

Understanding Impacts of Women's Engagement in the Improved Cookstove Value Chain in Kenya

EXECUTIVE SUMMARY

COMMISSIONED BY:
GLOBAL ALLIANCE FOR CLEAN COOKSTOVES



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In this study, we examine the relative impacts of engaging women entrepreneurs in the clean cooking value chain and its association with overall improved cookstove (ICS) sales and adoption. This was a collaborative effort between the Center for Global Clean Air at the Johns Hopkins Bloomberg School of Public Health, ESVAK Kenya, and Envirofit International.

The overall objectives were to understand the impacts that women can have on sales of ICS when engaged as entrepreneurs and to compare the relative business capacities of newly trained male and female entrepreneurs who received either basic entrepreneurial training or a novel agency-based empowerment training.

We used a randomized control design with the following aims:

- Aim 1:** To determine if female entrepreneurs are as effective as male entrepreneurs in selling ICS in rural and urban sites in Kenya
- Aim 2:** To determine if an agency-based empowerment training improves the effectiveness of ICS entrepreneurs when compared with standard entrepreneurial training
- Aim 3:** To determine if there are differences in reported usage and satisfaction depending on the gender of the ICS sales agent

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KEY FINDINGS

- In our sample, **women outsold men cookstoves sellers** by nearly 3 to 1.
- The agency-based empowerment training led to a **more than doubling of business capacity** for both genders.
- Those entrepreneurs that were found to be **high sellers** (selling more than 8 cookstoves), were nearly twice as likely to be female or working in the urban setting.
- Those entrepreneurs that received the **agency-based empowerment training** were nearly 3 times more likely to be high sellers of cookstoves.
- If women sold to other women**, those consumers were more likely to report consistent and correct cookstove use and were more likely to report the benefits of cookstoves as compared to male cookstove sellers.

Women's Role in Improved Cookstove Promotion

Due to their roles as primary cooks and household energy managers, there is a significant opportunity to engage women in the promotion and sales of ICS. Yet, globally, women's involvement in clean cooking value chains has not been fully leveraged. This is due, in part, to the multiple challenges faced by women that impede their capacity to effectively engage within the energy sector. Economic empowerment involves making markets work for both men and women (at the policy level) and empowering them to compete in these markets. Equitable participation in markets can make significant contributions to household budgets and help families move out of poverty. However, women face additional constraints, as compared to men, in particular because they lack time due to the nature of their daily tasks such as collecting fuel and water¹.

Widespread Adoption of Clean Energy Solutions in Kenya

In Kenya, there is tremendous opportunity to increase access to clean cooking solutions as a large percent of the population lives in rural areas and many of those most in need of ICS have poor access to and/or lack of awareness of ICS. Kenya has in many ways served as a model African market for the clean cooking sector. Over the past 30 years, Kenya witnessed the rapid and successful commercialization of a ceramic charcoal stove called the Kenyan Ceramic Jiko². Yet, in spite of this, the majority of Kenyans still do not have any form of improved cooking

technology. A primary goal of this study was to understand how women engaged as entrepreneurs can increase the adoption and use of a robustly engineered, highly efficient, cleaner burning and resilient cookstove that can have social, environmental, and health benefits.

The Need to Include Women in the Energy Sector

Since women are the primary users and often producers of energy, without their direct involvement, renewable energy projects are at risk of not reaching their intended populations or being used at all³. However, many programs within the energy sector continue to be designed without consideration of their effects on women or of the role of women in their implementation strategy⁴. Employment in the energy sector remains male dominated. There are several efforts currently underway to utilize women's networks and/or women's entrepreneurship to market and distributive clean cooking solutions to increase distribution and sales⁵. Despite this, there are indications that more involvement of women in this sector is needed. In addition, interventions that build the evidence around the importance of working with women in the value chain and recognize the barriers that exist while optimizing context specific opportunities are vital.

The Need for Agency-Based Empowerment Training

Data from the recent 2013 Global Entrepreneurship Monitor (GEM) Women's Report⁶ document that in every economy reviewed, women

had lower capability perceptions and greater fear of failure than men. Based on informal review of curricula, we found many entrepreneurial training programs concentrate on skill building without much focus on the psychosocial challenges of taking on a new endeavor.

This work builds upon earlier research in Kenya that demonstrated that following an agency-based training, there was a substantial increase in women's capacity and willingness to identify and pursue economic opportunities and build strong relationship skills⁷. This current study examines the impacts that agency-based empowerment training can have to increase the motivation and capacity to develop a successful ICS business, for both men and women.

Understanding the Impacts of Agency-Based Empowerment Training on ICS Sales

In this stratified, randomized control trial (RCT), we followed a total of 257 entrepreneurs that completed either a four-day entrepreneurial training (control) or a four-day agency-based empowerment training (intervention) for nearly eight months documenting business activity and sales. The RCT was conducted in two locations in Kenya: an urban slum in Nairobi and a rural mountain region of central Kenya. Each location included both men and women, half of which received either the standard training (control) or agency-based empowerment training (intervention). Entrepreneurs were called to participate in bi-weekly or monthly meetings to review progress, address challenges, and discuss potential solutions. Entrepreneurs

worked independently and were supported by a local field team to obtain the cookstoves.

Recruitment and selection procedures

Over 600 women and men in both locations expressed interest in selling ICS by attending an informational session and preliminary application review. Envirofit and ESVAK focused on identifying individuals with prior business experience in selling, an interest in pursuing additional entrepreneurial activities, and basic communication skills. Interested applicants were given a demonstration of the ICS and were informed about the study.

With the RCT design, participants from both urban and rural areas were randomly assigned to either control and intervention group. Among the individuals invited to participate, a total of 310 from both sites (106 males and 204 females) ultimately agreed to partake in the study and were randomized. After randomization, individuals were placed into their respective trainings and were expected to attend each of the four days of training as well as a half day focused training on the Envirofit cookstove models.

Contents of the Entrepreneurial Training

The entrepreneurial training was designed to support individuals taking on a new business endeavor and has been used by ESVAK in their other community programs. It includes four days of instruction (approximately 32 hours of training) and covers the following topic areas: 1) starting a viable business as well as aspects

of business growth; 2) a refresher introduction to basic business skills including effective record keeping and basic accounting skills and cash management; 3) business planning, creation of action plans; 4) basic financial management skills; and 5) understanding the customer and review of group action plans.

Contents of the Agency-based Empowerment Training

The agency-based empowerment training builds upon a 4-day workshop where individuals participate in an introspective examination of key areas of their life drawing from basic tenets of positive psychology and incorporating exercises that address Bandura's core properties of individual agency. Each exercise is culturally adapted to the local context and crafted to reflect existing social norms and values by a local certified trainer. The training focuses on the following competencies: (a) exercises are relevant and meaningful to the individual; (b) the locus of control sits firmly within the individual rather than on external forces; (c) a simple process of cognitive reframing is adapted; and (d) participants self-reflect to assess progress toward their goals. Over the course of the workshop, through individual and interactive exercises, participants examine aspects of their emotions, relationships, their health, body, money, and work. In this training, exercises and examples were designed to support specific challenges faced in new entrepreneurial endeavors. The implementation of this workshop was modified to take into account the socio-cultural context and made relevant to individuals embarking on a new business.

Follow-up Process

The cohort of 257 male and female entrepreneurs was assigned to intervention-specific follow-up groups. The groups were to meet bi-monthly in the urban site and every three weeks in the rural site along with a key staff member who would facilitate the meetings. These follow-up meetings were designed to help entrepreneurs build their ICS business, address any challenges they were facing, and review best practices in ICS sales. Monitoring of ICS sales and follow-up was done for approximately eight months from December 2013 to July 2014.

Results

Characteristics of sales by gender and location in cookstove sales

From the outset of the study, we found significant differences between males and females associated with their interest in becoming an ICS seller, active participation in the new business, and actual sales. In nearly every group, there were one or two very high-selling entrepreneurs. Females demonstrated significantly better capacity to sell ICS than males. In addition, individuals (both males and females) who obtained the agency-based empowerment training demonstrated greater capacity to sell ICS than the control. Median sales were significantly higher in the urban location as compared with the rural areas. This is due in part to the greater level of poverty and capacity to purchase durable goods, as well as difficulty of travel to identify new markets.

Sales patterns

The differences in these sales patterns by gender and intervention group are shown in Figure 1. Nearly 80% of the males in the control group sold one or fewer cookstoves, compared with 65% percent of females in the control group. In the intervention group, slightly more than 50% of males and slightly less than 50% of females fell in this lowest category. The next most common seller type was limited sellers (selling 2-7 cookstoves), where 42% of males in the intervention group were classified, 15% of males in the control group and approximately 25% for members in the female group, either intervention or controls. With respect to active sellers (selling more than 8 cookstoves), 24% of females in the intervention group fell into this group. This is more than 2.5 times the percentages within any other group.

PERCENTAGE OF ICS SELLERS BY NUMBER OF COOKSTOVES SOLD

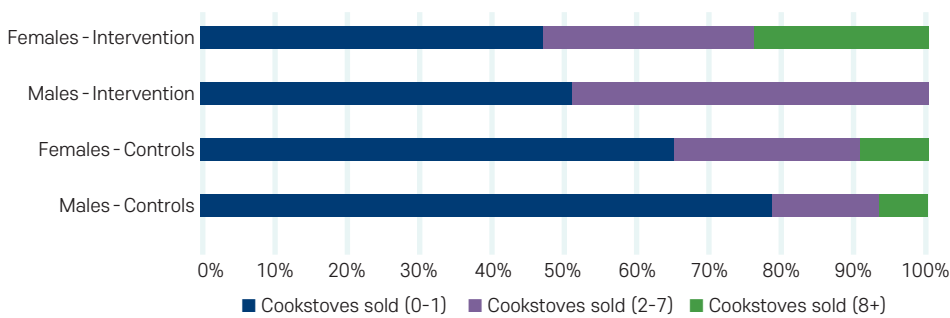


Figure 1. Percentage of cookstove sellers by type, gender, and intervention

Entrepreneurial activity over time

There was significant enrichment for enhanced business activity within the intervention group that underwent the agency-based empowerment training. Similar analysis was done by gender and location that indicates that females were significantly more likely to demonstrate active business engagement compared with males. Urban ICS sellers were more likely to show improved activity as compared to the rural sellers. Of note, after two months, a call to all enrolled entrepreneurs was conducted and revealed nearly 40% of the enrolled participants were no longer actively selling, therefore resulting in a substantial drop in active ICS entrepreneurs followed in the study.

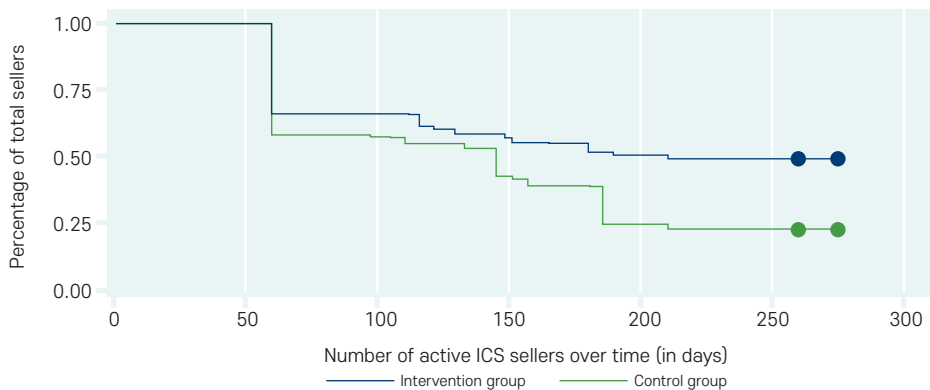


Figure 2. Kaplan-Meier curve showing business survival (activity) rates over time between control and intervention groups.

Actual cookstove sales over time

Over the course of the study, women outsold men nearly 3 to 1. Moreover, sales for entrepreneurs who received the agency-based empowerment training were more than double those in the control group (Figure 3). We were interested in understanding the primary driving characteristics for entrepreneurs who were active sellers (i.e. those selling 8+ ICS). In this comparison, controlling for gender and location, those who received the agency-based empowerment training were nearly 3 times more likely to be an active seller (selling 8+ stoves). Likewise, being female or living in an urban area more than doubled the likelihood of being an active seller.

TOTAL UNIT SALES BY INTERVENTION

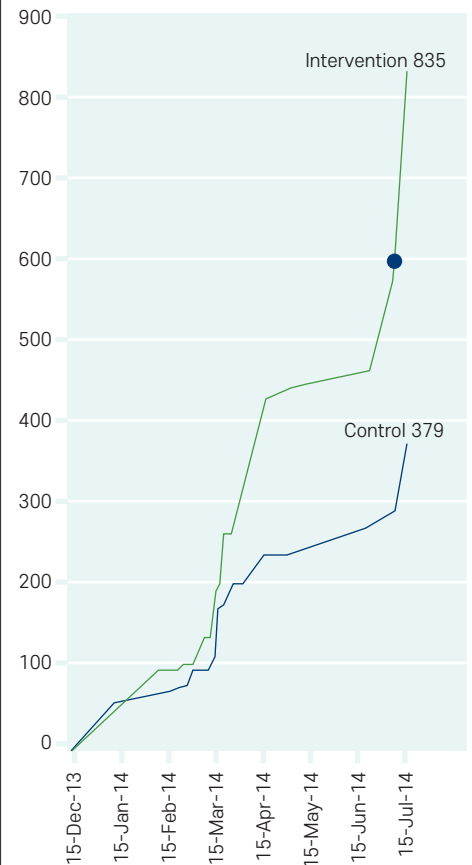


Figure 3. Total until sales by intervention over time

Impacts of the agency-based empowerment training on psychological states

We were able to obtain complete baseline and endline data from 117 men and women related to changes in psychological conditions over time. These psychological states were measured using previously validated psychometric scales associated with agency, hope and resilience. We found the following results:

- There were no differences between the control and intervention group at baseline for the following measures: environmental mastery, personal growth, positive relationships, purpose in life, and hope/agency.
- At endline, for individuals in the control group, there was no significant improvements in any of the psychometric measures examined.
- Gender stratified analysis showed that only women in the intervention group showed significant improvement in each of the psychometric measures assessed.
- In the area of personal growth, which control women scored higher on at baseline, showed a significant decline at endline (from 72% to 56%) in contrast to women in the intervention group (58% to 90%).
- Of particular note is the changes noted in the measure of grit, which is related to perseverance, for women who obtained the agency-based training, increasing from 69% to 90% of all women sampled.

Knowledge and belief of cookstove consumers

We obtained data from 314 consumers to understand how their experience of the transaction and their knowledge and reported use of the cookstove. We found the following results:

- Nearly all consumers reported high levels of satisfaction with their cookstove seller regardless of their gender.
- Consumers that purchased the cookstove from a female entrepreneur were significantly more likely to report the benefits of the cookstove as being very easy (63% vs 45%), very safe as compared with the traditional cookstove (55% vs 26%) and much better than their traditional cookstove (74% vs 62%).
- When asked whether the ICS were used all of the time, a significantly greater percentage of consumers reported that they were (65% vs 48%).
- Women who sold to women were more likely to explain in detail how the cookstove should be used, especially when cooking with large pots or for multiple dishes.

Challenges faced by cookstove sellers

The overarching challenge for these new entrepreneurs was the unstable economy, especially in the rural areas. Over the course of the study, local economies in both rural and urban sites faced significant downturns due to political unrest and lack of economic growth. This affected both cookstove sellers and potential clients. Seasonal

obligations related to agricultural needs, educational fees, and holiday commitments also affected sales.

Conclusions

Agency-based empowerment training can be an important supplement to existing entrepreneurial training as it appears to increase an individual's intrinsic capacity to overcome challenges associated with taking on a new endeavor. Our results found that women entrepreneurs at our study sites demonstrated more than twice the level of business capacity and success as compared to men. In addition, both men and women benefited from the agency-based empowerment training with a nearly 3 times greater likelihood of becoming a high seller of cookstoves (as defined as selling 8 or more cookstoves).

Our study also revealed that customers that purchased a cookstove from a woman were more likely to report that they used it all of the time, felt it was better overall than their traditional stove, was very safe, and easy to use as compared to customers who purchased the cookstove from a man. Customers felt that women were more capable of explaining how to use the cookstove as compared with men.

However, based on the qualitative data from the on-going support meetings, entrepreneurs felt additional skills were still needed to build their competency, especially more integrated business, and leadership skills. With support from the Global Alliance for Clean Cookstoves and in conjunction with

the Visionaria Network, we developed a handbook to support small and micro – female entrepreneurs that integrated gender sensitive business training, empowerment and leadership components, which is now available at <http://cleancookstoves.org/resources/342.html>.

Women's individual agency is crucial for development as it enhances one's capacity to navigate the psychological, socio-cultural and structural challenges that are faced on a daily basis. It is

important that efforts move beyond the need to examine empowerment as a potential by-product of improved access to clean energy solutions and move towards the opportunity to amplify women's roles, agency and voice in this sector. Without direct and active involvement of women within clean cooking solutions, it is unlikely that we will reach our goals to advance access to and consistent adoption of clean cooking solutions.

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The Global Alliance for Clean Cookstoves is a public-private partnership hosted by the United Nations Foundation to save lives, improve livelihoods, empower women, and protect the environment by creating a thriving global market for clean and efficient household cooking solutions. The Alliance's 100 by '20 goal calls for 100 million households to adopt clean and efficient cookstoves and fuels by 2020. The Alliance is working with its public, private and non-profit partners to accelerate the production, deployment, and use of clean cookstoves and fuels in developing countries.