## "A FRIEND INDEED":

## EVALUATION OF AN INSURANCE

EDUCATION RADIO CAMPAIGN IN KENYA

## $\stackrel{r}{n}-$ MFO

microfinance opportunities


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## EXECUTIVE SUMMARY

Microfinance Opportunities (MFO) and the Association of Kenyan Insurers (AKI) are collaborating on an industrywide education strategy to facilitate uptake and use of insurance in Kenya and to test the effectiveness of using the mass media as a channel for these messages. The resulting Insurance Consumer Education - Kenya (ICE-K) project is a pioneering effort to provide insurance education in the region by enabling local organizations to disseminate educational messages about insurance to Kenyans. This is being done through a participatory radio campaign designed to provide consumers with the knowledge and skills necessary transition from using reactive to proactive risk management strategies such as insurance. The campaign seeks to reach a broad base of potential insurance consumers, with a particular interest in reaching low-income Kenyans.

This evaluation report presents the results of research on the ICE-K radio campaign conducted with listeners in Kenya and is intended to assess its efficacy before replicating similar media campaigns in the future, in Africa or elsewhere. The project also represented an opportunity to test the adaptability of MFO's Risk Management and Insurance training curriculum to a mass media campaign. Report findings, based on baseline research in August 2010 and endline research in January 2011, reveal that the radio campaign had a measurable impact on listener awareness and knowledge levels surrounding insurance.

The project also provides technical support to insurance companies and distributors in adapting risk management and insurance messages based on MFO's curriculum to other media channels. The pioneering campaign was based on MFO's curriculum on microinsurance, Risk Management and Insurance: Protect Your Family's Future. Based on these results, several recommendations are given to help in planning future insurance education media campaigns in Kenya or elsewhere.

## PROJECT STRUCTURE

The ICE-K Project aimed to develop an insurance culture in Kenya. MFO led the ICE-K project, with AKI as its main partner in Kenya. AKI hired and supervised two Kenyan media partners who were responsible for the production and broadcast of the radio campaign, respectively.

The radio campaign was the largest of the four components of the ICE-K project, which were, in the following order:

- A training of trainers (TOT);
- The radio campaign;
- Follow-up technical assistance (TA); and
- A quantitative and qualitative evaluation.

Together, these four elements were designed to impact 16 learning objectives, outlined at the start of the project, which were established to close existing knowledge gaps in insurance literacy among low-income household members.

The TOT provided participants from Kenyan insurance companies with guidance on how to better tailor insurance product information to the needs of the low-income market and prepared staff from AKI and the radio production partner, Advertising Matters, to tailor the campaign to the same low-income consumers. The radio campaign was designed to educate and inform consumers about the risk management needs of the low-income market, and what options are available to manage their risks, including the use of insurance. Technical assistance
was offered to select insurance companies and microfinance institutions with an interest in marketing to lowincome consumers after the end of the radio campaign. Finally, quantitative and qualitative data was collected to analyze the impact of the radio program. The findings of the analysis are contained in this report.

## RADIO CAMPAIGN STRUCTURE

The radio program, titled "A Friend Indeed," comprised 13 episodes that ran weekly on iNooro FM, a Kikuyulanguage station, and Radio Citizen, a Kiswahili-language station. All primary research for this evaluation was conducted with iNooro listeners in Central Province. Nearly all episodes included three elements-dramas, testimonials, and expert advice, and some included audience participation.

The storylines of the drama follow a typical family living in Kenya facing common insurable risks to ensure that listeners could relate to the content. Throughout the series, the protagonist household suffers common shocks; chooses how to allocate limited household assets; and encounters situations in which members learn the basics about household financial products, such as savings accounts.

## PROJECT LEARNING OBJECTIVES

At the onset of the project, 16 learning objectives were established for the radio campaign. The objectives were created with consideration for existing knowledge gaps in the understanding of financial products and risk management techniques among low-income households. They fall into three categories- understanding risks, managing current assets, and understanding insurance. The content of "A Friend Indeed" was specifically designed to improve scores on the 16 objectives by using the program elements to relay information based on these objectives. The quantitative survey used to collect data for this report measured baseline and endline understanding of the 16 objectives, allowing researchers to identify any changes that occurred following the airing of the radio program.

## THEORY OF BEHAVIOR CHANGE

The recommendations in this report were formulated based on a theory of behavior change that postulates that individuals must first acquire the knowledge necessary to understand a particular change in behavior, the skills to successfully make the change, and a positive attitude towards doing so. Only after changing his or her knowledge, skills, and attitudes (KSAs) will individuals change their behavior. Ultimately, the goal is to encourage participants to take up, use, and renew insurance.

This evaluation focuses on measuring the likely outcomes of the campaign, namely changes in awareness and KSAs, which were measured immediately after exposure as indications of short- to medium-term impacts. The study assumes that behavior change is a longer-term impact and is therefore unlikely to occur immediately after an intervention such as the radio campaign. These measures, therefore, were minimally tested.

## LOCATION

With a population of $39,802,000$ (UNICEF, 2010), Kenya's GDP is $\$ 29.376$ billion (The World Bank, 2010). Despite having a large economy for the region, Kenya ranks 128th in the UNDP's Human Development Index (UNDP, 2010), and the GDP per capita is $\$ 738$ (The World Bank, 2010).

Central Province, where iNooro listeners are concentrated, has a population of 4,383,743 and is the homeland of the Kikuyu, one of the largest ethnic groups in the country (Oparanya, 2010), though. Kikuyu speakers are found throughout the country.

Although Kenya's insurance industry is one of the most vibrant in East Africa, the value of insurance premiums as a percent of GDP in Kenya is $2.84 \%$, which is much lower than the rates in most Western countries (OECD, 2010). Most Kenyans still associate insurance with big business and the wealthy. Low-income Kenyans, in particular, do not have much knowledge about insurance, and they tend to be dismissive of insurance or unaware of its potential benefits.

## RADIO'S REACH IN KENYA

The ICE-K campaign utilized radio in order to capitalize on this media's reach and established trustworthiness to deliver insurance education to the maximum number of Kenyans via a medium they would respond to. In a recent national survey, $89 \%$ of respondents reported using radio to get news and information, as opposed to $86 \%$ who turn to friends and family, $64 \%$ who turn to other people in the community, $55 \%$ who use television, and $39 \%$ who use newspapers (Audiencescapes, 2010). Importantly, $98 \%$ of study recipients described radio as a trusted source of information (Audiencescapes, 2010).

In addition to using an accessible and trusted medium, the ICE-K project broadcast the radio campaign on two of the three most popular stations nationwide. Radio Citizen, which broadcasts in Kiswahili, was cited as the most popular station and iNooro FM, broadcasting in Kikuyu, as the third most popular. The listenership of iNooro FM is concentrated in Central Province, where $56 \%$ of listeners rate it as one of their favorite stations (AudienceScapes, 2010).

## METHODOLOGY

In order to evaluate the impact of the ICE-K radio campaign, quantitative baseline data was collected in September 2010 and quantitative and qualitative endline data was gathered in January 2011.

## Quantitative Research

The survey collected data on demographics, changes in consumer education levels, and on listener satisfaction. Survey data were collected from 300 baseline participants and 301 endline participants in the Central Province of Kenya in September 2010 and January 2011, respectively. Because this was a cohort study, an array of key demographic variables was measured to assess comparability of the baseline and endline groups. In addition, these key demographic variables were included in the statistical model used to identify the impact of the radio campaign on different subsets of the sample. The data were analyzed using a log OCS method in order to assess the impacts of the radio campaign on listeners' scores in comparison to non-listeners.

## Demographic questions

In order to profile the sample and to control for variation in the socio-economic level and household characteristics of participants, the survey measured a variety of demographic variables, including age, gender, education level, marital status, income, and household size.

## Consumer education questions

The survey included 88 questions related to consumer education. These questions were included to assess baseline levels on these four measures and to provide a basis for comparison to endline measures collected following the airing of "A Friend Indeed." Questions were designed to vary in difficulty in order to provide an accurate representation of each individual's level of understanding, attitudes, trust, and behaviors. These measures were quantified as described in the following section.

The survey assessed five measures of insurance and risk management understanding. The following table describes these measures, lists the number of survey questions focused on each one, and includes a sample questions.

Table 1: Summary of Survey Measures

| Measure name | Description | Sub-categories | No. of <br> questions |
| :--- | :--- | :--- | :--- |
| Insurance <br> awareness | Participant exposure to insurance terms and <br> products | Awareness of insurance <br> terms | 8 |
| Insurance <br> literacy | Participant ability to correctly define risk <br> management and insurance terms | Knowledge of risk <br> management <br> techniques | 13 |
|  | Knowledge of insurance | 32 |  |
| Attitudes about <br> insurance and <br> risk management | Desirability of attitudes towards savings, <br> purchasing insurance, risk management <br> techniques and insurance products | $n / a$ | 12 |
| Trust attitudes | Participant level of trust towards insurance <br> companies, measured in comparison to banks, <br> local NGOs, government officials, neighbors, <br> SACCOs, and medical staff | $n / a$ | 9 |
| Behavior | Participant familiarity with insurance terms <br> and products | Use of insurance | 14 |

## Listener satisfaction

The endline survey administered to iNooro listeners included an added section of 27 questions measuring listening frequency and respondents' knowledge of and satisfaction with the radio campaign. Frequency distributions were used to provide measures of listener knowledge and satisfaction.

## Sampling notes

The quantitative research for the evaluation was conducted using a survey administered to frequent radio listeners in the Central Province of Kenya. Randomly selected respondents were organized into treatment and control groups. The treatment group, or those exposed to the radio campaign, consisted of iNooro listeners. The
control group of non-listeners was composed of respondents who listen daily to radio stations other than iNooro FM. Recruitment quotas ensured a balance between urban and rural listeners and across age categories.

## Baseline to Endline \& Treatment vs. Comparison Comparability

In order to ensure comparability across baseline and endline groups, the differences between the two groups were analyzed on a variety of key demographics. Propensity matching analysis of the baseline/control test suggests that the distribution of the propensity scores for the control and treatment groups overlap. The analysis of the endline/control test also suggests that the distribution of the propensity scores for the control and treated groups overlap. Collectively, these results indicate that the baseline/endline and control groups are similar, based on the descriptive analysis.

## Qualitative Research

Qualitative data were collected in January 2011 for 33 participants in four focus group discussions (FGDs) in one urban and one rural location in Central Province. Two in-depth interviews were also conducted. The qualitative research targeted iNooro listeners to gain insights into the quantitative survey results and to provide information on listener satisfaction with the radio campaign. The FGDs elicited information on the knowledge, skills, attitudes (KSAs) and behavior of participants around money management and insurance. A participatory rapid appraisal tool was used to understand what institutions and people participants trusted and why, for comparison to their level of trust of insurance companies. Finally, participants were asked about their media preferences and reactions to the ICE-K campaign on iNooro. A socio-economic profile tool was used to collect demographic information on participants and their households.

## Limitations of the study

This study of the impact of a national insurance education radio campaign on the KSAs of listeners has some limitations that affect the conclusions that can be drawn from the data. The two major limitations concerned the national generalizability of the data and the use of short-term outcomes to predict medium- to long-term effects.

Specifically, the evaluation focused on the radio campaign aired on one station, iNooro FM, due to constraints on time and resources. Therefore, the results can be generalized to listeners of the iNooro campaign but cannot be taken as indicative of the impact of the campaign overall. Also, the research focuses on short-term changes to the outcome KSAs, but the study could not measure the full impact of the radio campaign in terms of the medium- to long-term behavior change outcomes, notably insurance uptake.

## RESULTS

Five measures of consumer education were assessed in this report, including awareness of insurance and risk management techniques, insurance literacy, insurance behavior, attitudes towards insurance, savings and risk management, and trust (both generally and of insurance companies, specifically). Of these five measures, the radio campaign had largest impact on the general scores of listeners, on listener awareness of insurance terms and products, and on listener knowledge of insurance terms and policies. Listeners scored $18.6 \%$ higher on measures of awareness and $8 \%$ higher on measures of knowledge than non-listeners. The findings imply that simple exposure to insurance terms and risk management techniques through the radio program was sufficient to increase awareness and knowledge of insurance. Under the theory of financial education behavior change, improving awareness and knowledge of insurance terms and products is a first step in moving consumers
towards changes in attitudes, increased skills, and, eventually, behavior change. Thus, the evaluation found that these improvements in listeners' overall awareness of insurance and risk management and knowledge of insurance terms and products indicate that radio is an effective tool to encourage financial behavior change. Listeners may need repeated exposure and prolonged time periods to advance along the continuum, however.

The lack of change in positive attitudes towards insurance and trust of insurance companies may be related to the context in which participants normally encounter insurance. Lack of trust of insurance companies tends to be tied to negative experiences with insurance and a lack of understanding of how insurance works. In focus groups, listeners recounted that stories of negative experiences tend to be passed through social networks, spreading mistrust of insurance companies. The exposure that listeners received to positive messages about insurance and insurance companies may not be sufficient in duration and length to counteract personal experiences or word-of-mouth.

## CONCLUSIONS

The ICE-K radio campaign was implemented in order to increase awareness and knowledge of insurance and risk management among Kenyans, with the ultimate goal of increasing the capabilities of low-income consumers to make informed decisions about using risk management and insurance products. The results of the evaluation research suggest that the campaign had a positive impact on listeners who heard the program on iNooro FM.

Five measures of consumer education were assessed in this report, including awareness of insurance and risk management techniques, insurance literacy, attitudes towards insurance, savings and risk management, trust of insurance companies, and insurance behavior. Of these five measures, the radio campaign had the largest impact on listener awareness of insurance terms and products, which is to be expected. These findings imply that basic exposure to insurance terms and risk management techniques through the radio program was sufficient to increase awareness.

Overall, our analysis of the ICE-K radio campaign indicates that radio is an effective tool for encouraging behavioral change, but listeners may require repeated, more prolonged exposure to change their behavior.

Listeners' expressed demand for additional radio programs and their willingness to share the information with others indicates a potential multiplier effect. This suggests that there is a potential for a radio program to impact not only listeners, but also those in their social networks.

## COST-EFFECTIVENESS ANALYSIS

A cost-effectiveness analysis of the ICE-K project was conducted to assess the level of resources required to achieve the reported changes in listeners' insurance literacy levels. The cost-effectiveness was calculated as the cost to achieve a $1 \%$ increase in the outcome of interest among the radio listener audience. The analysis found that the cost raise the radio campaign audience's insurance awareness scores by $1 \%$ was USD $\$ 7,238$, the cost to raise the audiences' insurance knowledge scores by $1 \%$ was USD $\$ 17,190$ and the cost to raise the combined awareness and knowledge scores by $1 \%$ was USD $\$ 10,187$. The cost per listener was also calculated as another measure of program efficiency. This ratio, calculated based on the analysis of the budget and listenership estimates, ranged from USD $\$ 0.013$ to USD $\$ 0.0748$ depending on assumptions about the audience size and which components of the ICE-K project were included in the cost estimates. It is not surprising that these results suggest that there are economies of scale to using mass media that allow for the widespread dissemination of insurance education at low cost.

## RECOMMENDATIONS

1. The survey data revealed that regular listeners to iNooro's evening programs, who were likely to be exposed to the radio campaign, scored higher than those who were not exposed to the campaign on scores of awareness and knowledge of insurance. This result is in line with the theory of change underlying the campaign, which suggests that repeated exposure to informational messages over prolonged periods of time will allow listeners to advance along the continuum from improved awareness, to improved knowledge, skills and behaviors. This will ultimately lead to the end objective of increased insurance uptake and improved risk management among the target population. Media campaigns conducted in a similar, weekly format should anticipate changes in measures of awareness and knowledge, due to the nature of the exposure to the program's messages that can be expected in a mass media campaign. However, the mass media reaches a wide audience, and the impacts are spread even more broadly by word-of-mouth, reaching many more people than could be expected with the same resources using face-to-face channels. With repeated exposure, this may over time result in a general increase in awareness and knowledge and better equip the target population to further advance towards behavior change.
2. The content of the radio program must be carefully tailored to the tastes and experiences of the audience. Survey respondents easily identified the drama segment and expert analysis as parts of the radio program, and focus group participants appeared to appreciate the "simple" nature of the dialogue and to identify with the characters. These segments and features seemed to appeal to listeners, suggesting that the dialogue and characters were true to the actual experiences of listeners. It is important to understand the target audience when designing a radio program to ensure that it is both entertaining and relevant to their situations and problems.
3. The evaluation results indicate the need for additional or repeated exposure of the target audience to the programs addressing the following topic areas:

- How to understand the difference between insurance and savings;
- How to understand an insurance policy and its terms; and
- Overview and benefits of property insurance for petty traders and microentrepreneurs who are at constant risk of theft or destruction by fire.


## INTRODUCTION

The Insurance Consumer Education - Kenya (ICE-K) project is a pioneering effort to provide insurance consumer education to Kenyans by enabling local organizations to disseminate insurance education as a public good. Microfinance Opportunities (MFO) and the Association of Kenyan Insurers (AKI) are collaborating on an industry-wide education strategy to facilitate uptake and use of insurance in Kenya. This is being done through a participatory radio campaign designed to provide consumers with the knowledge, skills, and attitudes necessary to transitions from using reactive to proactive risk management strategies such as insurance. The project also provides technical support to insurance companies and distributors that are interested in adapting the Risk Management and Insurance material to other media channels.

This evaluation report presents the results of quantitative and qualitative research activities conducted with radio listeners in the Central Province of Kenya. Quantitative baseline and endline surveys were conducted in August 2010 and January 2011, respectively, and qualitative work was conducted in January 2011. The results reveal that listeners of the radio campaign had higher levels of awareness and knowledge of insurance than non-listeners after the campaign. Based on these results, several recommendations are given to help in planning future insurance education media campaigns in Kenya or elsewhere.

## PROJECT OBJECTIVES

The primary objective of the ICE-K project was to develop an insurance culture in Kenya by means of an insurance education radio campaign. This project partnered Microfinance Opportunities, experts in financial education (FE) for the poor, with the Association of Kenya Insurers (AKI) representing the insurance industry in Kenya. The pioneering campaign was based on MFO's curriculum on microinsurance, Risk Management and Insurance: Protect Your Family's Future.

The radio campaign sought to reach a broad base of potential insurance consumers, with a particular interest in reaching low-income Kenyans. MFO's experience in reaching and educating low-income consumers with FE was viewed as key to achieving project objectives. These consumers have historically benefitted very little from FE, and in Kenya most have little knowledge or understanding of most types of insurance products.

The project also represented an opportunity to assess the adaptability of MFO's Risk Management and Insurance training curriculum to a mass media campaign. The curriculum is part of a nine-module series designed to equip trainers to help target audiences build basic knowledge, skills, and attitudes to improve how they manage their money. Specifically, the Risk Management and Insurance module focuses on the challenge of helping people protect their families against unexpected shocks that can erode financial stability. It also reviews a variety of strategies that can be used to manage risks before and after they occur and introduces insurance, the concept of pooled risk, and common insurance terms.

The module was originally written for classroom-style trainings, but the structure and concepts remain highly adaptable to other training formats. Mass media are intriguing delivery channels because of the scale of their audience. That said, the effectiveness of mass media in educating low-income consumers
about risk management and insurance in places like Africa has received relatively little research attention. The ICE-K project therefore represents a pioneering insurance education effort, and this evaluation is intended to assess its efficacy before replicating similar media campaigns in the future, in Africa or elsewhere.

## PROJECT BACKGROUND

The ICE-K Project consisted of four distinct elements aimed at developing an insurance culture in Kenya. The largest of these elements, the radio campaign, was supported by three additional components both prior to and following the airing of the radio program. Together, these four elements were designed to impact 16 learning objectives, outlined at the start of the project, which were established to close existing gaps in insurance literacy among low-income household members.

## PROJECT STRUCTURE

The radio campaign was the largest component of the ICE-K project. The other components of the campaign were designed to support the radio programming and maximize its impact. The elements of the project were, in the following order:

1. A training of trainers (TOT);
2. The radio campaign;
3. Follow-up technical assistance (TA); and
4. A quantitative and qualitative evaluation.

The training of trainers preceded the radio campaign, and its purpose was twofold. Its first purpose was to help participants from Kenyan insurance companies to understand the information and communication needs of low-income consumer. This will enable them to better tailor insurance product information to the needs of that market. The second purpose of the TOT was to prepare staff from AKI and the radio production partner, Advertising Matters, to tailor the campaign to the same low-income consumers. The radio campaign itself was designed to educate and inform consumers about what options are available to manage their risks, including the use of insurance. Technical assistance, the third component of the campaign, is being offered to select insurance companies and microfinance institutions with an interest in marketing microinsurance to low-income consumers. The purpose of this component is to assist insurance companies in embedding the delivery of financial education messages within their marketing operations. Finally, quantitative and qualitative data were collected to analyze the impact of the radio program. The findings of the analysis are contained in this report.

## RADIO CAMPAIGN STRUCTURE

The radio program, titled "A Friend Indeed," comprised 13 episodes that ran weekly on iNooro FM, a Kikuyu language station, and Radio Citizen, a Kiswahili language station. While the campaign structure and individual scripts were identical on both stations, all primary research for this evaluation was conducted with iNooro listeners. Nearly all episodes included three elements - a drama, testimonials, and expert advice. In addition to these, call-in question and answer sessions and contests were used regularly throughout the program.

The drama storylines followed a typical family living in Kenya. The protagonist household heads, Andrew, age 35, and his wife Jaclyn, age 30, have 3 children and earn approximately 20,000 Kshs (USD $\$ 232.96)^{1}$ per month in their respective occupations as a truck driver and retail shop owner. Throughout the series, the household faces several insurable risks; chooses how to allocate limited household assets among competing and sometimes urgent needs; suffers from shocks, commonly related to health; and encounters situations through which they learn the basic elements of household risk management and financial products, such as a savings account. These plots were designed to reflect common experiences shared by average Kenyans, ensuring that listeners could relate to the content.

## PROJECT LEARNING OBJECTIVES

At the onset of the project, 16 learning objectives, outlined in Figure 1, were established for the radio campaign. The objectives were created to address existing knowledge gaps in the understanding of financial products and risk management techniques among low-income households. The objectives focus on topics where consumer education is needed, and fall into three categories- understanding risks, managing current assets, and understanding insurance.

The content of "A Friend Indeed" was specifically designed to improve scores on the 16 objectives by using drama, testimonials, and expert advice to relay information related to the objectives. For example, the episode in week 7 focuses on the insurance-related objective and identifying common insurance terms. Using the drama format, the main character, Andrew, explains insurance to his wife, Jaclyn, by using terms associated with insurance. Next, real people define the terms, correctly and incorrectly, to teach listeners the terms and to correct common misperceptions. Finally, an expert provides a detailed explanation of exclusion, coverage, and deductibles.

[^0]Figure 1: Project Learning Objectives by Category


|  |
| :--- | Managing Assets


| Insurance |
| :--- |
| -Identify common myths |
| - Explain how insurance |
| works |
| - Analyze costs and benefits |
| - Identify common terms |
| - Identify common types of |
| insurance |
| - Explain the function and |
| benefits of each type of |
| insurance |
| -Identify best product for |
| the family |
| -Identify consequences of |
| not renewing insurance |

The quantitative survey used to collect data for this report measured baseline and endline understanding of the 16 objectives, allowing the researchers to establish any changes that occurred following the airing of the radio program.

## THEORY OF BEHAVIOR CHANGE

The recommendations in this report were formulated based on a theory of behavior change that postulates that individuals must first acquire the knowledge necessary to understand a particular change in behavior, the skills to successfully make the change, and a positive attitude towards doing so. Only after changing their knowledge, skills, and attitudes (KSAs) will individuals change their behavior. This model of change underlies the design of the radio campaign, which seeks to impact listener KSAs around risk management and insurance. The model assumes that behavior change takes place over a long period of time. Ultimately, the goal is to encourage participants to make more informed decisions in the financial management of risks and, more specifically, in the use of insurance. This evaluation focuses on measuring the likely outcomes of the campaign, namely changes in KSAs, which can be measured immediately after exposure as indications of the campaign's short- to medium-term impacts. The study assumes that behavior change is a longer-term impact and is therefore unlikely to occur immediately after an intervention such as the radio campaign. These measures, therefore, were minimally tested.

Figure 2 shows the progression towards behavior change over the long term. The ICE-K project was specifically designed to improve awareness, knowledge, skills, and attitudes. Each phase of the project builds upon the previous one, with the ultimate goal being a positive behavior change. Immediately after the completion of the radio program, listeners will have improved awareness through simple exposure to terms and financial management techniques. This simple awareness of terms and techniques precedes the ability to correctly define terms and techniques. Soon after listening to the radio program, listeners should develop their knowledge related to financial tools. As this knowledge, also known as insurance literacy, improves, listeners are expected to develop skills related to identifying financial needs of the household and the ability to choose appropriate financial products to meet these
needs. This increased exposure and understanding, in turn, is expected to improve attitudes such as trust and confidence towards insurance and financial management. Finally, the foundation exists to support change in financial management behaviors.

## Figure 2: Phases of Behavior Change over Time



This theory of behavior change assumes sufficient time for participants to develop awareness, knowledge, skills, and attitudes before behavior change will occur. Individuals are much more likely to change their behavior after repeated and prolonged exposure to a message, such as those provided by the radio campaign, and when the right conditions, such as access to appropriate and affordable microinsurance products, are in place.

## PROJECT PARTNERS

MFO led the ICE-K project, with AKI as its main partner in Kenya. AKI hired and supervised two Kenyan media partners who were responsible for the production and broadcast of the radio campaign, respectively.

## Microfinance Opportunities (MFO)

Microfinance Opportunities is a global nonprofit organization committed to understanding the financial realities of low-income households and developing consumer-focused solutions. MFO's work shapes the design and delivery of financial products and services and enhances the capacity of low-income consumers to make informed financial decisions. In collaboration with a wide range of public and private sector partners, MFO's research and expertise aim to increase consumer access to finance in the developing world. Founded in 2002, Microfinance Opportunities is based in Washington, DC.

## The Association of Kenya Insurers (AKI)

The Association of Kenya Insurers, founded in 1987, is a voluntary industry trade group representing all 42 insurance companies registered under the Insurance Act in Kenya. The Association's main objective is to promote prudent business practices among its members and to increase public awareness about insurance in order to ensure the growth of the insurance business in Kenya. Before 1987, AKI was called The Insurance Association of Eastern Africa. Headed by Mr. Tom Gichuhi, the Association has approximately 20 employees and is based in the Upper Hills area of Nairobi.

## MEDIA PARTNERS

## Advertising Matters

Advertising Matters is a marketing and media production firm founded by Mr. Sam Njuguna, a writer and media producer with 17 years of experience and degrees in languages and mass communication. Advertising Matters was selected for the ICE-K project based on the quality of previous work they have
performed for AKI. Furthermore, Mr. Njuguna had an understanding of vernacular radio based on prior work for the BBC's Kiswahili-language service, and an understanding of some of the basic financial management issues based on work he performed for the National Social Security Fund of Kenya. Sam Njuguna attended the TOT, and served as the main contact and project leader at Advertising Matters for the ICE-K project.

## Royal Media Services

Founded in 1999, Royal Media Services is a media company that operates one television station (Citizen TV) and 11 radio stations. Citizen TV and three radio stations - Citizen, iNooro FM, and Hot 96 broadcast nationally in Kenya. Radio Citizen and iNooro FM broadcast in Kiswahili and Kikuyu, respectively, and together reach a significant portion of the population. RMS's eight other stations broadcast regionally in vernaculars such as Luo and Kalenjin. In interviews, business executives explained that RMS targets a mass audience, rather than the "prime" audience category of upscale urban listeners. As a result, they claim to reach more rural and low-income individuals than do other leading media outlets.

## KENYA BACKGROUND

Known in the West for its game preserves and Indian Ocean beaches, Kenya is located in East Africa, and its varied geography stretches from the coast of the Indian Ocean through the central plateau to Lake Victoria. With a population of $39,802,000$ (UNICEF, 2010), Kenya's GDP is $\$ 29.376$ billion (The World Bank, 2010). Major economic sectors include agriculture (tea, coffee, corn, wheat), clothing, iron and steel, forestry, manufacturing, wholesale and retail trade, transport and communications, real estate, and tourism (Kenya National Bureau of Statistics, 2009). Kenya's economy is vitally important to East Africa as a whole.

Despite having a large economy for the region, Kenya ranks 128th in the UNDP's Human Development Index (UNDP, 2010). The percentage of Kenyans living in poverty is $46.1 \%$ (The World Bank, 2010), and the percentage of the population living on less than $\$ 1.25$ per day (PPP), an indicator of severe poverty, is $19.72 \%$ (UNDP, 2010). The national literacy rate is $73.6 \%$ (UNDP, 2010). The GDP per capita is $\$ 738$ (The World Bank, 2010).

Central Province has a population of $4,383,743$ and is the homeland of the Kikuyu, one of the largest ethnic groups in the country (Oparanya, 2010). In total, Kenya has 7,180,000 Kikuyu speakers (Ethnologue, 2009). While they are concentrated in Central Province, Kikuyu speakers are found throughout the country, and several national radio stations broadcast in Kikuyu.

Figure 3: Map of Kenya showing Central Province


Source: http://kenya.usaid.gov/project-map/
Kenya's insurance industry is one of the most vibrant in East Africa, yet the value of insurance premiums as a percent of GDP in Kenya is $2.84 \%$, which is much lower than the rates in most Western countries (OECD, 2010).

## Table 2: Insurance Premiums as a Percent of GDP

| Country | Premiums as \% of <br> GDP |
| :--- | :--- |
| Kenya | $2.84 \%$ |
| Belgium | $8.2 \%$ |
| Switzerland | $10.0 \%$ |
| France | $10.4 \%$ |
| U.S. | $11.4 \%$ |

Source: OECD (2010)
Kenya's insurance industry has experienced rapid growth recently. According to the most recent figures available from AKI, the life sector of the Kenyan insurance industry grew $16.7 \%$ in 2009, while the non-life sector grew $16.8 \%$ (AKI, 2009), exceeding the $2.6 \%$ overall growth rate of the Kenyan economy. During the same year, by contrast, the U.S. life sector of the insurance industry shrank by $14 \%$, and the non-life sector shrank by 1.5\% (Reactions, 2010).

Table 3: Kenyan Insurance Industry Performance Indicators

| Measure | Kshs <br> (Billions) | USD \$ <br> (Millions) | Annual growth |
| :--- | ---: | ---: | ---: |
| Gross premiums | 64.47 | 766.53 | $16.8 \%$ |
| Gross earned <br> premiums | 53.92 | 638.81 | $16.41 \%$ |
| Net premiums | 42.80 | 507.07 | $17.32 \%$ |
| Net income | 57.90 | 685.97 | $20.05 \%$ |
| Net claims | 30.66 | 363.24 | $23.48 \%$ |
| Net profits before <br> taxes | 4.29 | 69.07 | $15.45 \%$ |
| Net profits after <br> taxes | 50.83 | $11.43 \%$ |  |

Source: Association of Kenyan Insurers (2009)
The life sector share of gross premiums in 2009 was 43.11 B Kshs (USD $\$ 510.74$ million, or $67 \%$ ), compared to 21.36 B Kshs (USD \$253.06) for the non-life sector (33\%). The most used forms of non-life insurance in 2009 were commercial motor, personal accident, private motor, and industrial fire.

Despite the growth of the industry, most Kenyans still associate insurance with big business and the wealthy. Low-income Kenyans, in particular, do not have much knowledge about insurance and tend to be dismissive of insurance or unaware of its potential benefits. The ICE-K project was initiated by MFO and AKI to provide average Kenyans with the tools they need to make informed decisions about insurance and to improve the conditions for insurance uptake among low-income Kenyans.

## RADIO'S REACH IN KENYA

Radio has been considered a trusted source of information in Africa for decades. Indeed its popularity in the region has withstood the emergence of other forms of electronic communication, including mobile phones and the internet. While Kenya's media and communications sector is more developed than are those of other countries in Africa, radio is still the most accessible and trusted information source for the majority of Kenyans, according to recent research. The ICE-K campaign thus sought to capitalize on radio's reach and trustworthiness in order to deliver insurance education to the maximum number of Kenyans via a medium they would respond to.

Radio is the best medium to reach Kenyans with informational messages. Nationally, Kenyans still use radio more than any other media or communication technology, including cell phones. Ninety percent of Kenyans access radio on a weekly basis for any purpose, versus $78 \%$ who access mobile phones, $58 \%$ who watch television, and $14 \%$ who use the internet. More importantly, Kenyans use radio to access information more than any other source, electronic or otherwise, including friends and family. Radio was used by $89 \%$ of respondents to get news and information in a recent survey, as opposed to $55 \%$
who use television, $39 \%$ who use newspapers, and $30 \%$ who use billboards. By contrast, $86 \%$ turn to friends and family, and 64\% turn to other people in the community (Audiencescapes, 2010).

Radio is also a highly trusted information channel for Kenyans. Ninety-eight percent of surveyed Kenyans who use the medium for information feel that it is either somewhat or very trustworthy. Informational messages delivered via the radio may be received in a more positive light than messages received via other channels because of the sense of trust that listeners have in the stations they listen to (Audiencescapes, 2010). ${ }^{2}$

In addition to using an accessible and trusted medium, the ICE-K project broadcast the radio campaign on two of the three most popular stations nationwide, according to AudienceScapes. Radio Citizen, broadcasting in Kiswahili, was cited as the most popular station and iNooro FM, broadcasting in Kikuyu, as the third most popular. RMS broadcasts both of these stations throughout Kenya, though listenership of iNooro FM is concentrated in Central Province, where most Kikuyu speakers in Kenya live. In Central Province, $56 \%$ of listeners rate it as one of their favorite stations (AudienceScapes, 2010).

## METHODOLOGY

In order to evaluate the impact of the radio campaign, quantitative and qualitative analyses were utilized. Quantitative data was collected using a survey administered to 300 baseline and 301 endline participants. Qualitative data was gathered from 33 iNooro listeners across four focus group discussions (FGDs).

## Quantitative

The survey was administered at baseline and endline to collect data on demographics, changes in consumer education levels, and listener satisfaction.

## Data collection

Survey data was collected from 300 baseline participants and 301 endline participants in the Central Province of Kenya in September 2010 and January 2011, respectively. Due to difficulties in following the same respondents over time, it was not possible to collect endline data from the same 300 individuals who were sampled at the baseline. Instead, data were collected from 301 different respondents, selected using the same sampling process. The comparability of the resulting baseline and endline groups across a variety of key demographic variables is discussed in the section of this report titled Participant Demographics. These key demographic variables were also included in the statistical model used to identify the impact of the radio campaign on different subsets of the sample. Controlling for these differences reduces bias in the results as a consequence of baseline and endline demographic differences.

[^1]Qualitative data were collected in January 2011 from 33 focus group participants in an urban and a rural location in Central Province. Nyeri, the capital of Central Province, was selected as the urban location and Othaya, which is approximately 12 miles away, was selected as the rural location.

## Demographic questions

In order to profile the sample and to control for variation in the socio-economic levels and household characteristics of participants, the survey measured a variety of demographic variables. These variables included age, gender, education level, marital status, income, number of household members, relation of respondent to his/her head of household, and employment status.

## Consumer education questions

The survey assessed five measures of insurance and risk management understanding:

1. Awareness of risk management and insurance terms;
2. Insurance literacy, including knowledge of risk management and insurance terms;
3. Trust;
4. Attitudes towards insurance, savings, and risk management; and
5. Insurance behavior.

The survey included 88 questions related to consumer education. These questions were designed to assess baseline levels of the five measures listed above and to provide a basis for comparison to endline measures collected following the airing of "A Friend Indeed." Survey questions ranged in difficulty in order to provide an accurate representation of each individual's level of understanding and attitudes. The questions, organized by the measures they address, can be found in Annex 5.

These measures of consumer understanding of insurance and risk management were quantified as described in the following section.

## Awareness

Awareness of insurance measures whether the participant has been exposed to insurance terms and products. Awareness of insurance was evaluated using eight survey questions assessing basic exposure to insurance terminology by asking respondents to identify insurance terms they have previously heard. A typical question measuring awareness asked respondents "Have you ever heard about 'exclusion'?" Questions related to awareness were designed as introductions to the insurance literacy questions. Only people who were aware of a risk management or insurance term were asked about their understanding of the term. Correct responses to these eight questions were aggregated for each respondent to generate an awareness score.

## Insurance literacy

Insurance literacy requires not only awareness of a term related to a financial product, but also the ability to correctly define the term. In total, 45 questions in the survey assessed overall insurance literacy. Each respondent's correct answers to these 45 questions were aggregated to provide an overall insurance literacy score.

The survey measured two components of insurance literacy: knowledge of insurance and knowledge of risk management techniques. Thirty two of the total 45 insurance literacy questions focused on insurance knowledge. These questions assess knowledge of insurance terms, types of insurance offered, and basic facts related to insurance coverage. The remaining 13 insurance literacy questions were directly related to risk management. To answer these questions correctly, respondents had to identify techniques for managing risks, which required a greater analytic capacity than did simply recalling the meaning of insurance terms and took a longer time to develop in those exposed to an educational campaign.

## Attitudes

Twelve statements in the survey focus on respondents' attitudes towards savings, purchasing insurance, risk management techniques and insurance products. Responses were assessed for indications of healthy or positive attitudes about these topics. For example, respondents who agreed or strongly agreed with the statement "Saving requires discipline, sacrifice and savings goals" were given a score of 1 for having an understanding of saving that would be likely to result in the development of desirable savings habits. The total number of desirable responses was aggregated for each individual to provide an attitude score.

## Trust

Nine survey statements measured levels of trust towards banks, local NGOs, government officials, neighbors, insurance companies, SACCOs, medical staff and other people in general. Respondents were assessed according to how positive their levels of trust were. For example, participants who strongly agreed or agreed with the statement "Most people are basically honest" were given a score of 1 for having a positive level of trust. The total number of positive responses to these nine statements was aggregated to provide overall trust scores for each individual. This method made it possible to rank the degree to which participants trusted insurance companies compared to other institutions and people and to compare levels of trust between treatment and comparison samples.

## Behaviors

The assessment measures respondent behavior around insurance. Specifically, the 14 questions ask respondents to identify every type of insurance someone in their household has ever purchased or used. The model of behavior change used for this project did not predict significant changes in behavior by the time of the endline research, because such change usually takes a longer time to develop after exposure to an intervention. The measure was included mainly to assess the similarity of experience between baseline treatment and comparison groups.

## Listener satisfaction

The endline survey administered to the comparison group was identical to the baseline survey administered to this group, with one notable exception. An additional section including questions measuring listening frequency and respondents' knowledge of and satisfaction with the radio campaign was added to the endline survey administered to iNooro listeners. In total, 27 questions about the campaign were asked. Frequency distributions were compiled for answers to each question to provide measures of listener knowledge and satisfaction.

## Sampling notes

The quantitative research for the evaluation was conducted using a survey administered to frequent radio listeners in the Central Province of Kenya, one of iNooro FM's largest markets. ${ }^{3}$ Respondents were organized into a treatment and a comparison group. The treatment group, or those exposed to the radio campaign, consisted of iNooro listeners. For the purposes of the survey, iNooro listeners are classified as those who listen to iNooro FM daily, during the hours between 7 pm and 8 pm . The comparison group of non-listeners was composed of respondents who listen daily to radio stations other than iNooro FM between the hours of 7 pm and 8 pm . Respondents were selected randomly, with quotas set to ensure a balance between urban and rural listeners and across age categories. All respondents were above the age of 18 and had not participated in any market research surveys in the previous six months. Members of Wananchi SACCO, which was administering a financial education program in the same region at the time of the research independently of the ICE-K project, and listeners of Citizen Radio were also filtered out of the sample in an attempt to control for exposure to insurance education.

## Baseline to endline and treatment to control comparability

Since the survey did not interview the same respondents at endline as it did at baseline, 4 it was important to examine the comparability of the treatment and comparison groups as well as that of the baseline and endline groups for the purposes of assessing impact in the treatment group. Propensity score matches assess the probability of respondents participating in the treatment and then matches them to non-participants in the comparison group based on this probability (Khandker, Koolwal, \& Samad, 2009, p. 53). A propensity score matching analysis of the two groups on a variety of key demographics suggests that the distribution of the propensity scores for the comparison and treated groups overlap. The analysis of the endline/comparison test also suggests that the distribution of the propensity scores for the comparison and treated groups overlap. The technique supported the causal inferences later made by the regression analysis because it allowed the demonstration of the degree of randomization of the study. In other words, these results show that the baseline/endline and comparison/treatment groups are similar based on the descriptive analysis and can be compared for the purposes of impact assessment. Further details of this analysis can be found in Annex 1.

## Qualitative Research

Qualitative research for the evaluation consisted of four focus group discussions (FGDs) with a total of 33 iNooro listeners, consisting of both urban and rural listeners, and two in-depth interviews. The qualitative research targeted iNooro listeners to provide insights into the quantitative survey results, and to provide information on listener satisfaction with the radio campaign. In order to include both urban and rural listeners, FGDs were held in the main town of Nyeri, an urban area, and in the small town of Othaya, a rural location. Participants for the FGDs were filtered to ensure that they were frequent

[^2]listeners of iNooro and that they listened at the time when the radio campaign was presented. Listeners of Radio Citizen were also removed to exclude anyone who may have heard the campaign on both stations. Anyone who had taken part in market research during the past six months was also filtered out of the sample. Participants for individual interviews were FGD participants who demonstrated a strong knowledge or interest in insurance and whose ideas and opinions exemplified the behavior change sought by the campaign.

The FGD guides were designed to elicit information on the knowledge, skills, attitudes and behavior of participants around money management and insurance. A participatory rapid appraisal tool was also used to try to understand what institutions and people participants trusted and why, in order to compare their general level of trust to trust of insurance companies. Finally, participants were asked about their general media preferences and their reactions to the ICE-K campaign on iNooro. Several individual interviews were conducted with positive deviants, or individuals whose responses during the FGDs indicated that they had adapted the behaviors that the campaign is trying to encourage. These interviews probed more deeply on questions about insurance found in the FGD guide, and allowed the interviewees to express themselves more fully and permitted the interviewer to ask more follow-up or probing questions. A socio-economic profile tool was administered to collect demographic information on participants and their households, their economic activities, and indicators of relative wealth.

## Limitations of the Study

The study examines the impact of a national insurance education radio campaign on the knowledge, skills, and attitudes of listeners around insurance. The study has some limitations which affect what conclusions can be drawn from the data.

The evaluation focused on the radio campaign on one station, iNooro FM, due to constraints on time and resources. Therefore, the results can be generalized to listeners of the iNooro campaign but cannot be taken as indicative of the impact of the campaign overall.

## Study duration

The research for this study is based on a theory of change in which behavior change is a long-term result. As a result, it is unlikely that behavioral changes in individuals based on their exposure to the campaign would be found within the timeframe of the impact assessment research. Changes in awareness and knowledge would be more likely outcomes, followed by changes in skills and attitudes. Therefore, the study cannot measure the full impact of the radio campaign in terms of the long-term individual outcomes, notably insurance uptake.

## Data collection

Difficulties in collecting data from participants over time are common, especially when working with low-income households. For this study, data was gathered from different groups at baseline and endline. These groups differ on some common demographic variables, such as income, employment, and level of education. The econometric model used to measure the impact of the radio program controls for these differences. However, differences in the sample groups create some limitations when analyzing the data.

## Comparison and treatment groups

A screener was used to filter iNooro listeners and those that do not listen to iNooro into treatment and comparison groups. The campaign played on a business program on iNooro FM, and listeners that choose to listen to this program, and subsequently to "A Friend Indeed," may differ from those who choose to not listen to the iNooro FM's business program.

Finally, the radio program's impact is assessed as a whole, rather than measuring the effect of individual elements of the program. There is no way to determine if specific episodes or formats were more successful at improving consumer education levels than others.

## RESULTS

## PARTICIPANT DEMOGRAPHICS

Demographic information on the participants was gathered in the survey for quantitative research participants and using a socio-economic profile (SEP) tool for the qualitative research participants. Demographic information is presented here to provide a representation of the sample as a whole.

## Demographic Data on Quantitative Research Respondents

Demographic data collected from respondents to the quantitative survey revealed some differences between the baseline and endline samples. However, as mentioned above, the analysis included and controlled for differences in these variables. The demographic profiles of the samples are discussed below.

## Individual demographics

The samples were first filtered to correct for inconsistencies in the screening process during data collection. Of 235 individuals included in the final baseline sample, $57.9 \%$ were females and $42.1 \%$ were males. The sample ranged in age from 18-76, with an average age of 35.7 years. About $57 \%$ of the sample was married or living with their partner, $33.2 \%$ were single, $3 \%$ were divorced or separated, and 6.8\% were widowed.

Of the 299 endline respondents, $47.5 \%$ were females and $52.5 \%$ were males. The age range, 18-80 years, spanned slightly older than the baseline group, and the average age was 34.2. About $60.5 \%$ of endline sample respondents were married, $32.8 \%$ were single, $3 \%$ were divorced, $3 \%$ were widowed, and $0.7 \%$ refused to answer.

On the whole, the endline group reported slightly higher education levels. However, the largest portion of each sample, about $24.7 \%$ for baseline and $43.8 \%$ for endline, described their highest level of education as completed secondary. This level corresponds to 12 years of education. Only $3 \%$ of baseline and $1 \%$ of endline respondents had no education.

Survey respondents were primarily the heads of their households for both samples. Respondents who were not the heads of their households were spouses, parents, close relatives, non-relatives, and children of the head of household.

## Household demographics

The baseline sample was slightly more urban than the endline, with $53 \%$ of baseline participants living in cities against $49.8 \%$ at endline. The average baseline household had 4.2 members, but ranged from 1 to 12 members. On average, 1.7 of these members were children under the age of 18 . Endline households were slightly larger, ranging from 2 to 16 members with an average of 4.7 members. These households had, on average, 1.9 children.

The samples are similar, although not identical in employment status for heads of household. At baseline, most head of households (38\%) were employed as wage earners. About $30.2 \%$ were self
employed in the trade sector. At endline, about $31.8 \%$ were wage earners and $35.1 \%$ were self employed in trade.

To provide a comprehensive view of income, household earnings were measured in two ways. First, respondents were asked to choose a statement that best described their current level of consumption. Most of the sample appears to earn enough to meet basic household needs. At baseline, $52.1 \%$ of the sample agreed with the statement that "we have enough money for food and clothes and can save a bit, but not enough to buy expensive goods such as a TV set or refrigerator." Only $7.6 \%$ claimed they earned enough each month that they "can afford to buy whatever we want." By contrast, only $1.3 \%$ said household income was such that "we don't have enough money even for food."

The baseline sample differs slightly in distribution among income levels. However, the majority of endline respondents earn enough to satisfy their basic needs. Nearly $57.5 \%$ of this group claims they "have enough money for food and clothes and can save a bit, but not enough to buy expensive goods such as a TV set or refrigerator." About 12\% of the endline sample says "we can afford to buy whatever we want," up significantly from the baseline. No respondents stated that "we don't have enough money for food."

As a second measure of household income, respondents were asked to choose an income range that best reflects their monthly income. Adjusted for non responses, the quartiles fall into the following ranges at baseline: 25\% earn 4,681-9,360 Kshs (USD \$55.45-\$110.89) or less, 50\% earn 9,360-14,040 Kshs (USD \$110.89-\$166.34) or less, and 75\% earn 21,060-30,420 Kshs (USD \$249.51-\$360.40) or less. At endline, results were similar; 25\% earn 4,680-9,360 Kshs (USD \$55.45-\$110.89) or less, 50\% earn 9,360-14,040 Kshs (USD \$110.89-\$166.34) or less, and 75\% earn 14,040-21,060 Kshs (USD \$166.34$\$ 249.51$ ) or less, though $75 \%$ of women in the endline sample earned 21,060-30,420 Kshs (USD \$241.41 - \$348.70) or less.

## Figure 4: Self-Reported Relative Consumption Level for Baseline and Endline

 Groups

## Purchase/Use of insurance

The sample includes questions regarding previous use of insurance products. Respondents were questioned on the types of insurance the household had purchased and used. Households that had used insurance, but never purchased a policy, likely obtained coverage from their employer or other external source. Respondents were asked about both purchase and use of insurance products because some respondents are likely to receive mandatory insurance coverage through their employer, rather than choosing to purchase insurance independently. Respondents with mandatory insurance policies may use the policies without being aware of how the policy was purchased or considering it an autonomous choice.

Nearly $29.4 \%$ of the baseline sample respondents say they have purchased some type of insurance, and $26.5 \%$ say someone else in their household has purchased insurance. Slightly less of the endline sample respondents, about $27.1 \%$, have purchased insurance. Nearly $30.4 \%$ of endline respondents say someone else in their household has purchased insurance. Of the respondents who had purchased insurance themselves, $54.3 .6 \%$ in the baseline and $62.1 \%$ in the endline also lived in a household where insurance had been purchased. Likewise, $66.7 \%$ of baseline and $69.8 \%$ of endline respondents who had not purchased insurance themselves reported that they also lived in a household where no one else had purchased insurance. This indicates that people that have purchased an insurance product are more likely to live in a household where someone else has purchased an insurance product than people who have not purchased an insurance product.

This contrasts with the findings of the Finaccess national survey of financial access in Kenya, which found that only $6.8 \%$ of the adult population of Kenya used a formal insurance product (Finaccess, 2009). However, the Finaccess survey sought data on adult individuals rather than household consumption of insurance. The higher figures found in the current research may be attributable to the fact that insurance is primarily a household product, consumed by 3-4 adults per household. Also, Central Province is, outside of Nairobi, the most highly banked province in the country. Exposure to formal financial products through banks and local SACCOS, many of which originated in Central Province, may lead the population to be more favorable towards other formal financial services such as insurance ${ }^{5}$.

For both baseline and endline, health insurance was the most common type of policy purchased. Automotive and life insurance were the second and third most common types of insurance purchased, respectively. Figure 5 shows the percent of total baseline and endline respondents that have used insurance. Figure 6 shows the percent of total baseline and endline respondents that have purchased insurance.

[^3]Figure 5: Types of Insurance Used by Households


Figure 6: Types of Insurance Purchased by Households


## Demographic Data on Qualitative Research Respondents

Individual demographics
Of the 33 individuals included in the focus groups, 15 participants (45.5\%) were female and 18 participants (54.5\%) were males. The group ranged in age from 20-60 years with a mean of 34.9 years6. Twenty-one individuals (63.6\%) were married or living with their partner, 12 individuals (36.4\%)

6 One individual in the focus group did not provide an age; mean calculations are based on a sample size of 32 .

were single, and no individuals identified as divorced/separated or widowed. Similar to the quantitative sample, the largest segment of the focus group (24.2\%) had completed secondary school. Only 2 individuals reported that they had no education.

## Household demographics

Forty-eight and one-half percent of households represented in the focus group discussions were located in rural areas and $51.5 \%$ were located in urban areas. The number of household members ranged from 1 to 8 , with a mean of 3.9 members $^{7}$. Households had, on average, 1.61 children, with a range of 0-4. The main sources of income for the head of the household were trade self-employment ( $48.5 \%$ ), wage employment (30.3\%), services and production self-employment (9.1\%), livestock breeding (6.1\%), agricultural production (3.0\%), and pension (3.0\%).

Seventeen respondents (51.5\%) were the heads of their households. The remaining 16 individuals ( $48.5 \%$ ) had the following relationship to the heads of their households: spouse ( $68.8 \%$ ), grandparent ( $6.3 \%$ ), close relative ( $18.7 \%$ ), and child ( $6.2 \%$ ). Heads of household were $82.4 \%$ male and $17.6 \%$ female.

For the spouse of the head of the household, the main sources of income were trade self-employment (42.4\%), wage employment (30.3\%), livestock breeding (9.1\%), services and production selfemployment (3.0\%), and agricultural production (3.0\%). Four spouses of the head of household (12.1\%) were not employed.

Qualitative respondent households were slightly smaller than either baseline households or endline comparison households. The households of FGD participants counted fewer heads who were wage earners and more who were engaged in trade self-employment.

## Use of financial institutions

Overall, the FGD members were banked, and only two members of these respondents claimed to not use any type of formal financial institution. The majority of participants used commercial banks, while a minority used microfinance institutions, and a handful used non-banking financial companies (3.03\%) ${ }^{8}$, perhaps because the high penetration of SACCOs in the Central Province has led to relatively high levels of financial inclusion. As listeners to a business program, the FGD participants may also be more interested in financial products and services.

When asked whether the household had any outstanding loans, the majority said they did not. Of the 6 participants who had outstanding loans, most had taken that credit with a bank, while a few used savings and credit cooperatives known as SACCOs.

The majority of participants had savings. Four different types of savings institutions were used. The majority used banks, a minority used SACCOs, and some isolated individuals used microfinance institutions, or another form of savings institution. A small minority used two types of savings

[^4]institutions. Most participants (66.67\%) were members of a ROSCA (commonly referred to in Kenya as a "merry-go-round"). A minority participated in at least 2 ROSCAs, and 1 participant was a member of 3 ROSCAs.

Just fewer than half of the participants answered that they held an insurance policy. The great majority of insurance clients held health insurance policies and one participant held an auto/motorbike insurance plan. Premiums on insurance policies ranged from 1,920 to 7,000 Kshs (USD \$22.75-82.93).

## Observations on existing financial management behaviors

In addition to asking qualitative participants about insurance, focus groups with iNooro FM listeners in rural and urban locations in Central District assessed their personal financial management knowledge, skills and attitudes, and their knowledge of and access to other risk management strategies. The most important questions focused on financial decision making, savings and budgeting. The purpose of gathering this type of data is to provide a portrait of the comfort level of participants in managing their money, in order to contextualize their insurance awareness, knowledge, and behavior. Analysis of the focus group data revealed that listeners had only moderate financial management knowledge, skills and attitudes, although most had some experience with formal financial services. This data is offered in order to further contextualize the responses of participants concerning insurance.

## Financial decisions and decision making

Participants were asked to identify the main financial decisions in their household, and who made them. The purpose behind these questions was to understand the process that a family might go through when choosing to make an important purchase, such as an insurance policy. Understanding how consumers decide about making large purchases may provide indications of ways to market insurance to people.

The most important household financial decisions, according to participants, were educational expenses, farming costs, and business investments. Decisions about educational expenses included choices about which school to send children to. When making decisions between public and private schools, this decision comes down to how much money to spend on the education of each child. Decisions about farming included the purchase of farmland. Business investment decisions concerned capital purchases, such as buying a motorcycle to start a boda boda (motorcycle taxi) service. Many participants felt that the budget for food was an important expense, but probing questions revealed that they did not feel that these decisions were of significant importance.

Answers were more uniform about who makes, or should make, large financial decisions. Three out of the four focus groups came to the conclusion that heads of households, especially males, tend to have more say in large financial decisions. This conclusion was disputed in one focus group, in which participants argued that husbands and wives make decisions about money jointly, and two focus groups agreed that women are, or should be, consulted. One group of urban participants concluded that the man of the house is solely responsible for large financial decisions. By contrast, one rural group agreed that married couples decide together. This tends to contradict the notion that city dwellers are more progressive in their gender attitudes than rural ones.

## Budgeting

In all of the FGDs, there were participants who reported doing some budgeting. For the most part, this amounted to planning for monthly bills like utilities, school fees, and rent. Food, transportation fares, and mobile phone airtime were budgeted on a daily or a weekly basis. In one rural FGD, a participant noted that some expenditures, such as purchases of meat, are viewed as luxuries to be planned for. Participants reported mixed success in meeting their budgets, and that the most urgent necessities are the ones they take care of first.

## Savings

Questions about savings focused on saving money, participants' experience saving money for the past six months, and if they have plans for their saved money. Participants also volunteered information on their knowledge of different savings services, including the relationship of insurance to savings.

Their responses tended to focus on the location of their savings, and their reasons for choosing those locations. Nearly all participants expressed a positive attitude towards savings. Reasons for saving included preparing for emergencies, making capital investments in business or farming ventures, and paying school fees, reflecting the same priorities mentioned above. Some rural participants equated insurance with savings. This will be discussed further under the subheading "Insurance literacy."

The majority of respondents in each focus group professed to be active savers. Rural participants favored saving in SACCOs, many of which cater to farmers, and banks. Rural business people also reported using deposit collectors ("agents") to make deposits in their banks or SACCOs without having to travel and wait in line. Other rural participants favored ROSCAs for their convenience, such as this participant in a rural FGD:

Sometimes it is really hard to save money in banks, even [for] those who are employed or
business people. So we have merry-go-rounds. It's one way of saving.

Many participants also saved in mutual welfare associations, particularly men and urban residents. Some women also saved at home, in boxes or piggy banks, but this strategy lacked security:

I used to have one, but my husband broke it. He didn't even tell me he was doing it, and he took all the money.

Perhaps because of this, husbands and wives do not tend to discuss their savings. Instead, according to participants in two of the FGDs, partners save separately without informing one another.

When asked about their savings plans, many participants showed that they possessed the skills to save, and that they incorporated those skills into their money management behavior. One rural female participant described her savings plan:

I save 50 shillings (USD \$0.59) a day, so at the end of the school year, that is 18,000 shillings
(USD \$213.25). At the end of the year, my child can go to school.

Because this was an impromptu statement in the FGD, it is likely that this participant possesses the skills to save in the way that she describes. Other participants also showed an understanding of savings strategies, such as reducing discretionary spending. An urban participant described strategies the selfemployed may use to save money:

## When business is high, you save a lot of money to take care of the times when business is low.

In every FGD, some participants showed a strong knowledge of savings strategies, which may reflect the fact that the respondents were frequent listeners to a radio program on business. This also does not mean that this knowledge was evenly distributed among FGD participants.

## RADIO CAMPAIGN IMPACT RESULTS

In analyzing the quantitative survey data, a two step process was used to determine the radio program's impact on listeners. First, matching was done by nearest neighbor to measure the utility of the comparison group as a counterfactual. To measure the "closeness" between individuals, propensity score matching was used. This analysis demonstrated that the comparison group was an effective counterfactual.

Table 4: Average Respondent Scores

| Measure | Comparison <br> sample | Baseline <br> treatment <br> sample | Endline <br> treatment <br> sample |
| :--- | ---: | :--- | ---: | :--- |
| Risk knowledge | 7.89 | 7.49 | 8.29 |
| Insurance <br> knowledge | 16.30 | 15.63 | 17.43 |
| Awareness | 4.00 | 3.23 | 5.29 |
| Attitudes | 6.45 | 6.52 | 6.67 |
| Trust | 2.15 | 2.41 | 2.46 |
| Behavior | 0.85 | 0.73 | 1.16 |
| Total score | 38.16 | 37.05 | 42.18 |

In the second step, the radio program's impact was assessed based on the probability of exposure to "A Friend Indeed." A basic regression was used to compare the impact for probable listeners and non-
listeners. Survey results were analyzed to derive an overall score on all the survey questions, indicating the general differences between iNooro listeners and non-listeners on all key measures. The survey analysis also produced scores for all participants by question category, illuminating those specific areas where iNooro listeners scored higher than non-listeners. This provides a more precise assessment of the impact of the campaign. The average scores for the comparison sample and the treatment group at baseline and endline are shown in Table 4, but note that the regression analysis revealed that the only significant differences were in insurance awareness and insurance knowledge scores.

The radio campaign had an impact on the scores of treatment participants when all survey questions are taken together. Treatment group participants, who were iNooro evening listeners, were shown to score $6.2 \%$ higher than comparison group participants, or who were frequent listeners of other stations. Furthermore, this difference was shown to be significant to the $2.5 \%$ level.

The radio campaign had the largest impact on differences in scores on awareness and knowledge of insurance. Those that were likely to have listened to the radio campaign scored $18.6 \%$ higher on measures of awareness and $7.5 \%$ higher on knowledge of insurance than non-listeners, both of which were statistically significant findings. The data suggest that the radio campaign was the likely source of the higher scores registered by listeners over non-listeners.

Focus groups with iNooro FM evening listeners in an urban and a rural location in Central Province assessed the financial management knowledge, skills and attitudes of participants, their knowledge of insurance, and their satisfaction with the ICE-K radio campaign. Analysis of the focus group data revealed that listeners had moderate financial management knowledge, skills and attitudes. Most had some experience with formal financial services. The overall knowledge of insurance was low to moderate, and the overall trust of insurance companies was high. Questions on program satisfaction showed that listeners had a positive response to the program, and many listeners felt it was informative and beneficial. A small number of participants reported purchasing insurance as a result of listening to the program.

## Recall of Program Content

In order to measure their recall of the 13 episodes of "A Friend Indeed," survey respondents were questioned about the content of the radio program. The findings serve two purposes. First, they allow the researchers to confirm that listeners are accurately reporting their listening status, and that the program did indeed reach its intended audience. Secondly, these questions provide information on the formats and topics that were most memorable to listeners, offering insight for future radio program design.

Listeners were asked to name a topic of at least one segment of the program. The analysis found that $19.9 \%$ of the sample was unable to do so, and $2.1 \%$ provided an incorrect answer. Most listeners who were unable to accurately name a topic of the radio program were infrequent listeners, suggesting they accurately reported how frequently they listened to the program. The remaining $78 \%$ accurately provided at least one topic. The most commonly recalled topics were property insurance, the benefits and importance of insurance, claims, types of policies, and risks. Listeners were less likely to identify where to buy insurance, terms of payments, health insurance, how to get insurance, and life insurance as
topics of the radio program. Table 5 shows responses to the question, "Can you name a topic that was covered in an episode of 'A Friend Indeed'?"

Table 5: Listener Recall of Radio Program Topics

| Topic | Number of <br> respondents | Percent of <br> respondents |
| :--- | ---: | ---: |
| Property insurance | 33 | 18.2 |
| Benefits and importance of <br> insurance | 27 | 14.9 |
| Claims | 15 | 8.3 |
| Types of policies | 14 | 7.7 |
| Risks | 13 | 7.2 |
| Personal accident | 10 | 5.5 |
| How insurance operates | 10 | 5.5 |
| Life insurance | 6 | 3.3 |
| How to get insurance | 6 | 3.3 |
| Health insurance | 3 | 1.7 |
| Terms of payment | 2 | 1.1 |
| Where to buy insurance | 2 | 1.1 |
| Unable to answer | 36 | 19.9 |
| Wrong answer | 4 | 2.2 |
|  | $\mathrm{~N}=181$ | 100.0 |

Listeners were also questioned regarding the format of the radio program. The drama element of the program was most commonly recalled by listeners. Next, listeners accurately identified the introduction and conclusion as elements in every show. Expert analysis was also memorable to many listeners. Only $2.2 \%$ of listeners recalled street interviews as a prominent part of each episode. These findings will be discussed further in the Recommendations section. Only $1.1 \%$ of iNooro listeners were unable to name a segment of the program. Not surprisingly, these iNooro listeners reported that they had not listened to any episodes of "A Friend Indeed."

## Awareness of Insurance and Risk Management Techniques

## Survey results on awareness

A total of 8 awareness questions were used to measure whether the participant had been exposed to insurance terms and various types of insurance products. Correct responses to these 8 questions were aggregated for each respondent to provide an overall awareness score.

The radio campaign was the likely source of difference in scores for overall awareness of insurance between the treatment and comparison groups. The regression analysis showed that iNooro evening listeners were likely to score $18.6 \%$ higher in overall awareness of insurance terms than non-listeners. This difference in awareness scores is both substantial and statistically significant at the 5\% level. This suggests that the radio campaign "A Friend Indeed" was associated with the substantially higher awareness scores, and that exposure to the program had a positive impact on them.

Scores for awareness of insurance according to survey measures were also found to increase with the age of participants, but scores were shown to be lower for participants who engaged in livestock breeding. It is logical that older participants would have higher scores, because of the higher possibility of exposure to insurance marketing or information over time. It is not possible to explain the lower scores by livestock breeders based on the survey results, however.

## Focus group awareness findings

The knowledge of FGD participants about insurance terms was mixed. When asked to define insurance, every focus group defined it in terms of its function. Three out of the four groups related insurance to risk. For example, in one of the urban FGDs, the participants stated:

Insurance is security. A cover against risks.

The one focus group that did not use the term "risk" defined insurance as "what covers you in case of emergencies." They also identified several types of cover, including education, property, health and life. Participants in other focus groups also mentioned auto and theft cover. In a rural focus group, one participant described how insurance functions in this way:

If your house burns down and you have insurance, and my house burns down and I am not insured, you get compensated and you can build again. I wouldn't be able to do that.

This description of insurance is very close to one presented in an episode of the ICE-K campaign, though in that episode it was a business that was consumed by fire. It is possible that the participant was drawing on his memory of the program in this instance. If not, it at least indicates that the story resonates with some listeners in the Kenyan context. Overall, participants were informed about insurance and could relate it to the risks that they faced or that others close to them had experienced.

Participants were then asked to identify the same terms that were presented in the survey. These terms are presented in Table 3, along with the rate at which they were recognized in the FGDs. Typical
answers from the focus groups are listed to illustrate how participants defined the terms. Terms that most groups understood were "premium," "policy," "beneficiary," and "claim," as shown in Table 3, with an example of a correct response for each term as illustration. Terms that most groups did not understand were "eligibility," "benefits," "exclusion," "deductible," and "waiting period," as listed in Table 4 , with a sample of an incorrect response given by a participant.

## Table 6: Terms Correctly Identified by FGD Participants

| Term | Typical answer |
| :--- | :--- |
| Premium | "Amount of money you agree with the insurance company to pay for a <br> period (of cover)." |
| Policy | "The cover that you are buying." |$|$| Beneficiary | "When filling out the form for life insurance, beneficiaries are the people <br> who get paid after you die." |
| :--- | :--- |
| Claim | "If I have insurance and something happens, a claim is the amount of <br> money I ask (the insurance company) to give me." |

## Table 7: Terms Incorrectly Recognized by FGD Participants

| Term | Typical answer |
| :--- | :--- |
| Eligibility | "Those things that are eligible." |
| Benefits | "The extra things that you get from insurance." |
| Exclusion | "I think this is the person who cannot be covered." |
| Deductible | "The money deducted automatically from your account to go to the <br> insurance as premium." |
| Waiting <br> period | "The time you wait between claiming the money (from the insurance <br> company) and getting the money." |

Overall four out of nine of the terms were correctly identified by most of the focus groups. This represents a moderate level of knowledge of insurance terms, and suggests that participants had the
greatest difficulty in identifying terms which may be used in other everyday contexts. This situation may be correctible through repeated exposure to educational messages.

## Insurance Literacy

Overall insurance literacy was composed of two measures assessed using a total of 45 questions in the survey. The first, knowledge of insurance, was measured using 32 questions. These questions assess each respondent's knowledge of specific insurance terms, types of insurance offered, and basic facts related to insurance coverage. The second part, knowledge of risk management techniques, was comprised of 13 questions asking respondents to identify techniques for managing risks. While questions on insurance knowledge required simple recall of facts, questions on risk management demanded an analysis of situations and options from respondents. It is anticipated that respondents would require significant exposure to the intervention to develop such analytic skills, which may not have occurred during the limited time that the program aired.

Following the theory of behavior change, these findings are not surprising. The ability to correctly define and identify insurance terms and policies, as the insurance literacy questions required, logically precede the ability to respond to questions requiring the analysis of risk situations and the application of knowledge of different risk mitigation strategies. Exposure to "A Friend Indeed" was associated with higher insurance knowledge scores, as discussed in the first section, and this is likely a first step towards overall insurance literacy.

## Survey results on knowledge of insurance

Treatment group participants were shown to score higher than comparison group participants in overall measures of insurance knowledge. The regression analysis showed that treatment participants scored $7.9 \%$ higher than comparison group participants. Moreover, this difference in their scores was significant at the $2.5 \%$ level. The higher scores that were attained by treatment group participants, as iNooro listeners, are associated with their listening status. The campaign's information about insurance terms and policies can therefore be associated with exposure to the messages of the "A Friend Indeed" radio campaign. Repeated or longer exposure may result in higher or more significant scores on the part of listeners.

## Survey results on knowledge of risk management

Analysis of the survey data showed no significant difference in the scores of treatment and comparison group members in their knowledge of risk management. Correctly responding to questions about risk management requires a higher level of analytic ability than responding to questions about insurance terms or policies, which are essentially a test of recall. More exposure to the intervention may be necessary for treatment participants to demonstrate gains in this area.

The employment of certain participants did coincide with higher scores on the measures of risk management knowledge, including wage employment; self-employment in trade, services or production, and agriculture; livestock breeding; or living on pension income. It raises the question as to whether participants in these employment categories are experienced in certain risk management situations which resulted in their higher scores on these measures.

## Focus Group insurance literacy findings

Focus group data help to illustrate the attitudes that audience members held about risks and insurance. When asked specifically to define "risk," all focus groups had participants who showed a general understanding of the term. In half of the focus groups, participants identified risk using terms that were used in the radio campaign. For example, in a rural focus group, risk was defined as "things happening without you expecting them to happen." When asked about the risks that they face, the same participants offered a list of risks, some of which are insurable, such as accidents, defaulting on loans, crop failure, fire, theft, and bankruptcy.

Participants first revealed their attitudes towards insurance when they were asked about savings. In the two rural focus groups, participants compared insurance with savings and debated the relationship, such as in this excerpted discussion between participants in the second FGD:

It's not saving because you can't withdraw.

I think it's saving because you can use the money in emergencies.

Insurance cover is not savings, it's an obligation.

In a way, in a situation where you have an emergency and they pay for you, it's like savings.

Insurance is an expenditure; imagine if you insure your house and you never get a fire, or pay
health insurance and never get sick. You don't benefit from your money.

What is noteworthy about this exchange is that the participants had enough knowledge about insurance to engage in an informed debate, with little instigation from the moderator. This suggests that they have enough of an understanding about how insurance functions to debate its merits and compare it to other financial services, specifically savings. Additionally, some view insurance in the same positive way as they view saving money, which nonetheless suggests that some participants did not fully understand how insurance works.

## Attitudes towards Insurance, Savings and Risk Management

Twelve statements in the survey focus on the respondents' attitudes towards savings, purchasing insurance, risk management techniques and insurance products. Quantitative survey responses were assessed for their desirability in relation to the learning objectives of the campaign, reflecting healthy attitudes towards these topics. For example, respondents who agreed or strongly agreed with the statement "Saving requires discipline, sacrifice and savings goals" were given a score of 1 for having a desirable understanding of saving that would result in realistic savings habits.

Evening iNooro listeners did not score higher than non-listeners on measures of realistic attitudes following the airing of "A Friend Indeed.". Other variables did seem to negatively impact differences in attitude scores at the $1 \%$ significance level, namely having more adults in the household and engaging in livestock breeding. The number of children in the household, by contrast, positively impacted scores on
realistic attitudes at the $1 \%$ level. It is possible that these results were due to factors not measured by the survey.

These results are not surprising considering that the theory of behavior change identifies attitude improvement as a longer term change, typically following improvements in knowledge and skills. It appears that simple exposure to the insurance education messages in the length and duration possible in the radio campaign was not sufficient to improve desirable attitudes towards insurance, savings and risk management.

## Focus group attitudes findings

When explicitly asked their opinions of insurance, participants were divided. Those with a positive view of insurance tended to be satisfied because their policies functioned as they anticipated they would. For example, a participant with health insurance in a rural FGD explained what he liked about his policy:

If we are under a lot of stress, like if my wife has had surgery, I no longer need to run to relatives (for money). It's covered.

Participants were satisfied with insurance when it worked the way they expected. When satisfied, they did not explain their situation at length. Participants with ambivalent or negative views of insurance described their experiences in longer narratives. They had diverse reasons for their complaints, including lengthy waits for the payment of benefits after a claim has been made, perceived loss of premiums paid without a claim during the cover term, and unscrupulous brokers. Rural participants complained much more about brokers than urban ones. For example, one rural participant had this to say about brokers:

They use very complicated language in the policy; to a layman it's hard to understand... When you make a claim, they ask you to look at your policy and say that you are not eligible for the claim. I think the issue here is marketing, the agents just ask you to sign and they do not explain the real policy.

This complaint underscores the fact that when consumers have a negative experience with an insurance product, they tend to be very resentful. This resentment comes out in negative stories about their experiences, which spreads negative views about insurance among their family and friends. Positive stories do not tend to receive as much attention. This highlights the need for insurance companies to better inform their customers to prevent dissatisfying policyholders.

Not all of the experiences of participants were positive, leading to mixed opinions about insurance generally. Negative experiences, often tied to a lack of knowledge and understanding about insurance, contributed to the negative attitudes about insurance that some participants held.

## Trust

In order to compare the general trust level of treatment and comparison respondents on their trust of insurance companies, 7 statements in the survey measured levels of trust towards banks, local NGOs,
government officials, neighbors, insurance companies, SACCOs, and medical staff, and 2 statements measured levels of trust towards others in general regardless of their relationship to the respondent. A 5-point Likert scale was used to assess trust scores. The scale ranges from a value of 1 , or "Strongly Agree," to a value of 5, or "Strongly Disagree." A regression analysis was run on the combined statements of trust towards others and separately on each of the 7 other individual trust measures.

The analysis found no significant difference in the measures of trust between treatment and comparison group members. Therefore, it is unlikely that there is an association between exposure to the radio campaign and changes in trust towards any individual or organization, including insurance companies. While the radio campaign presented several dramatic scenarios in which characters had positive interactions with insurance companies, it is possible that this exposure was not enough to cause them to change their feelings about insurance companies.

It is also possible that listeners were exposed to negative news stories concerning the insurance industry. Specifically, a recent proposal by the National Hospital Insurance Fund (NHIF) to change the rate structure of premiums paid by workers would increase rates across all income levels. This move was successfully delayed by a court case brought against the NHIF a parastatal agency formed by the Ministry of Health in 1966, by the Central Organization of Trade Unions (COTU). The rate changes and court case drew a great deal of attention in the press in mid-2010. The lack of significant differences in scores of treatment and comparison group members on trust of insurance companies may be the result of a greater exposure to the proposed NHIF changes and the court case through the business news program during which the campaign was broadcast. Because most of the respondents in from households which own insurance actually owned health coverage, and many may have owned a NHIF policy, it is likely that this affected trust attitudes towards all insurance companies.

A summary of the analysis of all trust measures can be found in Annex 4.

## Focus group trust findings

FGD participants were asked to rank how much they trusted a similar list of institutions and people in Kenyan society. The purpose behind asking about trust was to investigate the apparent low levels of trust that were recorded in responses to the baseline survey. Overall, the most trusted institutions were radio stations, followed by banks, SACCOs and insurance companies, churches, mobile companies, NGOs, and bus companies. Radio stations were trusted because they provide a diversity of information, are close to people, and are accountable for false or misleading statements. Banks and SACCOs were trusted primarily because they are secure, but banks are viewed as slightly more established than SACCOs which are a more recent financial institution in Kenya. Insurance companies were for hedging against risk, and because, in the words of one participant,

Even banks insure their money in insurance firms, so it shows they are trusted.

Churches were ranked relatively low in trust, largely because of recent high-profile scandals involving preachers who defrauded worshippers for their own monetary gain. Mobile phone companies were praised for the easy communication they provide, but many participants were dissatisfied with their coverage. NGOs were praised by some for helping communities, but some participants complained that
their operations were not transparent. Bus companies were rated as the least trustworthy because participants felt that they are unreliable despite riders' dependence on them.

Trust levels for insurance companies were not as strong as they were for other financial institutions, such as banks. This is a challenge that insurance companies will have to meet.

## Insurance Behavior

Questions about behavior addressed the purchase and use of insurance products, using 14 questions. The survey analysis found that evening iNooro listeners saw a $20 \%$ increase in scores over non-listeners. The radio program's impact on this measure was not statistically significant, which was expected. Changing this behavior, or any purchasing behavior, is substantially more difficult than improving awareness or knowledge. In addition, behavior changes may not occur immediately following exposure to an intervention, and may require repeated exposure to the program over an extended period of time. Because the evaluation occurred shortly after the program aired, it would be expected that immediate changes in this measure following the radio program would be slight, at best. The findings support this assumption.

## Focus group behavior findings

Qualitative research participants were also asked about personal insurance use, and they revealed that previous negative experiences with insurance policies or providers may reduce an individual's interest in insurance. These may be genuine negative experiences, such as dealing with a deceitful broker, or based on a misconception about insurance products, such as not understanding the terms and conditions of a policy. Regardless, these negative experiences may explain the reduced interest in insurance among non-listeners, especially in isolation of the radio program's positive message.

The qualitative research found that all of the focus groups had participants with experience in using insurance. The most common cover held by participants was health, and in most cases they held policies with the NHIF. Coverage with NHIF is mandatory for government employees and is available on a voluntary basis for residents meeting age and employment criteria. Other forms of insurance that participants had experience with were motorcycle, life, and education. A rural focus group member described the benefits of motorcycle cover:

In case of an accident and you are not in the wrong, depending on your policy, (the insurance
company) will repay you. If it is a third party cover, it also pays the passenger.

This participant, who operates a boda boda, or motorcycle taxi, shows an understanding of the conditions of coverage for motorcycle insurance. In his case, this knowledge was learned through use and perhaps interactions with an insurance agent or other vehicle insurance customers.

## Radio Campaign Satisfaction

At endline, 181 iNooro listeners were interviewed regarding their listening habits and satisfaction with the radio program "A Friend Indeed." Most listeners heard at least some episodes; only $6.6 \%$ reported that they listened to no episodes. The largest segment of endline listeners, about 51.4\%, reported
listening to fewer than 7 episodes. About $42 \%$ of listeners heard 7 or more episodes. Table 8 shows the frequency of listening.

## Table 8: Number of Episodes Heard

| Number of episodes | Frequency |
| :--- | ---: |
| No episodes | 12 |
| Fewer than 7 episodes | 93 |
| About 7 episodes | 41 |
| More than 7 episodes | 29 |
| All episodes | 6 |
|  | $\mathrm{~N}=181$ |

## Overall satisfaction

Most iNooro listeners had a positive response to the radio program. When asked about their opinion of the episodes of "A Friend Indeed" that they heard, about 47\% of listeners found the program "very pleasing." About 48.6\% found the program to be "somewhat pleasing." Only 4.4\% described the program as "neither pleasing nor unpleasing." No listeners found the program "somewhat unpleasing" or "completely unpleasing."

In addition, $53.3 \%$ of listeners found the information provided in the radio program to be "very useful" and $44 \%$ found the information "somewhat useful." Only $2.8 \%$ found the information "neither useful nor useless." No listeners described the program as "somewhat useless" or "completely useless."

Overall, $52.8 \%$ of listeners rated the quality of the program as "excellent." About $44.5 \%$ described the program as "good." Only $2.8 \%$ found the program "neither good nor bad." No listeners described the program as either "bad" or "terrible."

## Focus group overall satisfaction data

Participants in focus group discussions, who were all frequent listeners of iNooro FM, provided further information on their reaction to the radio campaign. These listeners showed an appreciation for the accessibility of the insurance education offered by "A Friend Indeed":

They told the story in a very simple way that even a very old person would understand.

I told my mother to listen to the program and get to know more about insurance.

This seems to indicate that the non-technical presentation of insurance was generally successful in piquing interest in the topic. Furthermore, this suggests that the program produced an effect beyond the listening audience which extended into the social networks of listeners.

FGD participants, who were all frequent listeners of iNooro FM, tended to have the highest recall of the program about property insurance. The producer also felt that this program received the most positive reaction from his informal conversations with listeners. This may be attributable to the large numbers of people who make their living through petty trade and other microenterprise activities, and an awareness that their inventory and other property are at constant risk for theft or destruction by fire.

While not everyone in the FGDs recalled hearing the campaign or its title, many participants expressed enthusiasm for the program after it was properly identified for them. Some listeners had discussed it with friends and family members, as indicated above, and others wanted to hear the campaign repeated.

The program ended even before I had listened to it keenly. Just when I gained interest, the program ended.

These comments are not necessarily representative of the entire audience for the ICE-K campaign, but they indicate that some listeners found it compelling enough to listen to again, or wished to listen to episodes that they had missed.

The fact that some were interested in hearing the campaign again indicates that the insurance consumer education was successful in presenting risk management and insurance in a way that was compelling to many listeners, and that a portion of the Kenyan public is open to further educational media campaigns on insurance.

## Focus group findings on post-campaign purchase of insurance

Results from the qualitative research provide further information about the listener insurance behavior after the campaign's broadcast. A number of listeners in the focus groups indicated that the campaign had an effect on them, and claimed that it had changed their attitudes and even their behavior:

Before [the program], I used to think insurance people were thieves.

I listened and I changed in that before the program I never used to take insurance people
seriously. After [hearing the program], I bought a cover, from CIC [life insurance] for 15 years.

Both survey and focus group responses suggest some changes in purchasing behavior following the radio program. A total of $56.4 \%$ of endline listeners surveyed indicated that they would either likely or definitely purchase insurance in the near future. It appears from the focus group responses that a small number of people intend to purchase insurance following the radio program.

## COST-EFFECTIVENESS ANALYSIS

The ICE-K project used an innovative approach to reach the Kenyan public with educational messages about risk management and insurance. As the first insurance education radio campaign of its kind in Africa, ICE-K succeeded in significantly increasing levels of awareness and knowledge of insurance among campaign listeners. This raises the question: what did it take to achieve these results? In order to answer this question, a cost-effectiveness analysis was conducted to assess the resources that were necessary to induce the reported changes in listeners. This analysis is intended to assist the designers of similar future campaigns in planning their approach. Additionally, the average cost of the campaign per listener was calculated to provide a point of comparison to the costs of other delivery channels for insurance education.

## METHODOLOGY

The cost-effectiveness ratio of the ICE-K project was measured by comparing the costs of the program to the estimated outcomes in terms of increases in awareness and knowledge.

## Cost Calculations

MFO tracked the costs associated with all phases of this project including the TOT, radio campaign, project evaluation, and process documentation. Only costs associated with the radio campaign and the TOT were included in this particular analysis, as the other project components did not contribute to listener outcomes.

The cost-effectiveness analysis was run using both the costs of the radio campaign alone and the combined costs of the campaign and the TOT because in the future, those designing similar campaigns may find that a TOT is not feasible or appropriate for their purposes. The approximate cost of the TOT was USD $\$ 57,000$ and the cost of the radio campaign alone was approximately USD $\$ 138,000$. This estimated radio campaign cost includes project management at MFO and AKI, the campaign design, script writing, program production, and broadcast airtime. Since the radio campaign cost estimate also includes initial project start-up costs, it may slightly overestimate the actual expenses associated with running the campaign.

## Estimated Magnitude of Outcomes

As discussed in the findings section of the report, the evaluation research showed that listeners registered higher scores than non-listeners on measures of awareness and knowledge. Specifically, listeners had awareness scores that were 19\% higher than non-listeners, and they had knowledge scores that were 8\% higher than non-listeners.

## Estimated Audience Size

Data from UNICEF and AudienceScapes were used to calculate the size of the audience that may have been exposed to the radio campaign. AudienceScapes has published reliable data on the percentage of Kenya's adults who use different media, including radio. In order to calculate the size of the audience, UNICEF figures were used as a basis for assuming the size of the adult population in Kenya. These data
were used to estimate the numbers of Kenyans who listen to the radio on a weekly basis, and the number who listen to the two stations used in the campaign.

The Kenyan adult population is estimated to be 20,150,000 (UNICEF, 2010). An estimated 89\% of Kenyan adults listen to radio at least once a week, suggesting a national weekly audience of about $17,933,500$ adults. Of these about $46 \%$ of people count Radio Citizen as one of their favorites, and $12 \%$ count iNooro as one of their favorite stations (Audiencescapes, 2010). Using these figures, the gross audience of Radio Citizen was estimated to be about $8,249,000$, and the gross audience of iNooro to be around $2,152,000$. Therefore, a total of nearly 10.5 million Kenyan adults may have been exposed to the radio campaign. This figure represents an upper bound estimate of the radio campaign audience. Since most radio listeners tune in only at certain times of the day, we calculated a lower bound estimate of the audience based on a conservative assumption that only $25 \%$ of the total audience would be tuned in during the evening campaign air times. The lower bound estimate of the audience is about 2,600,000.

## COST-EFFECTIVENESS FINDINGS

Tables 9 and 10 below summarize the data for the analysis for the cost-effectiveness calculations. Our analysis considered several ratios of cost-effectiveness, each based on specific set of assumptions.

## Cost-effectiveness of Radio Campaign Alone

The cost to raise the listener audience's insurance awareness scores by $1 \%$ was USD $\$ 7,238$. The cost to raise the listener audience's insurance knowledge scores by $1 \%$ was USD $\$ 17,190$. These estimates were calculated separately based on the same underlying costs. Therefore, they underestimate the costeffectiveness of the radio show in achieving the reported outcomes. Since both outcomes arose from the same underlying cost at the same time, we also examined the cost-effectiveness to raise the combined scores. The cost was USD \$10,187 to raise audience awareness and knowledge scores by $1 \%$.

## Cost-effectiveness of Radio Campaign and TOT

Once the costs of the TOT are added to the analysis, the cost to raise the listener audience's insurance awareness scores by $1 \%$ rose to USD \$10,232 and the cost to raise insurance knowledge scores by $1 \%$ was USD $\$ 24,302$. The cost to raise both scores by $1 \%$ was USD $\$ 14,401$. The data and analysis are shown in Table 9 below.

Our analysis clearly indicates that the Radio Campaign alone was the most cost-effective. However, it is not possible for us to calculate the value of the contribution of the TOT to the quality and effectiveness of the radio campaign. On a per listener basis, the cost-effectiveness would be very high, given the size of the radio audiences.

Table 9: Cost-effectiveness of Radio Campaign

| Cost estimates | Amount, in USD \$ |
| :---: | :---: |
| Radio campaign |  |
| MFO costs | \$51,267 |
| AKI costs |  |
| Inooro radio fee (air time) | \$30,015 |
| Radio Citizen radio fee (air time) | \$40,020 |
| Program production costs | \$16,216 |
| AKI subtotal | \$86,251 |
| Total radio campaign costs | \$137,518 |
| TOT costs | \$56,894 |
| Combined costs | \$194,412 |
| Outcomes achieved |  |
| Increase in insurance awareness score | 19\% |
| Increase in insurance knowledge score | 8\% |
| Increase in both scores | 27\% |
| Cost-effectiveness of radio campaign alone |  |
| Cost to raise insurance awareness by $1 \%$ | \$7,238 |
| Cost to raise insurance knowledge by $1 \%$ | \$17,190 |
| Cost to raise both scores by $1 \%$ | \$10,187 |
| Cost-effectiveness of radio campaign and TOT |  |
| Cost to raise insurance awareness by $1 \%$ | \$10,232 |
| Cost to raise insurance knowledge by $1 \%$ | \$24,302 |
| Cost to raise both scores by $1 \%$ | \$14,401 |

## Cost per Listener Estimates

The cost per listener ranged from USD $\$ 0.013$ to USD \$0.0748. The costs per listener were clearly lower when the upper bound audience numbers were used for the calculation. The costs per listener were also lower when the costs of the radio campaign alone were included. It is not surprising that these results suggest there are economies of scale to mass media that allow for the widespread dissemination of information on insurance at low cost. However, the individual impact on participants may not be as great as the impact that one could expect from one-on-one or group-based insurance literacy training. The data and estimates are shown in the table below.

Table 10: Estimation of Audience Size

| Audience size | Percentage | Number of persons |
| :---: | :---: | :---: |
| Total adult population |  | 20,150,000 |
| \% of adults who listen to radio more than once a week | 89\% | 17,933,500 |
| \% of listeners for whom Radio Citizen is one of their 3 favorite | $46 \%$ ( $\sim 40.9 \%$ of all adults $)$ | 8,249,410 |
| \% of listeners for whom iNooro is one of their 3 favorites | $12 \%$ ( $-10.7 \%$ of all adults $)$ | 2,152,020 |
| Upper bound estimate for radio audience (\% of listeners for whom Citizen or iNooro is one of their 3 favorite stations) | $58 \%$ ( $51.6 \%$ of all $\begin{array}{r}\text { adults) }\end{array}$ | 10,397,400 |
| Lower bound estimate for radio audience ( $25 \%$ of total listeners) |  | 2,599,350 |
| Cost per listener | Amount in USD \$ | Amount in USD \$ |
|  | Assuming Upper Bound Listener Numbers | Assuming Lower Bound Listener Numbers |
| Cost per listener on Citizen and iNooro for campaign alone | \$0.013 | \$0.053 |
| Cost per listener on Citizen and iNooro for campaign + TOT | \$0.019 | \$0.075 |

## CONCLUSIONS

The ICE-K radio campaign was implemented in order to increase awareness and knowledge of insurance and risk management among Kenyans, with the ultimate goal of increasing individual insurance use. The results of the evaluation research suggest that the campaign had a positive impact on listeners who heard the program on iNooro FM.

Five measures of consumer education were assessed in this report, including awareness of insurance and risk management techniques, insurance literacy, insurance behavior, attitudes towards insurance, savings and risk management, and trust generally and of insurance companies specifically. Of these five measures, the radio campaign had the largest impact on the general scores of listeners, on listener awareness of insurance terms and products, and on listener knowledge of insurance terms and policies. Listeners scored $18.6 \%$ higher on measures of awareness and $8 \%$ higher on measures of knowledge than non-listeners. The findings imply that simple exposure to insurance terms and risk management techniques through the radio program was sufficient to increase awareness and knowledge of insurance. Under the theory of financial education behavior change, improving awareness and knowledge of insurance terms and products is a first step in moving consumers towards changes in attitudes, increased skills, and, eventually, behavior change. Thus, the evaluation found that these improvements in listeners' overall awareness of insurance and risk management and knowledge of insurance terms and products indicate that radio is an effective tool to encourage behavioral change. It is not clear from this study whether an educational radio campaign can produce changes in other measures of insurance literacy, such as attitudes, skills, or behavior. Listeners may need repeated exposure and prolonged time periods to advance along the continuum towards such outcome changes.

It is noteworthy that changes in awareness were not originally part of the model of behavior change on which the radio campaign was based, and which was used to design the research. Questions about awareness were included to facilitate survey administration by permitting enumerators to avoid asking questions about knowledge of insurance terms to respondents who had never heard of the terms. This was done to exclude guessing on questions of knowledge. However, the research found that awareness of terms was an important measure for demonstrating the impact of the campaign.

The lack of change in positive attitudes towards insurance and trust of insurance companies may be related to the context in which participants normally encounter insurance. Lack of trust of insurance companies tends to be tied to negative experiences with insurance and a lack of understanding of how insurance works. In focus groups, listeners recounted that stories of negative experiences tend to be passed through social networks, spreading mistrust of insurance companies. When participants of the FGDs were further questioned on their attitudes towards insurance products and providers, it appeared that low levels of trust and low levels in positive attitudes towards insurance were directly related to negative personal experiences. The exposure that listeners received to positive messages about insurance and insurance companies may not be sufficient in duration and length to counteract personal experiences or word-of-mouth.

The cost-effectiveness analysis shows that radio is an efficient way to raise awareness and deepen knowledge of risk management and insurance. The analysis found that the cost of increasing the audience's insurance awareness and insurance knowledge scores by $1 \%$ ranged from $\$ 10,187$ to $\$ 14,401$ depending on whether the TOT costs were included. The cost per listener of providing the radio
campaign alone was extremely low and ranged from USD $\$ 0.013$ to $\$ 0.053$ depending on the audience size estimate. Assuming that the audience for the radio campaign could have ranged from a low of 2.6 million to a high of 10.5 million adults, the cost per listener of providing the radio show and the TOT was in the range of $\$ 0.019$ to $\$ 0.075$. This is very low compared to the costs of other financial education delivery channels. Additionally, listeners' enthusiasm to share the information they learned with others in their social networks, as expressed in focus groups, indicates a potential multiplier effect. This suggests that a radio campaign is a very cost-effective method to raise insurance awareness and literacy on a national basis.

## RECOMMENDATIONS FOR SIMILAR PROJECTS / EVALUATIONS

1. The survey data revealed that those who were likely to be exposed to the radio campaign scored higher than those who were not exposed to the campaign on scores of awareness and knowledge of insurance. This is in line with the theory of change underlying the campaign, which suggests that exposure to the insurance education messages of the campaign over prolonged periods of time will allow listeners to advance along the continuum from improved awareness, to improved knowledge, skills, attitudes, and behaviors. This will ultimately lead to the end objective of increased insurance uptake and improved risk management among the target population. Because media messages tend to reach a broad audience, but do not necessarily have a deep impact, the use of media campaigns in a similar weekly format may produce similar changes in measures of awareness and knowledge, without producing significant changes in other outcomes. However, because mass media reaches a wide audience, the impacts can be expected to be leveraged through word-ofmouth dissemination of campaign messages. With prolonged exposure, this may over time, result in a general increase in awareness and knowledge, and better equip the target population to further advance along the continum towards behavior change. It is not clear from this study whether a radio campaign alone will result in behavior change, and it may be desirable in some instances to use a multi-channel campaign to disseminate insurance education.
2. Measures of awareness are important in assessing the impact of a mass media campaign. Because awareness of insurance terms precedes in-depth knowledge, not to mention changes in skills, attitudes, and eventually behavior, measures of awareness can provide an early indication as to whether a mass media campaign is having the desired impact on its target audience before measures of other outcomes can be expected. It is recommended that future insurance education evaluations include measures of awareness for that reason.
3. The content of the radio program must be carefully tailored to the tastes and experiences of the audience. Survey respondents were most successful in identifying the drama segment and expert analysis as parts of the radio program, and focus group participants appeared to appreciate the "simple" nature of the dialogue and to identify with the characters. It appears these segments and features appealed to listeners demonstrating that the dialogue and characters were true to the actual experiences of listeners. It is important when developing a radio program to understand the target group and its needs and to design components of a radio program (e.g., topics, characters, expert analysis) that are both entertaining to the target group and relevant to their situations and problems.
4. The evaluation results indicate the need for additional or repeated exposure of the target audience to the programs addressing the following topic areas:
a. How to understand the difference between insurance and savings;
b. How to understand an insurance policy and its terms;
c. Overview and benefits of property insurance for petty traders and microentrepreneurs who are at constant risk of theft or destruction by fire.

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# ANNEX 1: PROPENSITY SCORE MATCHING 

## ABSTRACT

The dataset comprised of individuals who were listeners and non listeners to the insurance education program on the iNooro radio station. Baseline and endline surveys of participants were conducted to measure changes in their respective awareness, knowledge, and attitudes. These surveys were also conducted on individuals who were not listeners to the radio program. Matching was done by nearest neighbor to measure the utility of the comparison group as a counterfactual. To measure the "closeness" between individuals, propensity score matching was used. The technique supported the causal inferences made by the regression analysis because it allowed us to demonstrate the degree of randomization of the study.

## METHODOLOGY

The probit model (Liao, 1994) assumes the following functional form:

$$
y^{*}=\sum_{k=1}^{K} \beta_{k} x_{k}+\varepsilon
$$

Where $y^{*}$ is unobserved, and $\varepsilon$ is the symmetrical error term with zero mean and has its cumulative distribution function defined as $F(\varepsilon)$. The dummy variable D , is the defined by the following binomial relationship:

$$
D=\left\{\begin{array}{c}
1 \text { included in treatment group, if } y^{*} \geq 0 \\
0 \text { not included in treatment group, if } \mathrm{y}^{*}<0
\end{array}\right\}
$$

## CONCLUSIONS

The analysis of the baseline and endline samples suggested that the distribution of the propensity scores for their respective comparison and treated groups did report reasonably close matches. The endline sample, however, reported the closet matches between the two samples. Propensity scores at the 50th percentile of non treated group (comparison group) in the endline sample matched the propensity scores at the 25th percentile of the treated group. At a standard deviation of about .16, the propensity scores reported at the 50th percentile for the treated group approximately matched the propensity scores at 75th percentile of the non treated group. A similar analysis showed that the propensity score matches of the baseline sample reported less congruence between the scores of the treated and non treated groups.

# ANNEX 2: MULTIVARIATE SIMPLE REGRESSION MODEL 

The data were analyzed using a log OCS method in order to assess the impacts of the radio campaign on listeners' scores in comparison to non-listeners. The equation for the regression model is as follows:
$\ln \left(y_{i}\right)=\beta_{0}+\beta_{1}\left(x_{1 i}\right)+\beta_{2} \ln \left(x_{2 i}\right)+\beta_{3}\left(x_{3 i}\right) \ldots+\beta_{n}\left(x_{n i}\right)+\varepsilon_{i}$
Where:
$\beta_{0}$ is the constant term and
$\beta_{1}$ to $\beta_{n}$ are the coefficients relating the $n$ explanatory variables to the dependent variables (KSA indicators)

## RESULTS DISCUSSION

## Control Variables

Multivariate regression models were used to measure the elasticity of the dependent variables with respect to the explanatory variables of the analysis. The results of the models generally suggested that iNooro listeners demonstrated higher scores on most of the indicators of awareness and knowledge in the survey. The only exceptions to this trend were models two and seven -- they both reported negative beta coefficients ${ }^{9}$. In Model 1, for example, being an iNooro listener generally resulted in a 6.2 percent increase in overall correct scores when all other controls were held constant. Since the age squared variable was logged ${ }^{10}$, the interpretation of this variable was measured by its elasticity. That is to say that the percent change in y per percent change in x was read directly from the beta coefficient. Returning back to Model 1, an increase in age generally resulted in a .015 percent increase in overall correct scores when all other controls were held constant.

A review of the statistics associated with the coefficients of the model suggested that the iNooro listener variable was significant at at least the $1 \%$ confidence level in three of the seven models used: models 1, 3, and 4. Given that the beta coefficients suggested zero or near zero in the four models where the iNooro listener variable did not show significance at the $1 \%$ confidence level, this result is unsurprising. Additional variables of significance included those that reported employment and income level.

[^5]10 Modifications were applied to the raw data to normalize their respective distributions

The analysis of the variable "age (q53)" revealed a skewness value of (1.10). This level of skewness means that the data was slightly skewed to the left towards the younger participants in the study. To normalize the variable I transformed the "age" to age logged. Later, I omitted the variable age_sq because of multicollinearity with the normalized variable "age". The p-value for the variable was still very low which suggested the data is still not well distributed.

## Model diagnostics

It is generally a good practice to include model diagnostic statistics in an analysis to test the utility of the regression model. An F-test measures quality by comparing the errors generated in an unrestricted model to a constricted version. In the case of this analysis, the unrestricted models were the ones used for the regression analysis and the restricted regression models were the absence of the independent variables in the model $\left(Y=\beta_{0}\right)$.

More generally:
$H_{0}: \beta_{1}=\beta_{2}=\beta_{3}=\beta_{n}=0$
$H_{a}$ : at least one $B_{n} \neq 0$

It was clear from the scores of the $F$ test that we could reject $H_{0}$ in favor of $H_{a}$. Moreover, all models except for model 2 were significant at the 1 percent level or 99th percentile in the $\mathrm{F}_{\mathrm{q}, \mathrm{n}-\mathrm{k}-1}$ distribution. Models 2 reported significance levels at the 25 percent level. This was a very poor result which suggested that the socioeconomic variables chosen for this model were not good predictors for the outcome variable, which is surprising. The R-squared scores for the regression models showed that the functional form used for the models produced varying degrees of "goodness of fit". Model 5 reported the highest R -squared coefficient at roughly 40 percent where as Model 2 reported the lowest Rsquared coefficient which was roughly at 12 percent. R-squared scores are generally considered secondary forms of quality measures because there are many ways to justify just what are good or bad scores. They are useful, however, as supplements to the overall analysis of model utility.

## ANNEX 3: SUMMARY OF MULTIVARIATE REGRESSION ANALYSIS

| Variable | Model 1: Overall Correct |  | Model 2: Knowledge of Risk Mgmt |  | Model 3: Knowledge of Insurance |  | Model 4: Awareness of Insurance |  | Model 5: Insurance Purchase Behav |  | Model 6: Overall Trust |  | Model 7: Attitudes about Insurance |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\beta$ coefficient |  | $\beta$ coefficient |  | $\beta$ coefficient |  | $\beta$ coefficient |  | $\beta$ coefficient |  | $\beta$ coefficient |  | $\beta$ coefficient |  |
| Control variable |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| iNooro listener | 0.0623748 | ** | -0.0157971 |  | 0.0796201 | ** | 0.186311 | *** | 0.0327452 |  | 0.0107781 |  | -0.017849 |  |
| Gender | 0.0316359 |  | -0.0351298 |  | 0.0370481 |  | 0.0943645 |  | 0.1441954 |  | 0.0738199 |  | 0.0431571 |  |
| Log of age | 0.0145072 |  | -0.1427008 |  | 0.0415751 |  | 0.2523025 | * | -0.1432053 |  | -0.2335338 |  | 0.0839056 |  |
| Urban / rural location | 0.0176312 |  | 0.0508713 |  | -0.0184587 |  | 0.0444708 |  | 0.0369761 |  | 0.1096284 |  | 0.0647346 |  |
| Head of household | 0.0038341 |  | 0.051229 |  | -0.0147436 |  | -0.0099408 |  | 0.1630566 |  | 0.0282925 |  | -0.1104352 |  |
| Married / living w/partner | -0.0373903 |  | 0.0584444 |  | -0.069491 |  | -0.0210856 |  | 0.0375198 |  | 0.1920093 |  | -0.0027346 |  |
| Single never married | -0.0671543 |  | 0.0295168 |  | -0.0798491 |  | 0.0476617 |  | -0.1923486 |  | 0.0583751 |  | -0.1008734 |  |
| Widow / widower | -0.0297348 |  | 0.0616356 |  | -0.0482643 |  | -0.0599514 |  | -0.1952227 |  | -0.3491552 |  | -0.0114991 |  |
| Number of adults in hhold | -0.006534 |  | 0.0091668 |  | -0.0139271 |  | -0.0235674 |  | -0.0026874 |  | 0.0129761 |  | -0.0374147 | * |
| Number of children in hhold | 0.0198202 |  | 0.027028 |  | 0.0170761 |  | -0.0433127 |  | 0.0164885 |  | 0.0766897 | * | 0.0544812 | * |
| Illiterate | 0.0121638 |  | 0.0243083 |  | 0.0729023 |  | 0.5098705 |  | 1.169701 | * | -0.3468731 |  | -0.1179021 |  |
| Moderately literate | -0.0429879 |  | 0.0071673 |  | 0.0067524 |  | 0.3701496 |  | 1.441021 | * | -0.4416873 |  | -0.1915528 |  |
| Fully literate | -0.1894601 |  | -0.1136409 |  | -0.0596609 |  | -0.1499349 |  | 1.96081 | * | -0.9054497 |  | -0.1987562 |  |
| Wage employment | -0.2093943 |  | 0.5895013 | ** | -0.2563343 |  | -0.4357114 |  | -0.3332449 |  | -0.5729727 |  | -0.0698277 |  |
| Trade self-employment | -0.2449326 |  | 0.5585803 | ** | -0.3151683 |  | -0.4319972 |  | -0.3845824 |  | -0.4127318 |  | -0.0274877 |  |
| Service/ production self-employment | -0.2937426 | * | 0.5466369 | ** | -0.3120974 |  | -0.3312385 |  | -0.5652452 |  | -0.8043354 | * | -0.3499953 |  |
| Agriculture self-employment | -0.2026741 |  | 0.6639535 | ** | -0.2158366 |  | -0.2941174 |  | -0.4601304 |  | -0.4948264 |  | -0.008199 |  |
| Livestock breeding employment | -0.3732743 | * | 0.5419149 | * | -0.4398783 | * | -1.042834 | ** | -0.2377067 |  | -0.1628541 |  | -0.1943435 | * |
| Pension | -0.0651993 |  | 0.5670804 | ** | -0.0899341 |  | -0.0845249 |  | 0.2287641 |  | -0.2370384 |  | 0.0486426 |  |
| Income level 1 (lowest) | -0.0786523 |  | -0.2229718 |  | -0.0046614 |  | -0.3704571 |  | (omitted) |  | 0.6101918 | * | -0.0815224 |  |
| Income level 2 | 0.141162 | ** | 0.0284059 |  | 0.1850402 | *** | 0.0106544 |  | -0.7523015 | ** | 0.5443207 | *** | 0.1261965 |  |
| Income level 3 | 0.1253816 | ** | 0.0422919 |  | 0.1889234 | *** | -0.012418 |  | -0.5092891 | ** | 0.5411574 | *** | -0.0238583 |  |
| Income level 4 | 0.0632444 |  | 0.1035519 |  | 0.1530581 | ** | -0.0380975 |  | -0.5137956 | ** | 0.476414 | ** | -0.1793817 |  |
| Income level 5 | 0.0998553 | * | 0.0683658 |  | 0.1542867 | ** | 0.1236965 |  | -0.3845556 | * | 0.4651537 | *** | -0.2192012 |  |
| Income level 6 | 0.1408641 | ** | 0.0799131 |  | 0.1213744 | * | 0.1781018 |  | 0.0191757 |  | 0.6810131 | *** | -0.0501954 |  |
| Income level 7 | 0.1161817 | * | 0.1761989 | * | 0.0973333 |  | 0.1843938 |  | 0.0734362 |  | 0.5298289 | ** | -0.1304894 |  |
| Income level 8 | 0.0631813 |  | 0.1093527 |  | 0.0698738 |  | -0.0681229 |  | (omitted) |  | 0.6943469 | ** | 0.1046016 |  |
| Income level 9 | 0.1151798 |  | -0.0037846 |  | 0.1460258 |  | 0.1301935 |  | (omitted) |  | 0.7271625 |  | 0.238138 |  |
| Income level 10 (highest) | 0.1691664 |  | 0.0093015 |  | 0.1992048 |  | 0.3133995 |  | 0.125846 |  | 0.7908851 |  | -0.3952068 |  |
| Constant | 3.747886 | *** | 1.799437 | *** | 2.768963 | *** | 0.51173 |  | 0.533836 |  | 1.762476 | * | 1.873833 | ** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model diagnostics |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| F test of model | F( 29, 263) |  | F( 29, 263) |  | F( 29, 263) |  | F( 29, 259) |  | F( 26, 88) |  | F( 29, 209) |  | F( 29, 263) |  |
| Value of F | 2.32 |  | 1.19 |  | 1.89 |  | 3.2 |  | 2.27 |  | 2.59 |  | 2.22 |  |
| $\mathrm{R}^{2}$ | 0.2034 |  | 0.116 |  | 0.1721 |  | 0.2639 |  | 0.4019 |  | 0.2647 |  | 0.1967 |  |
| Adjusted R ${ }^{2}$ | 0.1155 |  | 0.0186 |  | 0.0808 |  | 0.1815 |  | 0.2253 |  | 0.1627 |  | 0.1081 |  |
| $N$ | 293 |  | 293 |  | 293 |  | 289 |  | 115 |  | 239 |  | 293 |  |

[^6]
## ANNEX 4: SUMMARY OF LINEAR REGRESSION ANALYSIS ON TRUST SCORES

| Variable | Model 1: General trust |  | Model 2: Govt |  | Model 3: SACCOs |  | Model 4: Neighbors |  | Model 5: Medical centers |  | Model 6: Insurance companies |  | Model 7: NGOs |  | Model 8: Banks |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\beta$ coefficient |  |  |  | $\beta$ coefficient |  | $\beta$ coefficient |  | $\beta$ coefficient |  | $\beta$ coefficient |  | $\beta$ coefficient |  | $\beta$ coefficient |  |
| Control variable |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| iNooro listener | 0.055296 |  | 0.1551956 |  | 0.0440959 |  | -0.0349057 |  | 0.1981018 |  | 0.1395049 |  | 0.0390707 |  | -0.0363039 |  |
| Gender | -0.2319345 |  | 0.0931985 |  | -0.0071476 |  | -0.1178029 |  | -0.0217002 |  | 0.0664438 |  | -0.1589327 |  | 0.0116675 |  |
| Log of age | -0.1703947 |  | -0.2657392 |  | -0.0822792 |  | 0.1141572 |  | 0.1454855 |  | -0.054875 |  | 0.0857729 |  | 0.5723621 |  |
| Urban / rural location | -0.0152703 |  | 0.1538548 |  | -0.0413591 |  | -0.0874915 |  | 0.2322286 | * | -0.0050857 |  | 0.0032034 |  | -0.1051557 |  |
| Head of household | 0.3316999 |  | 0.048634 |  | -0.1284801 |  | 0.0918971 |  | 0.0949397 |  | 0.0290064 |  | 0.1670969 |  | -0.1797221 |  |
| Married / living w/partner | 0.143542 |  | 0.0679216 |  | -0.5098013 |  | -0.352814 |  | -0.1727306 |  | 0.2520719 |  | 0.1705941 |  | 0.2413116 |  |
| Single never married | -0.0342678 |  | 0.0527123 |  | -0.5170445 |  | -0.2695734 |  | -0.1961955 |  | 0.1414941 |  | 0.1654447 |  | 0.3529939 |  |
| Widow / widower | 0.6037457 |  | 0.3798132 |  | -0.4197711 |  | -0.4975052 |  | -0.2114978 |  | 0.3520852 |  | 0.2103275 |  | 0.2575876 |  |
| Number of adults in hhold | 0.1888371 | * | -0.0264074 |  | 0.0273688 |  | 0.0367056 |  | 0.0610393 |  | 0.0154759 |  | 0.1180774 | * | -0.0644521 |  |
| Number of children in hhold | -0.1195045 |  | -0.0577601 |  | 0.0963597 |  | -0.0885374 |  | -0.0814104 |  | 0.0664369 |  | -0.029666 |  | -0.0965077 |  |
| Illiterate | 1.797207 |  | 1.595028 | * | 1.03544 |  | 0.1411499 |  | 1.083493 |  | 1.223444 |  | 0.8700843 |  | 0.4259338 |  |
| Moderately literate | 2.726858 |  | 1.823206 | * | 0.9269433 |  | 0.0547989 |  | 1.038504 |  | 1.229043 |  | 0.8406333 |  | 0.1699166 |  |
| Fully literate | 0.5467935 |  | 1.739152 |  | 1.57554 |  | 1.227347 |  | 0.6576874 |  | 0.8858435 |  | 1.706876 |  | 0.3473449 |  |
| Wage employment | 3.457445 | * | 1.575312 | * | 1.304542 |  | 0.8254503 |  | 1.014306 |  | 1.277699 |  | 1.054868 |  | 0.7184161 |  |
| Trade self-employment | 3.684575 | * | 1.651113 | * | 1.158748 |  | 0.7477163 |  | 0.8117744 |  | 1.018171 |  | 1.031805 |  | 0.6156047 |  |
| Service/production selfemployment | 5.109491 | *** | 1.966051 | * | 1.350388 |  | 1.088821 |  | 0.8893992 |  | 1.207134 |  | 1.204113 |  | 0.7518204 |  |
| Agriculture self-employment | 4.036049 | * | 1.60466 |  | 1.146802 |  | 1.201853 |  | 1.002687 |  | 1.400886 |  | 1.24369 |  | 0.8789539 |  |
| Livestock breeding employment | 3.531032 | * | 1.087802 |  | 1.060575 |  | 1.131017 |  | 0.5700204 |  | 0.2941904 |  | 0.3150991 |  | 0.6962079 |  |
| Pension | 2.653344 |  | 0.8226441 |  | 1.005999 |  | 0.9296821 |  | 1.021179 |  | 0.4765829 |  | 0.8191627 |  | 0.6240966 |  |
| Income level 1 (lowest) | -2.760051 | * | -0.9201563 |  | -2.181512 | *** | -1.858765 | ** | -1.344291 | ** | -0.2893354 |  | -0.9360969 |  | -1.139527 |  |
| Income level 2 | -3.4478 | *** | -1.649793 | *** | -1.032901 | *** | -0.939767 | *** | -1.306634 | ${ }^{* * *}$ | -1.18796 | ${ }^{* * *}$ | -1.501077 | *** | 0.020539 |  |
| Income level 3 | -3.036287 | *** | -1.478688 | *** | -1.257524 | *** | -0.7177074 | ** | -1.525515 | *** | -1.409521 | *** | -1.687471 | *** | -0.322585 |  |
| Income level 4 | -1.948357 | *** | -1.076306 | *** | -1.028723 | *** | -0.3127825 |  | -1.096611 | *** | -1.010432 | *** | -1.340852 | *** | -0.1236616 |  |
| Income level 5 | -1.973902 | *** | -1.244974 | *** | -1.096017 | *** | -0.4136247 |  | -1.375734 | *** | -1.501235 | *** | -1.455917 | *** | -0.4068455 |  |
| Income level 6 | -2.349254 | *** | -1.175873 | *** | -0.9933811 | *** | -0.6721622 | * | -1.355355 | *** | -1.159253 | *** | -1.538446 | *** | -0.2846224 |  |
| Income level 7 | -1.034985 |  | -0.9636628 | ** | -0.6476603 | * | -0.4901137 |  | -1.298904 | *** | -1.20496 | *** | -1.101455 | *** | -0.3314723 |  |
| Income level 8 | -0.6506736 |  | -0.361692 |  | -0.744971 | * | -0.6631772 |  | -1.448799 | *** | -1.594219 | *** | -1.575926 | *** | -0.3522938 |  |
| Income level 9 | -0.406199 |  | -1.200984 |  | -0.7163629 |  | -1.082704 |  | -1.562228 |  | -0.8295707 |  | -1.878658 |  | -0.5294477 |  |
| Income level 10 (highest) | -2.2876 |  | -1.443629 |  | -1.797868 | * | -1.458272 |  | -1.855483 | * | -2.288241 | ** | -1.150772 |  | -0.7797873 |  |
| Constant | 3.38501 |  | 1.994086 |  | 1.872928 |  | 2.099771 |  | 1.190625 |  | 1.177253 |  | 1.228233 |  | -0.3507201 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model diagnostics |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| F test of model | F( 29, 263) |  | F( 29, 263) |  | F( 29, 254) |  | F( 29, 261) |  | F( 29, 263) |  | F( 29, 260) |  | F( 29, 256) |  | F( 29, 260) |  |
| Value of $F$ | 3.95 |  | 2.58 |  | 2.33 |  | 1.29 |  |  | 3.5 | 3.13 |  | 3.94 |  | 1.3 |  |
| $\mathrm{R}^{2}$ | 0.3036 |  | 0.2214 |  | 0.21 |  | 0.1251 |  |  | 782 | 0.2586 |  | 0.3087 |  | 0.1269 |  |
| Adjusted $\mathrm{R}^{2}$ | 0.2268 |  | 0.1355 |  | 0.1198 |  | 0.0279 |  |  | 986 | 0.1759 |  | 0.2304 |  | 0.0296 |  |

* $\mathrm{p}<0.05, * * \mathrm{p}<0.01, * * * \mathrm{p}<0.001$


## ANNEX 5: SURVEY QUESTION CATEGORIES

| Questions assessing awareness of insurance |  |  |
| ---: | :--- | :--- |
| Question <br> number | Question | Correct <br> answer |
| 1a. | Have you ever heard of the term "risk" when talking about <br> insurance? | Yes |
| 12. | If you wanted to buy insurance, do you know where to buy it? | Yes |
| 13a. | Have you heard about a policyholder when talking about <br> insurance? | Yes |
| 14a. | Have you ever heard about a deductible when talking about <br> insurance? | Yes |
| 15a. | Have you ever heard about exclusion when talking about <br> insurance? | Yes |
| 16a. | Have you ever heard about property insurance? |  |
| 18a. | Have you ever heard about claims when talking about <br> insurance? | Yes |
| 19a. | Have you ever heard about drought index insurance? | Yes |

Questions assessing financial literacy
Part One: Risk Management
$\left.\begin{array}{|l|l|l|}\hline \begin{array}{l}\text { Question } \\ \text { number }\end{array} & \text { Question } & \text { Correct answer } \\ \hline \text { 1. } & & \text { In your opinion, which of the following is a "risk"? }\end{array}\right]$

|  | when an emergency occurs to help you respond to it? |  |
| :--- | :--- | :---: |
| 4. | Let us assume that your household has a large, <br> unexpected expense. Assuming you have all these <br> options available, which options would you choose to <br> pay for this unexpected expense? | 3 possible <br> responses: Use <br> savings; Borrow <br> money; Use <br> insurance money |
| 5. | In your opinion, what are some ways you can save <br> more money? | All responses <br> accepted except <br> "Don't know" |
| 6. | Peter suffers an injury on the job. To survive until he <br> can work again, should the family use their savings or <br> take a loan? | Take a loan |


| Questions assessing insurance literacy Part Two: Insurance |  |  |
| :---: | :---: | :---: |
| Question number | Question | Correct answer |
| 7. | "Insurance companies and welfare associations (Chamas) operate similarly to offer protection against risks - they collect payments from their members or customers, they "pool" the money to create a larger fund, and they pay benefits to members experiencing crises." | True |
| 8. | "When you experience a risk event for which you have purchased an insurance policy, the insurance company can provide you a large cash payment." | True |
| 9. | Can the following be insured? |  |
| a. | In patient medical care | Yes |
| b. | Outpatient medical care | Yes |
| c. | Education fees | No |
| d. | Personal accident or injury | Yes |
| e. | Loss of life | Yes |
| f. | Arson | Yes |
| g. | Business Property | Yes |
| h. | Household goods | Yes |
| i. | Automotive | Yes |
| j. | Other | Yes |
| 10. | What types of insurance are available to you and household members? |  |
| a. | Life | Yes |
| b. | Health | Yes |
| c. | Property | Yes |


| d. | Automotive | Yes |
| :---: | :---: | :---: |
| e. | Personal accident | Yes |
| f. | Drought | Yes |
| g . | Other | Yes |
| 11. | "One insurance policy is enough to cover all of your emergencies." | False |
| 13. | Who is a policyholder? | The person who buys an insurance policy |
| 14. | A deductible is an amount of the insured loss that the policyholder must pay by themselves. | True |
| 15. | When speaking of insurance, what is the meaning of the word "exclusion"? | An event or condition that is not covered by insurance |
| 16. | Which one is never covered by property insurance? | Damage due to riots |
| 17. | Following a fire, what must a person do in order to receive a payment from the insurance company? | Submit a claim to the insurance company |
| 18. | When you make a claim, insurance companies will pay you for the entire cost of your loss? | It depends on your policy |
| 19. | Drought index insurance pays claims based on what? | The amount of rainfall received in your area |
| 20. | "Life insurance can provide financial support to a family when the insured head of the household dies." | Strongly agree, Agree |
| 21. | The beneficiary of a life insurance policy is the person who | Receives the payment |
| 24. | As a consumer, if you have concerns or complaints about insurance that you have purchased, you can go to: | The Insurance Regulatory Authority |
| 25. | Let's assume that you bought health insurance at the beginning of this year. As it turns out, you do not need to go to the hospital at all during the year. Do you think you will you receive any of your money back? | No |
| 26. | Typically an insurance policy lasts one year from the date the policy starts. Imagine you bought a property insurance policy that started on January 1, 2009. What would you need to have done in order to be protected from property losses in Feb 2010? | Renew your policy before January 1, 2010 |
| 27. | Not all insurance companies are the same. It is important to ask my friends and neighbors about the reputation of each company before buying a policy. | Strongly agree, Agree |


| Questions measuring attitudes about risk management and insurance |  |  |
| :--- | :--- | :--- |
| Question <br> number | Question | Answer <br> suggesting <br> realistic attitude |
| 22. |  |  |
|  | Savings requires discipline, sacrifice and savings goals | Strongly agree, <br> Agree |
|  | I cannot put money aside for emergencies because there's <br> never any money left at the end of the month. | Strongly disagree, <br> Disagree |
|  | There is no need to put aside money for emergencies. | Strongly disagree, <br> Disagree |
|  | Insurance is necessary to protect your family | Strongly agree, <br> Agree |
|  | Insurance will bring bad luck to your family | Strongly disagree, <br> Disagree |
|  | There is no need to buy insurance. | Strongly disagree, <br> Disagree |
|  | I worry about the risks that my family and I face. | Strongly disagree, <br> Disagree |
|  | My family and I can handle our problems ourselves. | Strongly agree, <br> Agree |
|  | It is better not to think about risks and emergencies in <br> advance. | Strongly disagree, <br> Disagree |
|  | When someone is insured, he/she can live without worry. | Strongly disagree, <br> Disagree |
|  | Ineed more information about insurance. | Strongly agree, <br> Agree |

Questions measuring trust

| 27. | Please tell me if you Strongly agree, Agree, Disagree, Strongly <br> disagree, or Do not agree nor disagree |  |
| :--- | :--- | :--- |
|  | Most people are basically honest | Strongly agree, <br> Agree |
|  | Most people can be trusted | Strongly agree, <br> Agree |
|  | Most government officials can be trusted to do their job well | Strongly agree, <br> Agree |


|  | I can trust the SACCO officials to do their job well | Strongly Agree, <br> Agree |
| :--- | :--- | :--- |
|  | I feel I can trust my neighbors to look after my house if I am <br> away | Strongly agree, <br> Agree |
|  | I can trust the staff in the local medical facilities to look after <br> me the best they can to keep me in good health | Strongly agree, <br> Agree |
|  | I can trust insurance companies to be fair to me | Strongly agree, <br> Agree |
|  | I can trust the NGOs working in this area to act in my best <br> interest | Strongly agree, <br> Agree |
|  | I can trust banks to be fair to me | Strongly agree, <br> Agree |


| Questions measuring insurance purchase and use |  |  |
| :---: | :---: | :---: |
| 10. | What types of insurance have you or your household used? |  |
| a. | Life | Yes |
| b. | Health | Yes |
| c. | Property | Yes |
| d. | Automotive | Yes |
| e. | Personal accident | Yes |
| f. | Drought | Yes |
| g. | Other | Yes |
| 30 | What types of insurance have you and your household purchased? |  |
| a. | Life | Yes |
| b. | Health | Yes |
| c. | Property | Yes |
| d. | Automotive | Yes |
| e. | Drought | Yes |
| f. | Personal accident | Yes |
| g. | Other | Yes |


[^0]:    1 All conversions of Kenya shillings to the dollar use the May 16, 2011 rate of 84.4065 Kshs to $\$ 1$ as reported on Oanda (http://www.oanda.com/currency/converter/).

[^1]:    2 Listeners also tend to trust particular announcers with whom they are familiar, and messages are probably more trusted when delivered by those familiar voices.

[^2]:    3 Respondents were recruited using a systematic randomization process to eliminate enumerator bias in the selection of surveyed households and in the selection of the household member to be interviewed.

    4 Panel studies, which survey the same respondents at baseline and endline, are more expensive to administer than cohort studies because they require researchers to oversample in anticipation of participant attrition, and to recontact the original baseline participants at the time of the endline.

[^3]:    5 Nairobi's adult population is $48.6 \%$ banked, compared to $34.7 \%$ in Central Province. The Rift Valley is the next most banked province at $21.9 \%$, while the least banked province is North East, at $6.2 \%$ (Finaccess, 2009).

[^4]:    7 Four respondents did not indicate the number of adults in their households; mean and median calculations are based on a sample size of 29.

    8 Three participants who indicated that they used formal financial institutions did not specify which type; three participants indicated that they used two different types of financial institutions.

[^5]:    9 The beta coefficients represented the proportional change in the dependent variables of the model in response to an additional unit change in independent variables.

[^6]:    * $\mathrm{p}<0.05, * * \mathrm{p}<0.01, * * * \mathrm{p}<0.001$

