These kinds of interventions are, therefore, not recommended.

Other parameters also showed that the ECO HHs were greater users of eCooking and more positive about eCooking than the non-ECO HHs (although these trends appear to have been influenced by various factors and may not be a consequence of subsidy design). The greater choice of appliances available to ECO HHs (who had both EPCs and induction stoves) compared with non-ECO HHs (who typically only had induction stoves) was a key factor behind the greater

usage. Electricity was the primary cooking fuel for ECO HHs, who cooked 45% of their dishes on electricity compared with 26% of dishes for non-ECO HHs. LPG use decreased with both groups after the introduction of eCookstoves, but noticeably more among ECO HHs where annual LPG consumption fell by 41.3% compared to 19.6% in non-ECO HHs. In addition, far more ECO-HHs (44%) than non-ECO HHs (9%) reported they had cooked meals entirely with electricity. Relatedly, 84% of ECO HHs expressed that they were willing to cook entirely with electricity, compared with only 37% of non-ECO HHs.

Perceptions and user experience were more positive among the ECO HHs. A greater proportion of the ECO HHs reported they liked various features of the EPC compared with the non-ECO HHs reporting on the induction stove. Noticeably, more ECO HHs than non-ECO HHs held positive opinions on the cost of eCooking and the taste of food cooked using electricity. In terms of dislikes, repair and maintenance were the main concerns reported by ECO HHs of the EPC, while the cost of cooking was the primary issue reported by non-ECO HHs of the induction stove. This may reflect how for most dishes, induction stoves are significantly more expensive to cook with than EPCs although still cheaper than LPG. Higher eCooking user satisfaction among ECO HHs was also indicated by 94% of ECO HHs reporting they had recommended the EPC to others in the community, whereas only 16% of the non-ECO HHs had recommended the induction stove. This satisfaction may have been a contributing factor behind a greater proportion of the ECO HHs reporting they had either bought new additional eCooking appliances or were interested in doing so following the 2021 interventions. Financial issues were the main reason among those in both groups who had not bought an additional appliance despite being interested in doing so.

In terms of recommendations for future eCooking interventions, the findings indicate that providing free induction stoves while requiring beneficiaries to buy compatible cookware results in lower usage rates. Bundling compatible quality utensils with induction stoves is therefore a recommended option, although it may not be beneficial to offer such bundles free of charge given the greater eCooking usage among the ECO HHs that part-paid for EPCs. To encourage sustained eCooking use, the main recommendation drawn from the study is the importance of providing complimentary support services such as training on appliance use, sensitisation on eCooking benefits, and provision of household electricity infrastructure upgrades (e.g. wiring) and local after sales services.

To unlock even greater eCooking usage, the findings strongly indicate that providing households with a greater choice of eCooking appliances is key to increasing use and achieving the Government of Nepal's goal of electricity being the primary cooking fuel for 25% of households by 2030. Financing also appears to be important for increasing eCooking usage given the study found the main reason for not buying an additional eCookstove were affordability issues. The results show that if subsidies are to be used, they need to be carefully designed to avoid some of the negative impacts seen in Mahankal. Greater access to financing mechanisms may also help address affordability concerns and enable more people to purchase eCooking appliances.

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1. Introduction

The Government of Nepal has heavily prioritized electric cooking (eCooking) and set ambitious access targets. Most prominent are Nepal's Nationally Determined Contributions (NDCs), which call for 25% of households to be using electricity as a primary cooking fuel by 2030. As such, many rural and urban municipalities have been planning and undertaking eCooking interventions, with major development agencies supporting initiatives often using different subsidy mechanisms.

Mahankal Rural Municipality in South Lalitpur district is one of the unique locations in Nepal, which has seen both major subsidised and more market-based eCooking interventions. People, Energy and Environment Development Association (PEEDA) along with partners Kathmandu, Power and Energy Group (KAPEG) and the University of Bristol as part of the Electric Cooking Outreach (ECO) implemented a part-subsidised/part market-based project in Mahankal Rural Municipality that ended back in December 2021, which saw 110 households pay for 40% of the costs of an electric pressure cooker (EPC). The project was commissioned by the Modern Energy Cooking Services (MECS) programme which is funded by UK Aid. Shortly after the PEEDA intervention, the nodal agency of the Government of Nepal for renewable energy, the Alternative Energy Promotion Center (AEPC) supported the Mahankal Municipal Government with a heavily subsidised intervention which provided electric induction cookstoves for free to all households (around 2000) in the same Mahankal Rural Municipality.

Following the two interventions, there were curiosities to understand the impact of these different subsidy types on eCooking usage by comparing the two different beneficiary groups. Understanding the effects of subsidies is important for informing the design and sustainability of future eCooking interventions, with significant projects planned by government and non-government entities. Thus, the timing is ideal for this study which focusses on assessing the impacts of different subsidy interventions on eCooking usage and cooking practices in Mahankal Rural Municipality in order to better understand opportunities and challenges for broader eCooking scale up in Nepal.

Study Site

The study was conducted in Mahankal Rural Municipality, South Lalitpur where the PEEDA ECO project and AEPC-Mahankal Municipal Government eCooking interventions had previously been implemented. The study site lies in Province no. 3, which takes roughly a day to reach from Kathmandu. As per the census 2021 (CBS, 2021), the total population of Mahankal Rural Municipality is 8,122; of which, 50.1% are male and 49.9 % are female. There are a total 1,939 households in the municipality with an average household size of 4.19 persons per household.

Aims and Objectives of the Study

This project seeks to support government policy to accelerate eCooking transitions by assessing the impact of subsidies on the use of eCooking appliances. The study had the following two objectives.

1. Assess the impact of subsidies on the usage of eCooking appliances in Mahankal Rural Municipality
2. Disseminate findings to ensuring research has longer-term and broader impact.

This study is one of two concurrent studies carried out by PEEDA in Mahankal, which together aim to inform the development of a sustainable eCooking ecosystem in Nepal. The other 'Developing local after-sales services to support a sustainable electric cooking ecosystem in Nepal' is also available on the MECS website (www.mecs.org.uk) and assesses eCooking repair and maintenance issues and their solutions, and the process of training local stakeholders to provide eCooking after sales services.

2. Methodology

The research study was carried out using the methodology shown in figure 1 and consisted of four main phases: preparatory, data collection, analysis and reporting, and dissemination.

Preparatory Phase

PEEDA prepared the field setup and conduct the necessary review of documents from previous phases. PEEDA also reviewed its own ECO study report, MECS market assessment report and other relevant eCooking publications and validated gaps during literature reviews with the survey of stakeholders.

Data collection

The main objective of the data collection was to monitor and compare the usage of eCooking appliances in Mahankal Rural Municipality among households that received induction stoves for free through government subsidies and those that (part) paid for EPCs as part of PEEDA's MECS ECO activities. A survey and indicative cooking diaries study was carried out with 32 (out of 110) ECO pilot study households and with 202 (of the 2000) households which received free induction stoves through the Municipal Government-AEPC supported intervention.

Developed by MECS, an indicative cooking diaries study is carried out in a single face to face visit, in which households are asked to generate a menu for two typical days describing dishes cooked and devices used. It is based on participants' recall and self-assessment rather than monitoring of actual events. A door-door visit approach was carried out, where households were interviewed using a survey and indicative cooking diaries form co-developed with MECS.

Analysis and Reporting

The fieldwork data was collated and analysed by PEEDA to prepare this final report. A first draft was submitted to MECS with feedback and suggestions incorporated into this final version.

Workshop

A workshop disseminating the findings of this study and the partner study on eCooking after sales services is scheduled to be held in the first half of 2024.

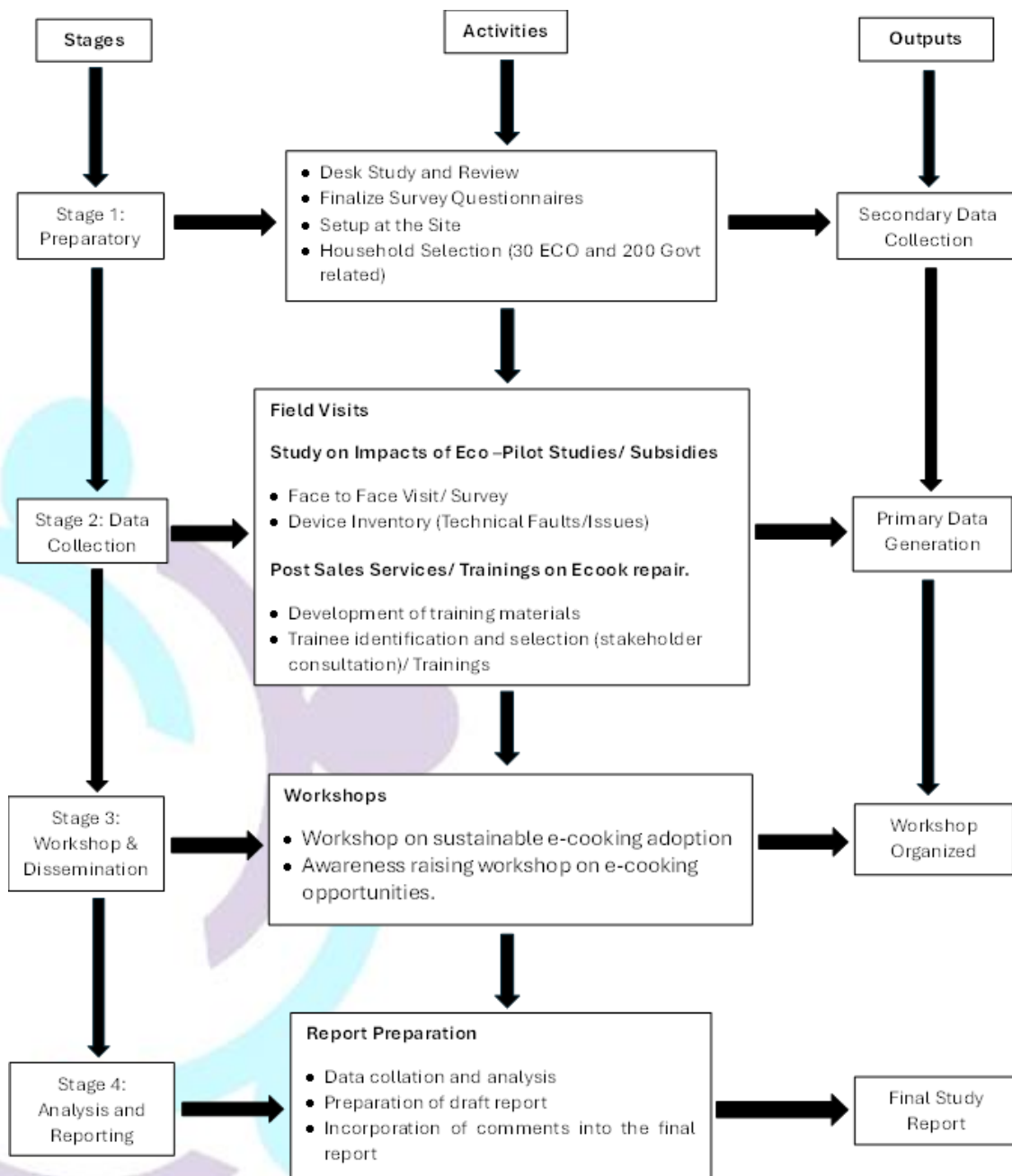


Figure 1: Study Methodology

3. Results and Discussion

Research objective 1. Assessing the impact of subsidies on use of eCooking appliances

Are the participants using the eCooking appliances provided? How much are they using them? Are participants fuel/appliance stacking? If yes, what do these stacks look like?

Figure 2 compares the working status of the EPCs which were part paid for by households in the ECO project ('ECO HHS') and the induction stoves which households received for free through government subsidies ('non ECO HHS'). On surveying 32 ECO participants, 84% had EPCs still in working condition while 16% had technical issues. Meanwhile, 99% of non-ECO participants had induction stoves in working condition, with only 1% having technical problems.

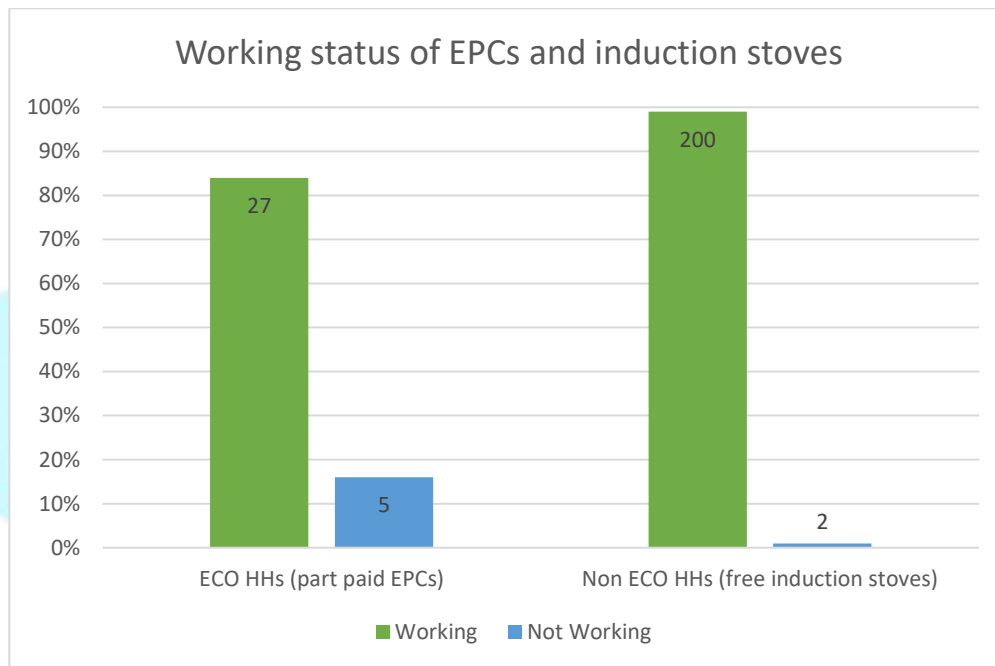


Figure 2: Comparison of the working status of EPCs in ECO HHS and induction stoves in non-ECO HHS

However, figure 3 shows that more of the ECO HHS with appliances in working condition were using them compared with the non-ECO HHS. 81% of the 27 ECO HHS with EPCs in working condition were using them compared with only 68% of the 200 non-ECO HHS with working induction stoves. The main reasons for ECO HHS not using their EPCs were unreliable electricity, technical problems, and the size of the EPC being bigger for the inhabited family size.

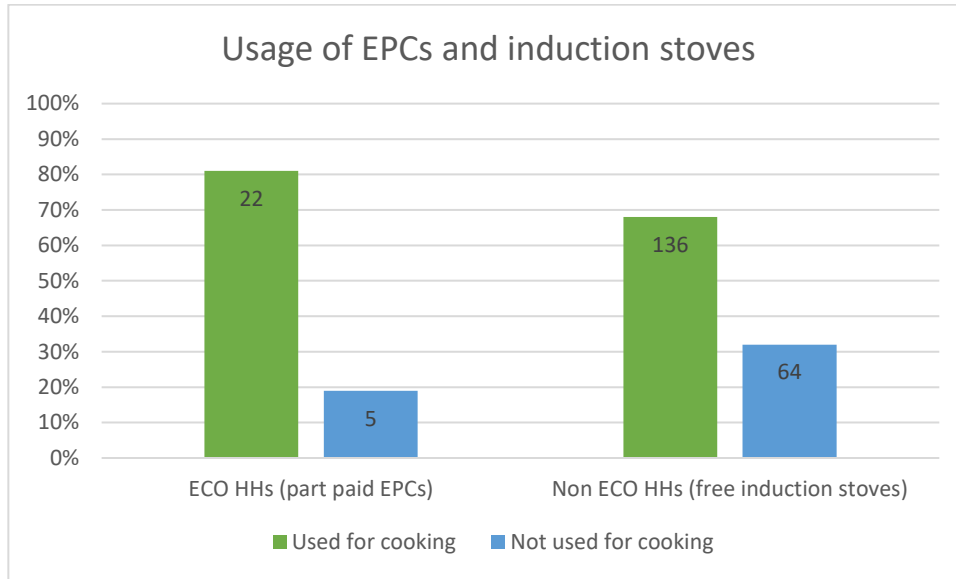


Figure 3: Comparison of ECO HHs using EPCs and non-ECO HHs using induction stoves

Being residents of Mahankal, the ECO HHs also received free induction stoves via the municipal government-AEPC initiative. 30 of the 32 surveyed HHs received induction stoves, while two declined as they reported being more comfortable with their existing eStoves, especially the EPC. Comparing the two groups, more non-ECO HHs (68%) used their free induction stoves compared with ECO HHs (53%) (Figure 4).

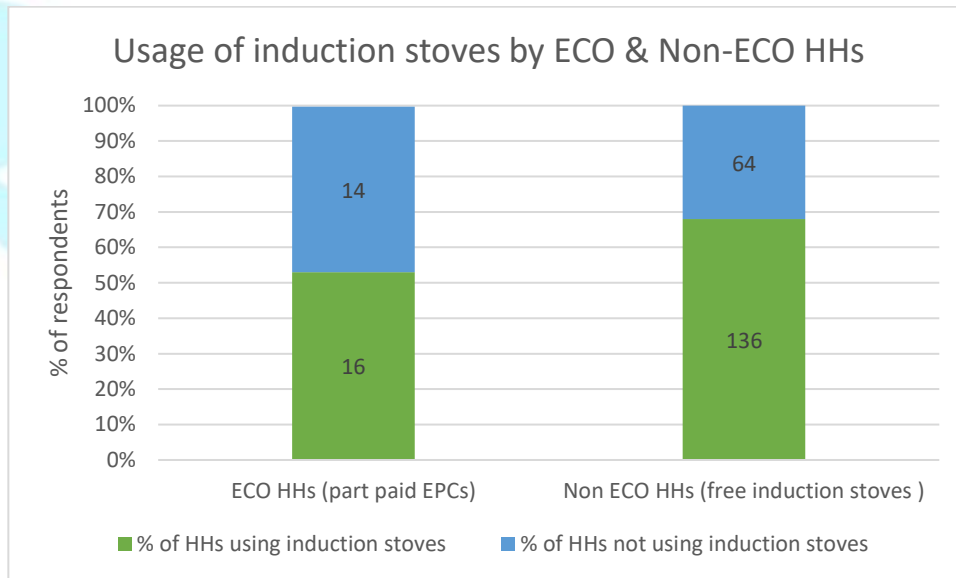


Figure 4: Comparison of the use of induction stoves by ECO and non-ECO participants

For both groups, lack of induction compatible utensils was by far the main reason for not using the induction stoves, cited by 57% of ECO HHs and 66% of non-ECO HHs (figure 5). This finding indicates that subsidy schemes which require beneficiaries to buy compatible cookware for induction stoves provided for free result in lower usage rates of the stoves. The other main reason for non-use of induction stoves – lack of necessary skills and need for household wiring upgrade affected non-ECO HHs far more than ECO HHs. 31% of non-

ECO HHs reported they lacked the necessary skills to use the induction stoves compared with 14% of ECO HHs, while 22% said they needed wiring upgrades whereas zero ECO HHs reported this. The awareness raising carried out by PEEDA during the ECO project helped train participants in the skills needed to use eCooking appliances and participants had no issues with house wiring after their household electricity infrastructure was upgraded as part of the pilot. The non-ECO HHs received neither training nor upgrades. These findings emphasise how sensitization and wider household infrastructure support is critical for successful eCooking distribution interventions.

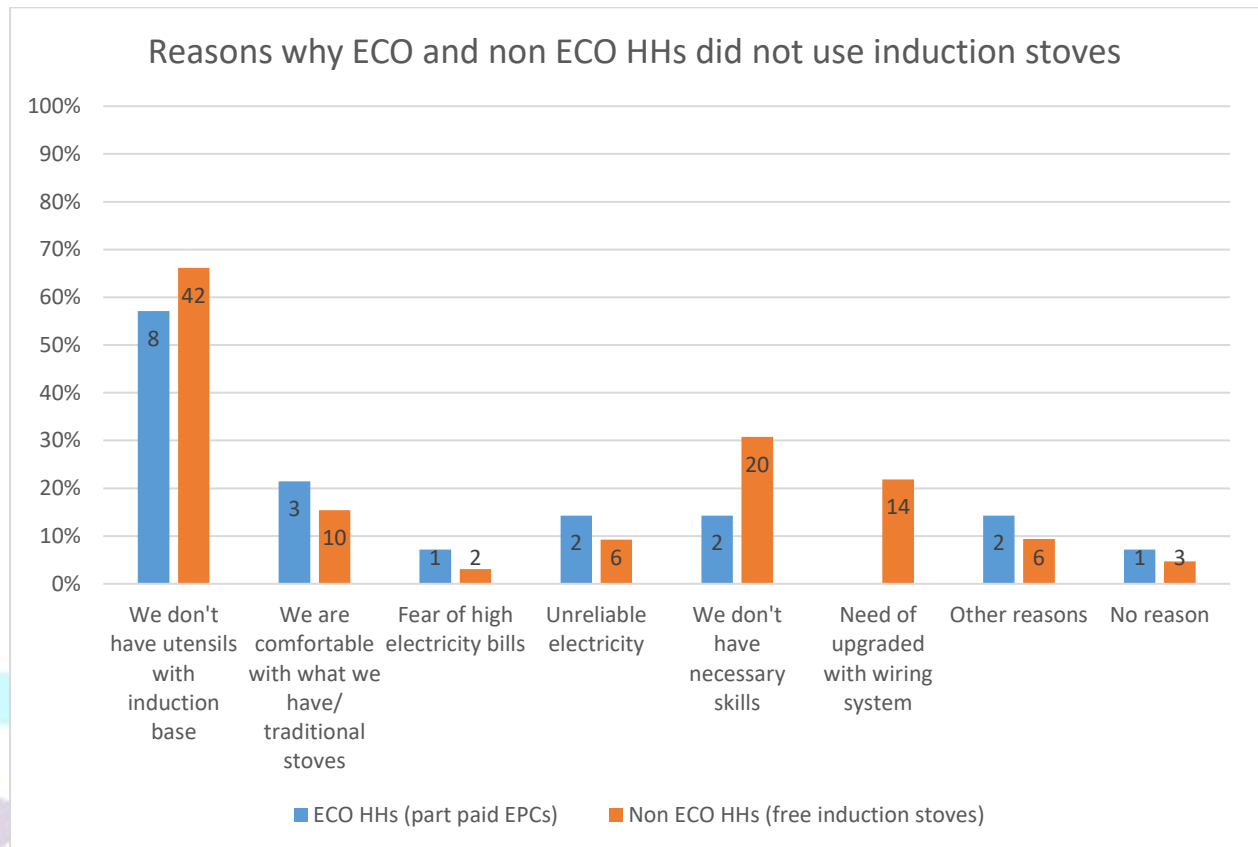


Figure 5: Comparison of the reasons why ECO and non-ECO HHs were not using the freely distributed induction stoves

Figure 6 shows the fuel stack of ECO and non-ECO participants which was determined using the indicative cooking diaries data. In terms of using electricity as a cooking fuel, the greater choice of appliances available to ECO HHs (including both EPCs and inductions stoves) has enabled electricity to be their primary cooking fuel, used for 45% of dishes cooked. In contrast, electricity covers only 26% of the fuel stack composition for the surveyed non-ECO HHs – most of whom were using only induction stoves. LPG usage by non-ECO HHs was 11% higher than by ECO HHs, while firewood use was 5% higher.

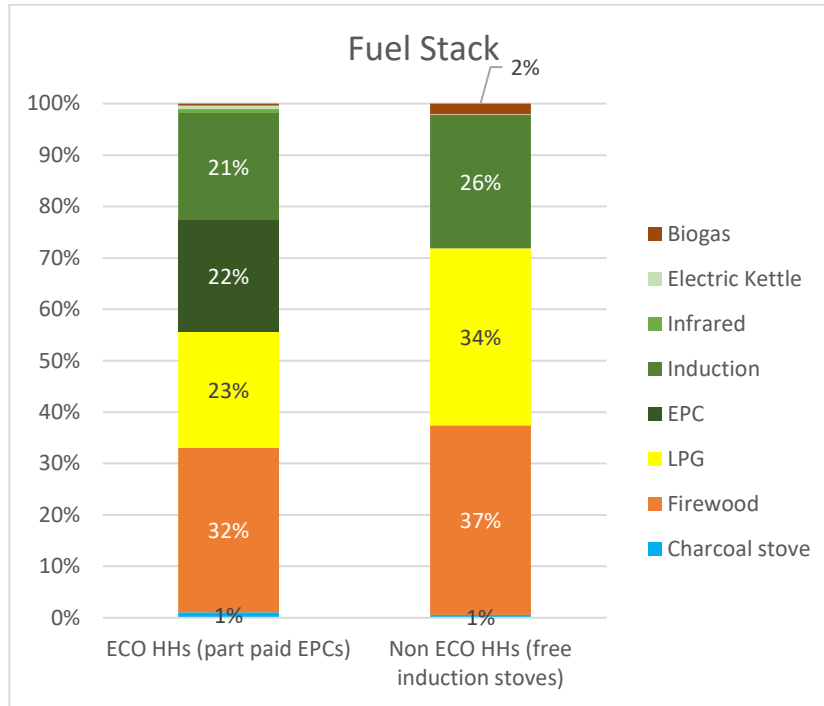


Figure 6: Proportion of dishes cooked on different fuels and appliances by ECO and non-ECO HHS

Figures 7 and 8 align with figure 6 and show ECO HHS cook a greater proportion of staple dishes with electricity than non-ECO HHS. Electricity was used to cook 60% of the ECO HH rice dishes and only 33% for non-ECO HHS. ECO HHS predominantly used the EPC for cooking rice, indicating the EPC is more favorable for cooking rice than induction stoves. Both groups mainly prepared hot beverages, milk, and tea in the induction stove. However, the preference to cook milk in electricity is nearly 15% higher in ECO HHS. Both groups didn't choose electricity to cook deedo and roti as they reported it was easier and tasted better with traditional firewood or LPG.

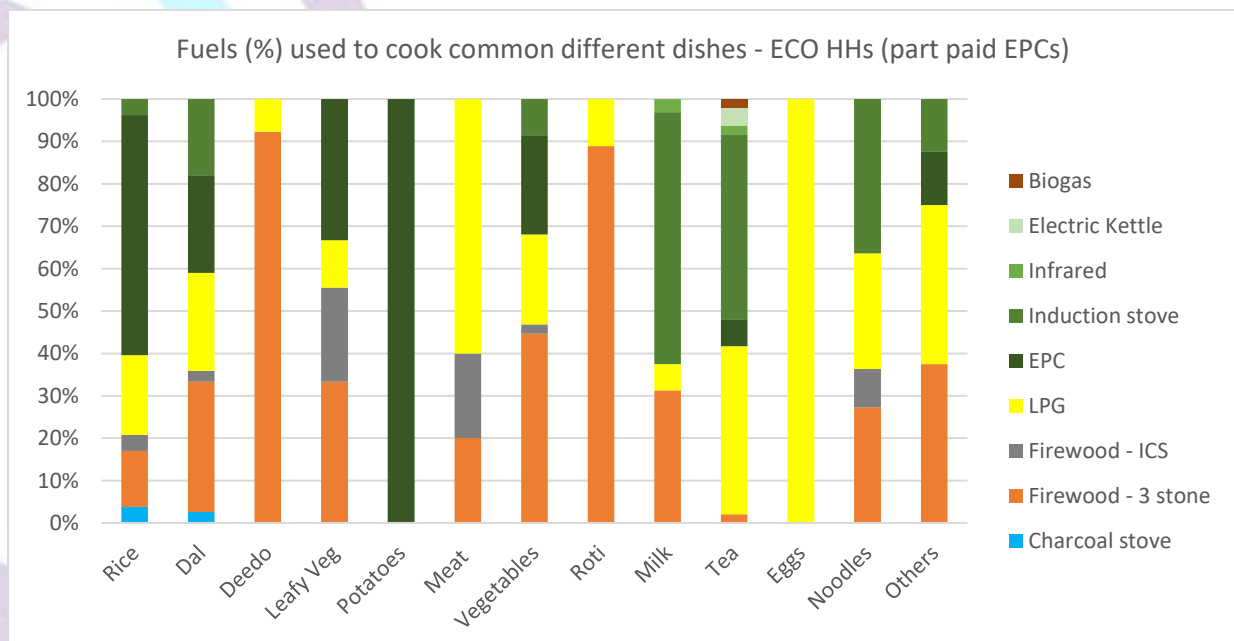


Figure 7: Fuel stack for common dishes prepared by ECO HHs

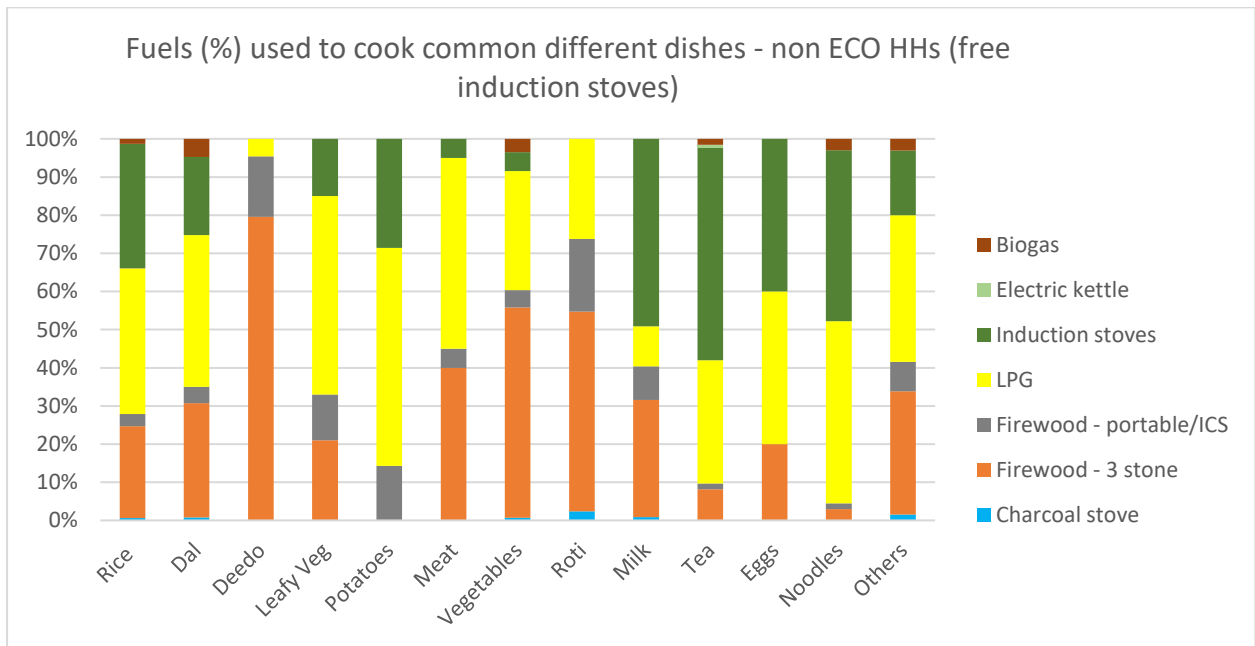


Figure 8: Fuel stack for common dishes prepared by non-ECO HHs

Have participant cooking practices changed since they received/part paid for eCooking appliances? How? Have perceptions of eCooking changed? how? Why?

Figure 9 highlights that ECO-HHs reported being far more willing to cook entirely with electricity than non-ECO HHs. 44% of ECO HHs had cooked a meal entirely with electricity, 35% more than non-ECO HHs. Relatedly, 84% of ECO HHs would like to cook entirely with electricity only, which is 47% higher than that of non-ECO HHs. These results may reflect the positive experiences ECO HHs have had using a choice of eCooking appliances and from receiving sensitization on the use of eCooking by PEEDA.

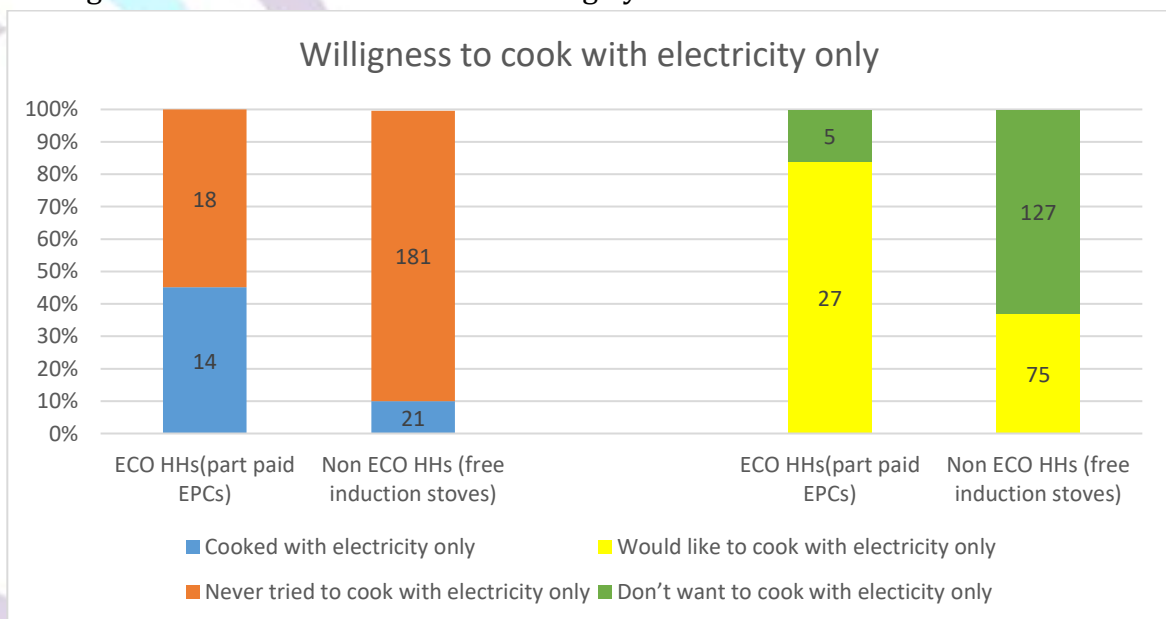


Figure 9: Willingness to cook with electricity only

Figure 10 shows the change in the consumption of LPG after the introduction of eCookstoves among ECO and non-ECO participants. Among both groups, LPG use decreased but noticeably more among ECO HHs. The annual consumption of LPG in ECO HHs reduced by 41.3% compared to 19.6% in non-ECO HHs. These results indicate greater eCooking use among ECO HHs, again likely due to having a greater choice of eCooking appliances and more sustained changes in cooking practices due to the ECO project awareness raising.

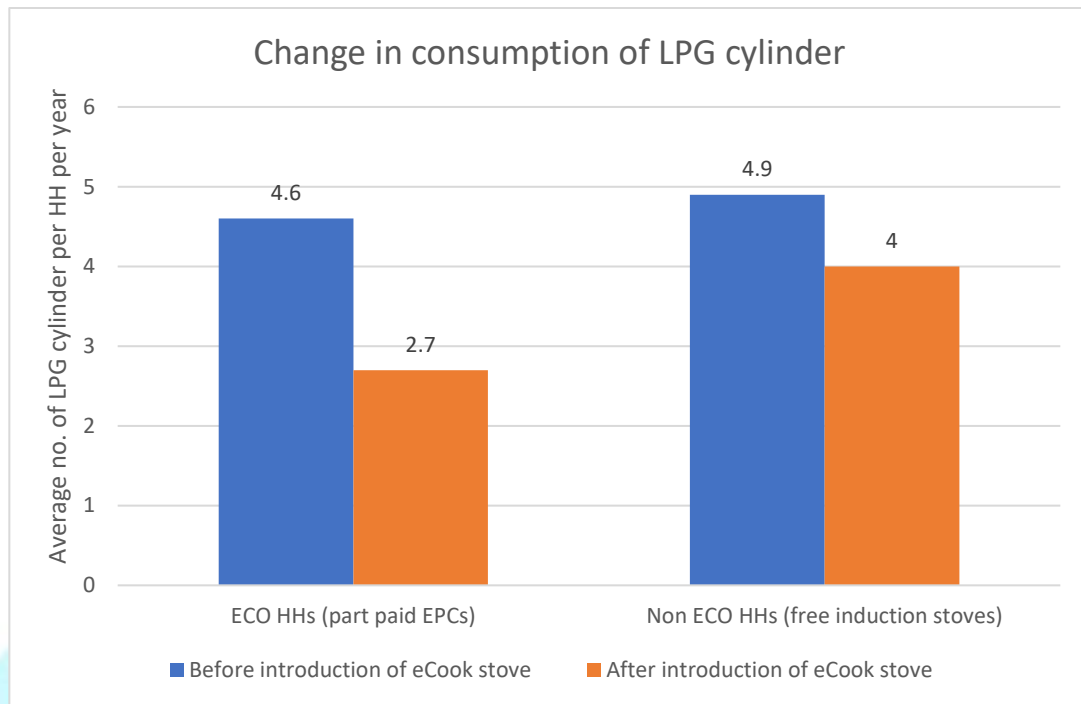


Figure 10: Average annual consumption before and after introduction of eStoves

Regarding likes and dislikes of cooking on electricity, figure 11 highlights that ECO HHs were generally far more positive about the EPC than the non-ECO HHs were about the induction stove. A greater proportion of the surveyed ECO HHs reported various aspects of eCooking, often by a margin of more than 20% compared with non-ECO HHs. This difference may reflect ECO HHs have gained more experience in eCooking from cooking more frequently with electricity. Smokeless kitchen, speed of cooking, ease of cooking, multi-tasking and more leisure time were the most liked features of eCooking, the latter three seem to reflect the convenience of the automation the EPC offers. For non-ECO HHs, speed of cooking and ease of cooking were the most liked eCooking features.

Figure 12 shows dislikes of cooking on electricity were reported by fewer ECO and non-ECO HHs compared to likes. The issue of repair and maintenance was the main dislike of ECO HHs, reported far more by respondents in this group than among non-ECO HHs. This may reflect greater use of the EPC by ECO HHs, and the better reliability record of the induction stove distributed in Mahankal as indicated by figure 2. In contrast, nearly 15% more non-ECO HHs disliked the cost of cooking compared with ECO HHs, reflecting that induction stoves are generally significantly more expensive to cook with than EPCs due to factors such as higher power consumption and lack of insulation.

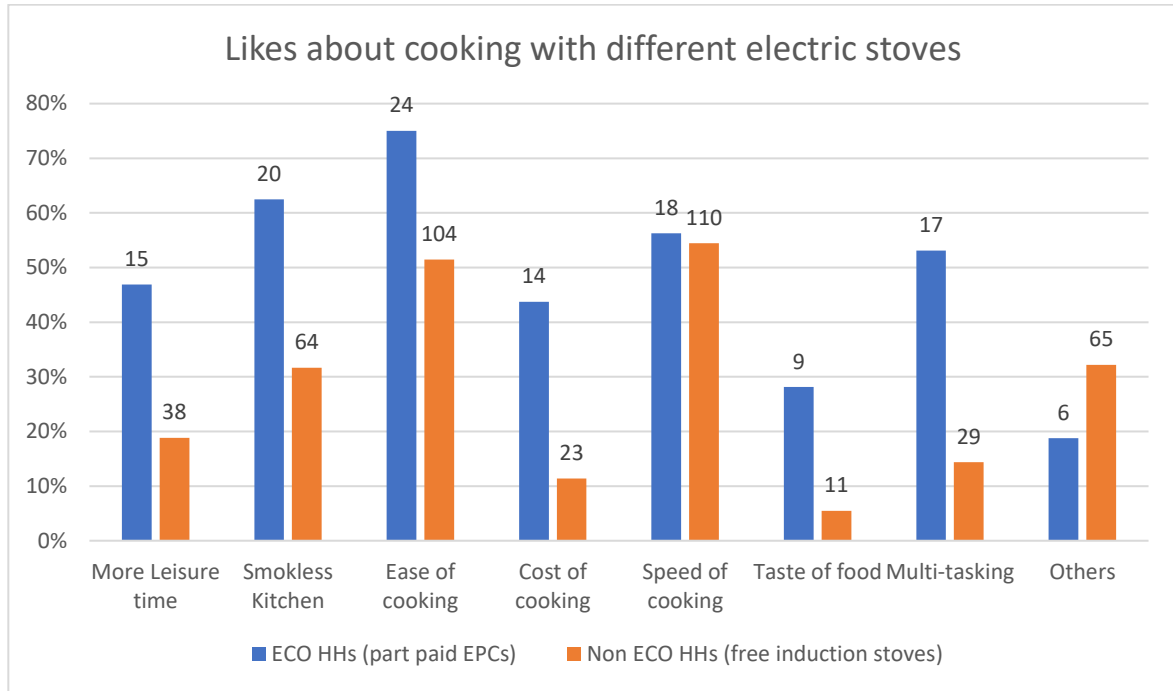


Figure 11: Comparison of likes about cooking with supported eCooking appliances

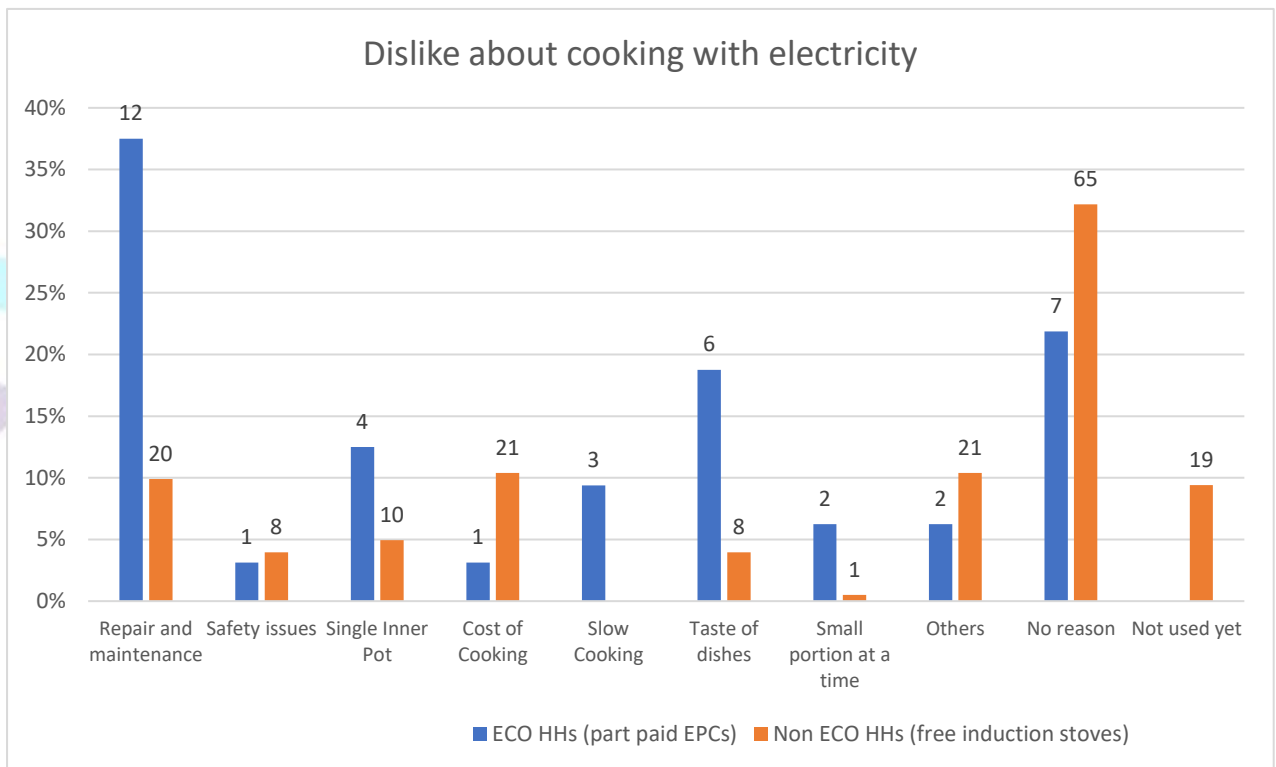


Figure 12: Comparison of dislikes about cooking with supported eCooking appliances

Figure 13 and 14 shows the perceptions of eCooking between ECO and non-ECO participants. On comparing both groups, ECO HHs are more positive on cost of cooking and taste of cooking with electricity than non-ECO HHs. Meanwhile, there is a much greater proportion of non-ECO participants reporting 'neither agree/disagree' to each statement

which may partly be explained by the large number of non-ECO HHs (36%) who haven't used their induction stoves yet.

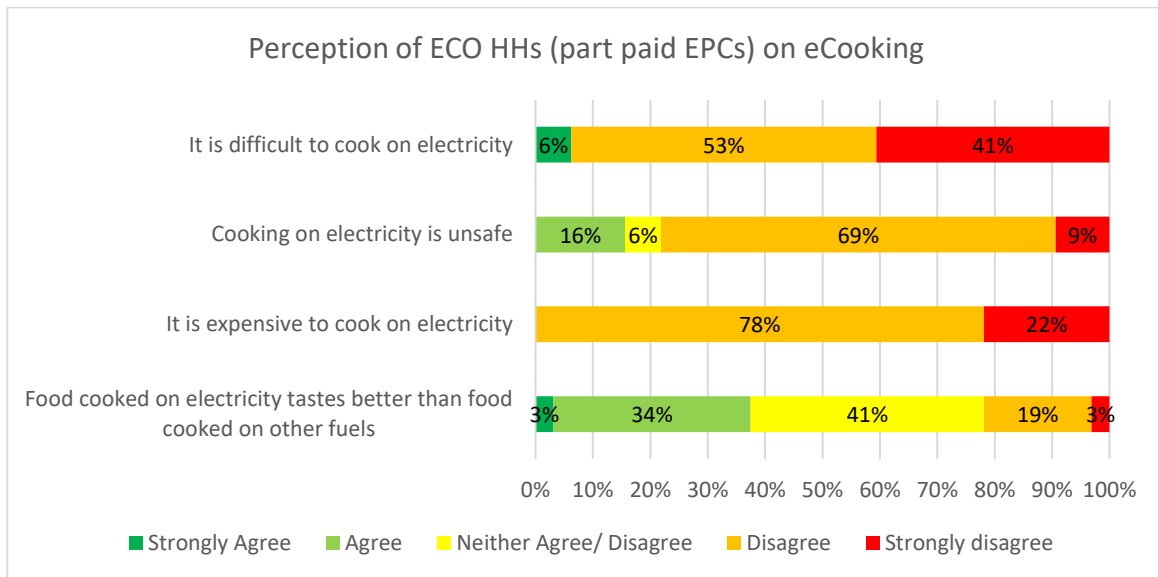


Figure 13: Perception of ECO HHs on cooking with electricity

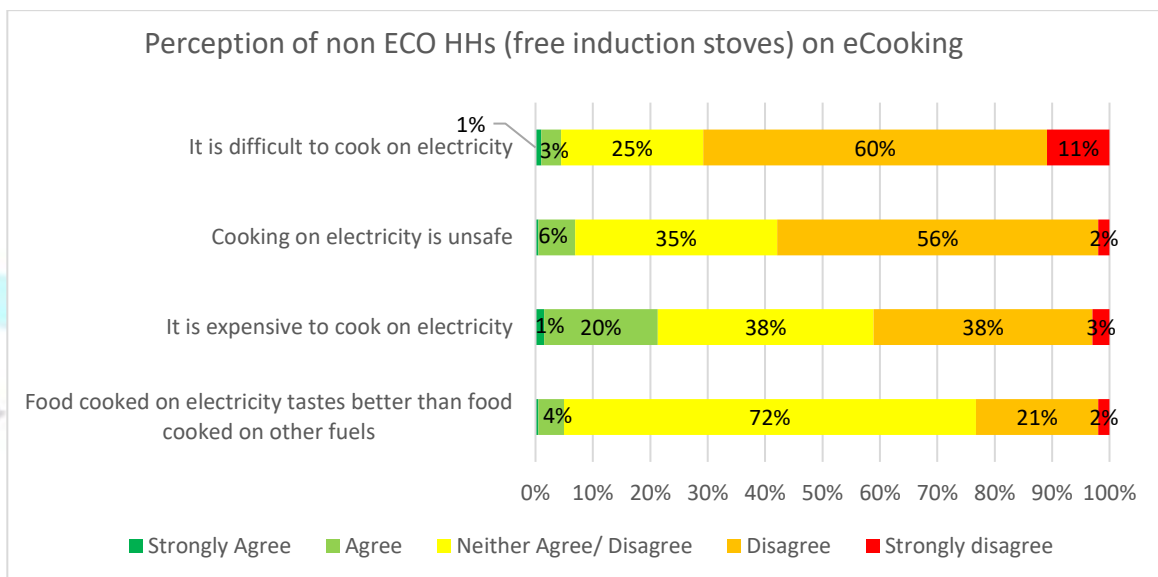


Figure 14: Perception of non-ECO HHs on cooking with electricity

Figure 15 and 16 highlight the perceptions of ECO and non-ECO HHs on a series of statements concerning what would influence their decision to purchase an eCooking appliance. The findings are inconclusive and it is difficult to discern any notable trends. ECO HHs tended to be more influenced by negative evaluations, opinions of people within the community and their own judgements than non-ECO HHs. Non-ECO HHs tended to be more likely to respond neither agree nor disagree, possibly indicating greater uncertainty about the subject matter or the questions themselves.

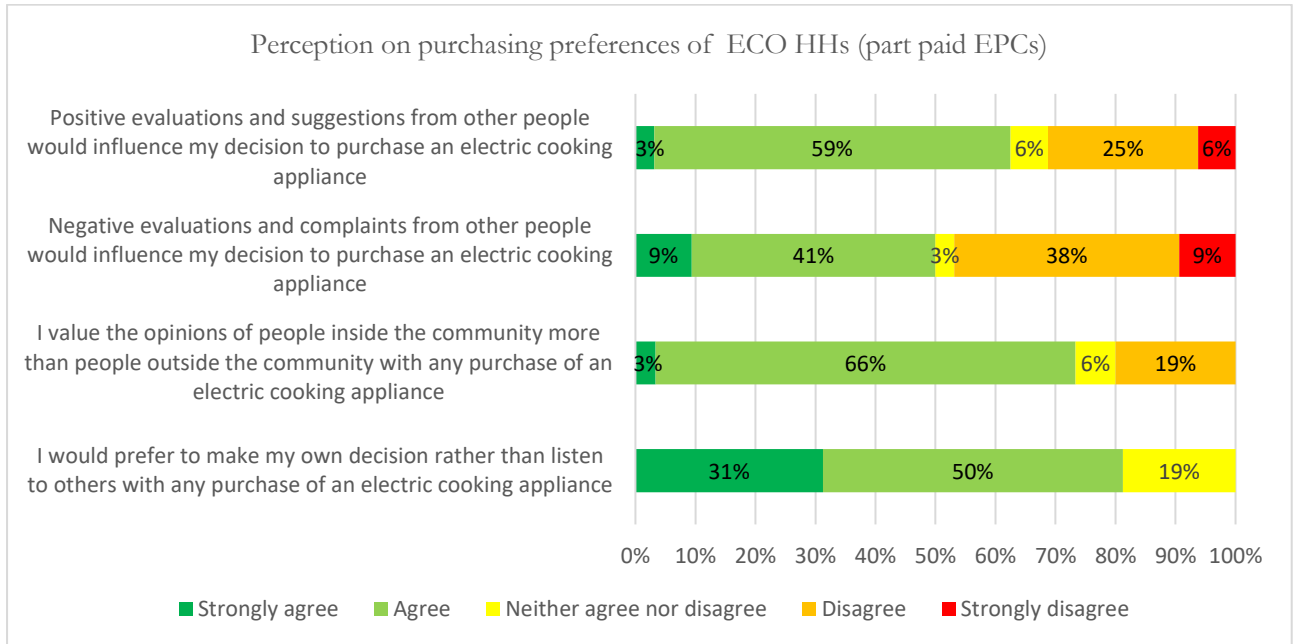


Figure 15: Perception of ECO HHs on the statements influencing the purchase of eCooking stoves

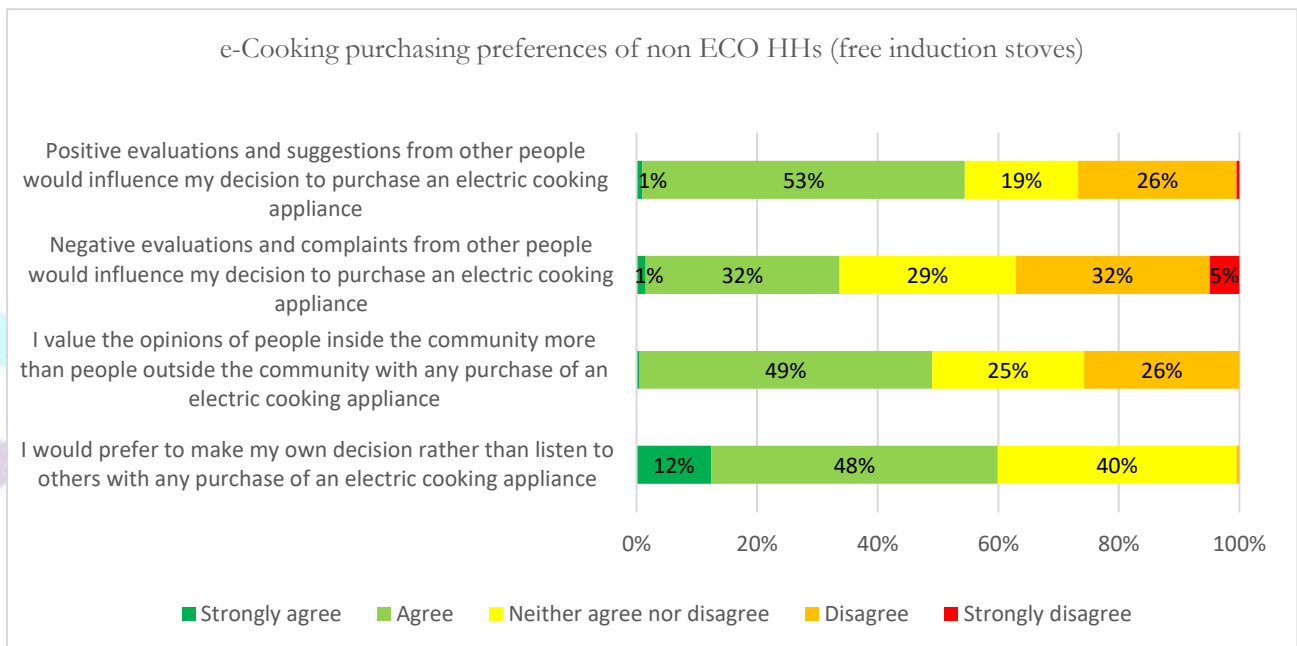


Figure 16: Perception of non-ECO HHs on the statements influencing the purchase of eCooking stoves

Figure 17 shows that 94% of ECO HHs have recommended the EPC to others, whereas only 16% of the non-ECO HHs have recommended induction stoves. The findings suggest that ECO HHs seem to be more comfortable and confident with the eStove they have received, resulting in the far greater number of recommendations.

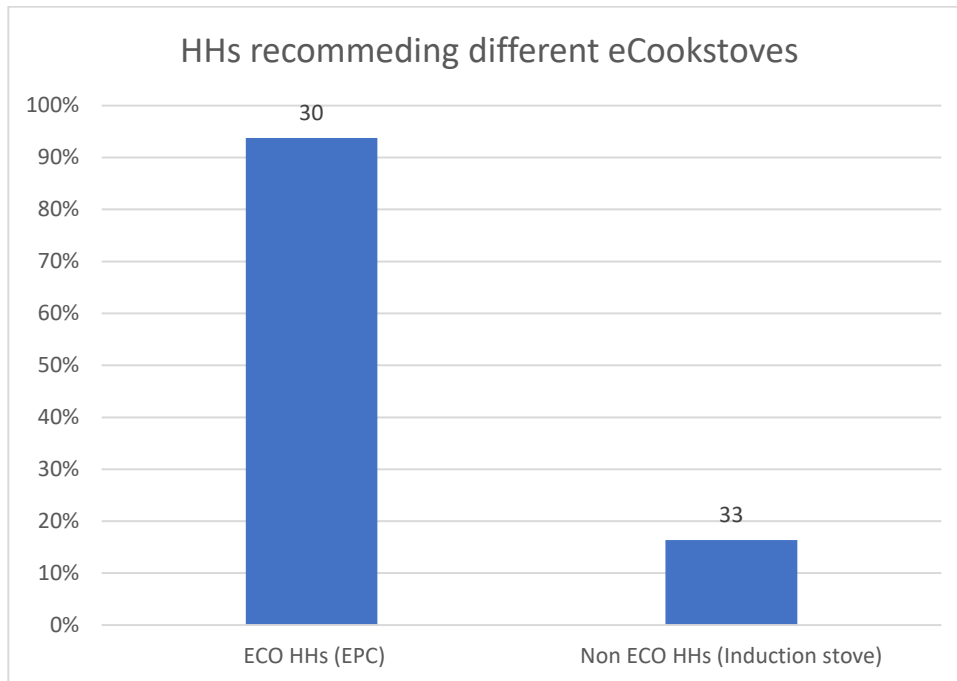


Figure 17: Comparison of ECO HHs and non-ECO HHs recommending different eCookstoves

Have participants bought an additional cooking appliance (electric or non-electric) or expressed an interest to do so? What are the opportunities and challenges behind purchasing an additional cooking appliance device?

Figures 18 and 19 show that after the eCooking interventions, a greater proportion of ECO HHs either bought new additional eCooking appliances or expressed an interest to do so. 16% of the sample ECO HHs purchased new eCooking stoves, including the infrared, induction, rice cooker and electric kettle. In contrast, only 1% of non-ECO HHs added an additional eCooking appliance – in both cases, an electric kettle.

9 ECO HHs (28%) and 47 non-ECO HHs (23%) reported being interested to buy an additional eCookstove. From the ECO HHs, six of the nine HHs wanted to add an electric kettle and three to add an extra EPC in their Kitchen. Rice cookers (16 of 47 HHs) and kettles (14 of 47 HHs) were of most interest to the non-ECO HHs. The higher % of ECO HHs willing to add additional stoves may reflect they are more familiar with and better adapted towards eCooking.

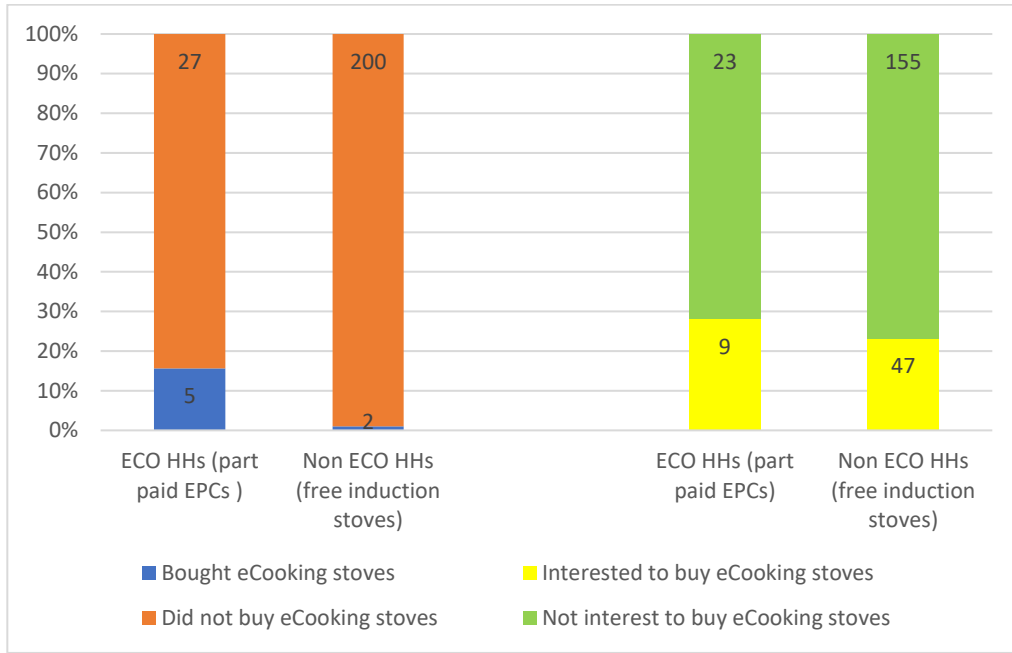


Figure 18: Proportion of HHs either buying new additional eCooking appliances or expressing an interest to do so.

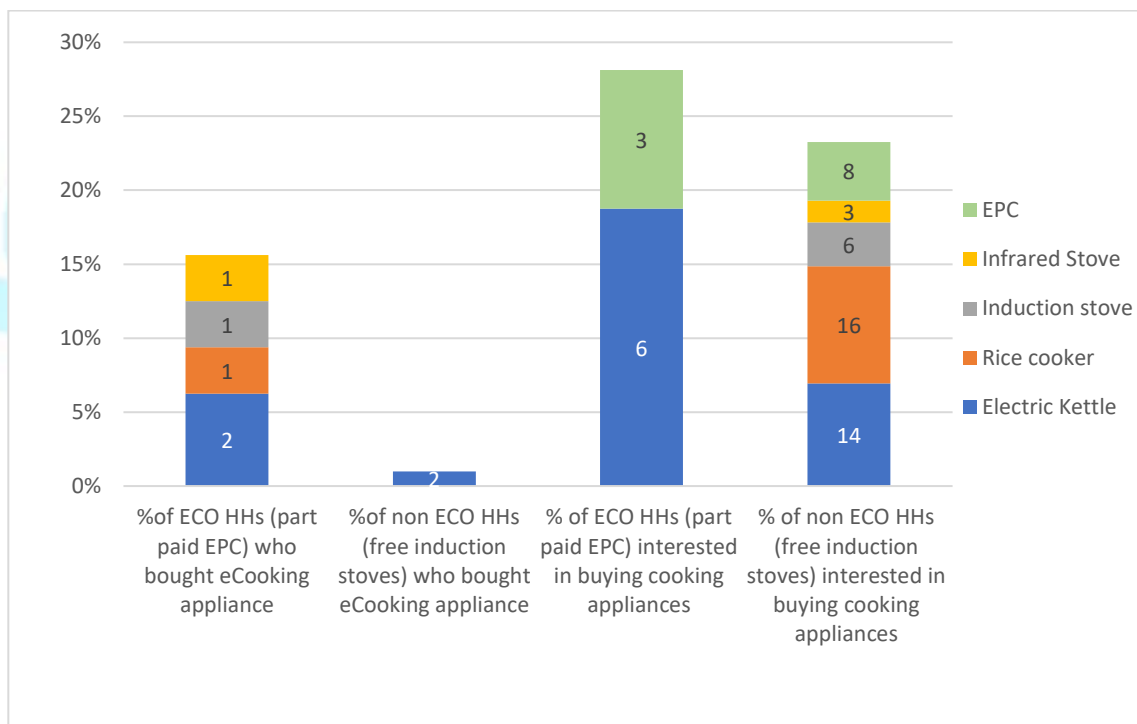


Figure 19: Types of eCooking appliances added or interested to add in future

The ease of cooking with eStoves was by far the main reason behind 89% of ECO and 60% of non-ECO participants being interested in buying an additional appliance (figure 20). Having multiple cooking options was the second most common reason, 22% of ECO HHs and 47% citing this as a reason. Further, non-ECO HHs found that eCooking maintains a smokeless kitchen and is also cost efficient, making them interested in adding up.

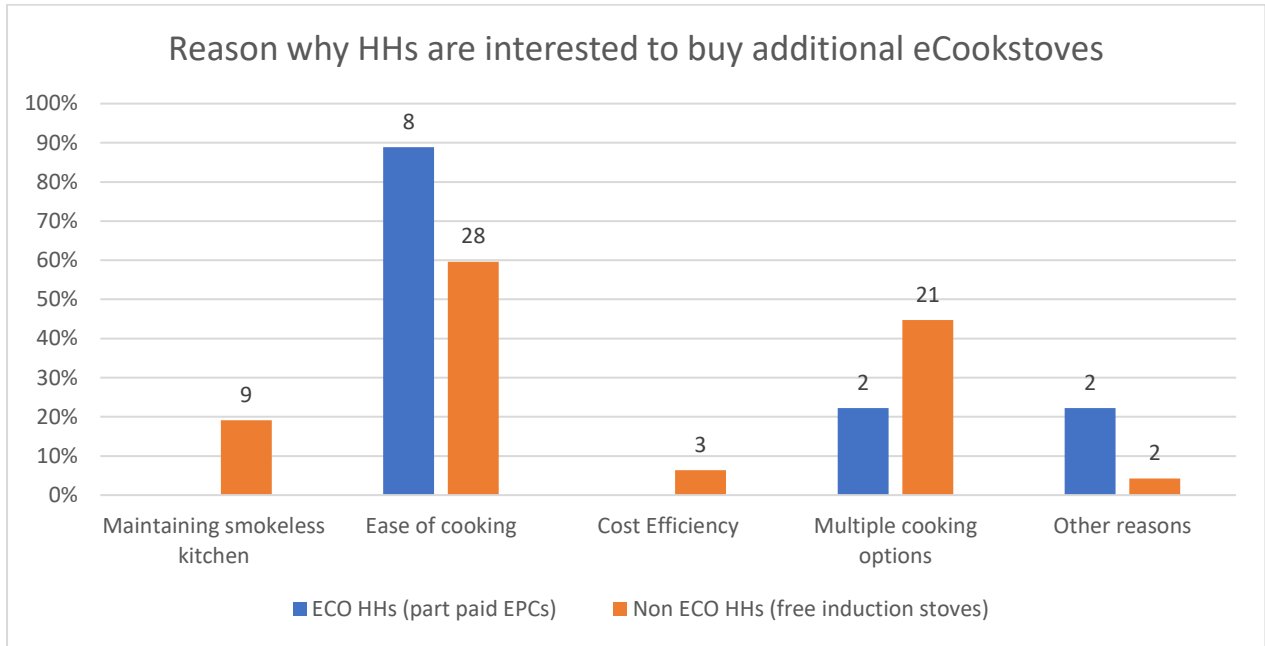


Figure 20: Reasons which made HHs interested to buy additional eCookstoves

Financial issues were the main reason for not buying an additional eCooking appliance despite being interested to do so. This reason was reported by 44% of ECO and 60% of non-ECO HHs (Figure 21). 33% of ECO HHs and 21% of non-ECO felt an additional purchase was non-essential, with ECO HHs this may be because they already had both an EPC and an induction stove and so there was not the urgency to buy another device. The unavailability of eStoves in the nearby market was also cited as a reason by four ECO HHs (44%) and eight non-ECO HHs (17%). In both cases, the number of HHs is similar to the number of HHs interested to buy an EPC in figure 19 and so may reflect supply chain issues with this relatively new appliance on the Nepali market.

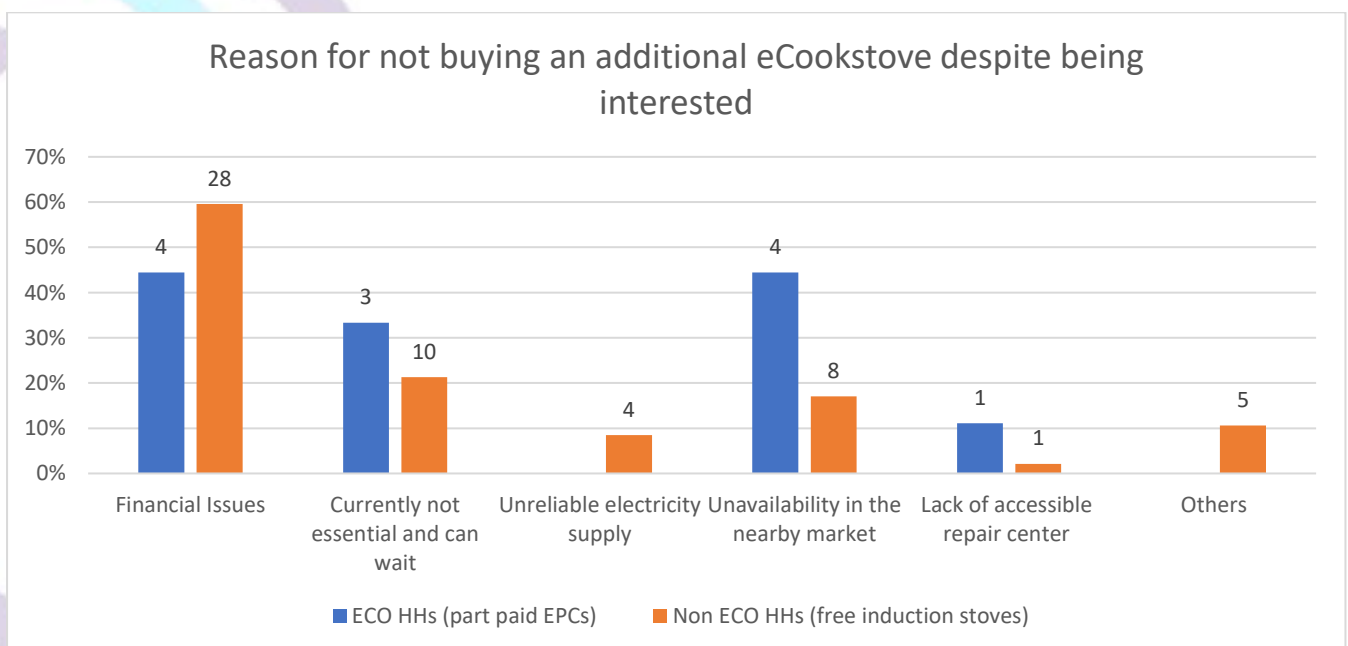


Figure 21: Reasons for not buying an additional eCookstove despite interest

Figure 22 elaborates on Figure 18 and why 23 ECO HHs (72%) and 155 non-ECO HHs (77%) households were not interested in buying an additional eCookstove. The main reason reported by both groups was that they were comfortable with their existing electric and non-electric stoves, cited by 44% of ECO HHs and 59% of non-ECO HHs. The usage data from ECO HHs suggests that having an EPC and an induction stove may be sufficient for many households. Over 30% of HHs from both groups gave no reasons for their lack of interest. Some non-ECO HHs (12%) cited financial issues although interestingly no ECO HHs did.

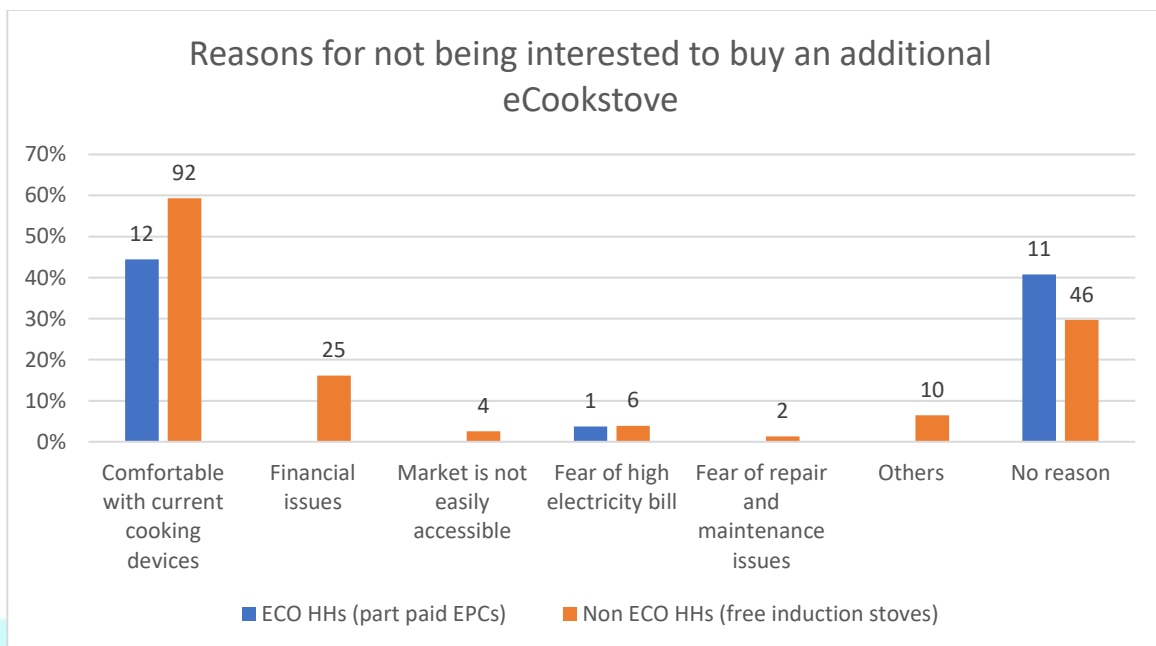


Figure 22: Graph showing reasons why households were not interested in buying an additional eCookstove

Table 1 indicates that the different levels of subsidy provided by the two interventions appeared to influence how much households from both groups were willing to pay for the eCooking appliances they had received. For the ECO HHs, the most common answer (reported by 34% of respondents) was NPR 3001-4001, which is almost the cost of the EPC after the subsidises provided by PEEDA, indicating the amount they are willing to pay was informed or influenced by the subsidy. 50% of ECO HHs wished to pay less than the subsidised amount and only 9% were willing to pay slightly more. None reported being willing to pay the market price.

For the non-ECO HHs, the most common answer reported by 37% of respondents was ‘no idea/did not respond’, which may indicate that providing appliances for free has resulted in beneficiaries lacking awareness of the cost. In Nepal, induction stoves can be purchased for around NPR 4000¹ and 16% of respondents indicated they were willing to pay close to

¹ The market price of an induction stove and compatible cookware bundle is approximately double that of an induction stove alone.

this amount. The remainder wished to pay less than this market price, with 13% of respondents indicating they wished to receive the appliance for no-cost, which may be an expectation resulting from the free distribution of induction stoves under the Municipal Government-AEPC intervention. In contrast, only 3% of ECO HHs stated they were unwilling to pay any amount, suggesting partial subsidies may be more effective for increasing willingness to pay a certain amount.

Table 1: Willingness of ECO HHs to pay for EPCs and non-ECO HHs to pay for induction stoves

	ECO HHs	Non-ECO HHs
NPR 0	3%	13%
NPR 1-1000	0%	2%
NPR 1001-2000	22%	11%
NPR 2001-3000	25%	22%
NPR 3001-4000	34%	9%
NPR 4001-5000	9%	5%
NPR 5001 and above	0%	0%
No idea/ did not respond	6%	37%

4. Conclusions

- More ECO pilot study HHs (ECO HHs) which part-paid for an EPC are using their appliances compared to the non-ECO HHs which received induction cookstoves for free.
- A lack of compatible induction ready cookware was by far the main reason for households not using the inductions stoves, cited by 66% of non-ECO HHs. These findings indicate subsidy schemes which require beneficiaries to buy compatible cookware for induction stoves provided for free result in lower usage rates of the stoves
- The amount households were willing to pay for eCooking appliances appeared to be informed and influenced by the subsidised prices available in the community.
- Participants tend to use the stoves more if the distribution is preceded by technology demonstration, hands-on training. wiring upgrades, after sales support. Distribution of eCooking appliances without support services correlates with lower usage rates. These kinds of interventions are therefore not recommended.
- ECO HHs were greater users of eCooking. The greater choice of appliances available to ECO HHs (who had both EPCs and inductions stoves) compared with non-ECO HHs (who typically only had induction stoves) was a key factor behind the greater usage, enabling ECO HHs to use electricity as a primary cooking fuel.
- ECO HHs held more positive perceptions about eCooking than the non-ECO HHs (although these trends appear to have been influenced by various factors and may not be a consequence of subsidy design). 94% of ECO HHs reporting they had

recommended the EPC to others in the community, whereas only 16% of the non-ECO HHs had recommended the induction stove.

- More ECO HHs reported they had either bought a new additional eCooking appliances or were interested to do so following the 2021 interventions. Financial issues were the main reason among those in both groups who had not bought an additional appliance despite being interested to do so.

5. Recommendations

The following recommendations were drawn from the findings with the aim of unlocking opportunities for broader adoption and use of electric cooking in Nepal.

- **Smart subsidy design.** The findings indicate that providing free induction stoves while requiring beneficiaries to buy compatible cookware results in lower usage rates. Bundling compatible quality utensils with induction stoves is therefore a recommended option for increasing usage although it may not be beneficial to offer such bundles free of charge given the greater eCooking usage among the ECO HHs that part-paid for EPCs.
- **Live demonstrations and community awareness.** The promotion and the adoption of eCooking relies heavily on live demonstrations, community awareness and allowing beneficiaries to gain hands on experience on eCooking technologies during pre –interventions at the community level. While doing so, it is crucial to take appropriate note of user’s hands-on experience and reflections.
- **Provision of eCooking support services.** Providing complimentary support services such as training on appliance use, sensitisation on eCooking benefits, and provision of household electricity infrastructure upgrades (e.g. wiring) and local after sales services is crucial for encouraging and enabling sustained eCooking usage. Research is required to better understand affordability challenges regarding post sales services and consumer willingness to pay for such services.
- **Increasing choice of eCooking appliances.** To unlock greater eCooking usage, the findings strongly indicate that providing households with a choice of appliances will be key to enabling electricity to become the primary cooking fuel.
- **Developing sustainable financing options.** For those who are not able to afford purchasing compatible utensils or an additional eCooking appliance, financing mechanisms (e.g. result based financing) may assist in the purchase of eCooking devices. Financial institutions at the local level could be partnered with/mobilized to incentivize interest on micro loans for the purchase of eCooking devices. Financial mechanisms of periodic investments on eStoves should be developed for those who want to convert their willingness to cook on electricity into actual usage of eStoves

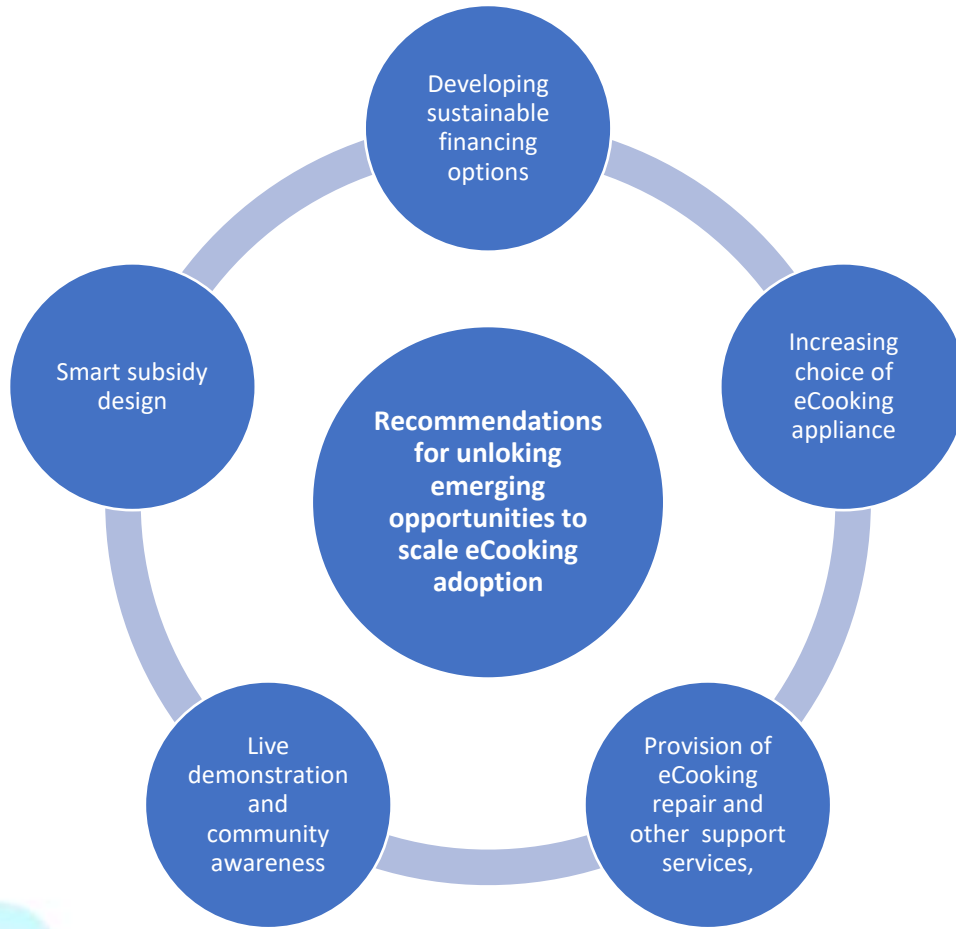


Figure 23: Overview of recommendations for scaling eCooking drawn from this study