Information sharing, insurance decisions and conflict in the household

Pre-Analysis Plan

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Abstract

This research project aims to understand to what extent information about a financial product, when provided either to men or women, affects spouses' beliefs and attitudes towards the financial product, product purchase decisions, and intra-household information sharing, cooperation and conflict outcomes. We conduct a randomized controlled trial among 3100 pastoral households in Kenya and Ethiopia. We randomize, at the household-level, the gender of the spouse that receives information about an index insurance and savings financial product through video interventions. Additionally, we cross-randomize whether or not the household member that is targeted with information can directly share the information with their spouse, by requesting the intervention team to also show the video to their spouse. We collect survey data from both the male and female spouse.

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1 Trial Information

Title: Information sharing, insurance decisions and conflict in the household

Trial start date: January 2024

Trial end date: March 2025

Initial Registration Date: 18 June 2024

Location: Kenya & Ethiopia

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2 Summary

We aim to understand to what extent information about a financial product, when provided either to men or women redin the household, affects spouses' beliefs and attitudes towards the financial product, product purchase decisions, and intra-household information sharing, cooperation and conflict outcomes. We conduct a randomized controlled trial among 3100 pastoral households in Kenya and Ethiopia. Households receive new information about index insurance and savings through a video, and we randomly assign the gender of the spouse that receives it (target spouse): either an adult male household member or their female spouse. Additionally, we cross-randomize whether or not the target spouse can directly share the information with their spouse (non-target spouse), by requesting the video to also be shown to them.

Evaluation Question: To what extent does new information about an index insurance and savings financial product, when provided to men only or women only, affect spouses' beliefs, attitudes, purchase decisions and intra-household information sharing, cooperation and conflict outcomes?

Primary outcomes:

- First- and second-order beliefs about benefits and costs of insurance and savings.
- (Beliefs about) information sharing between spouses.
- Index insurance take-up and savings behaviour.
- Incidence of disagreements.
- Incidence of intimate partner violence (IPV).

Secondary outcomes:

- Knowledge of insurance and savings.
- Relationship quality.

Experimental Design: We conduct a randomized controlled trial among 3100 pastoral households in Kenya and Ethiopia. Households are randomly assigned into four treatment groups:

1. *Male:* only the male spouse watches new information video.
2. *Female:* only the female spouse watches new information video.
3. *Male + sharing option:* only the male spouse watches new information video, and decides whether the female spouse also gets to watch the video.
4. *Female + sharing option:* only the female spouse watches new information video, and decides whether the male spouse also gets to watch the video.

3 Interventions and treatment arms

Our interventions took place in Isiolo county, Marsabit county, Samburu county, Tana River county, Turkana county, and Wajir county in Kenya and Oromia, South Ethiopia and South West Ethiopia regions in Ethiopia. In collaboration with our implementing partners, short videos were prepared that explain the basic attributes and procedures of an index insurance and savings financial product. Sample communities were visited by survey teams, who showed the videos to individuals in treatment households in the process of conducting household surveys. The intervention was rolled out between January and March 2024. The financial product is part of a large-scale program to increase resilience to moderate and catastrophic drought among herders in the Horn of Africa. The financial product includes Index Based Livestock Insurance (IBLI) with premium subsidies, a mobile banking account, an enrollment bonus, and savings incentives. The financial product is — in principle -– accessible to all pastoral households in our study areas.

3.1 Content of the videos

10-minute information videos about index insurance and savings were developed. For the purpose of this study we distinguish between the "*product attributes video*" and the "*treatment video*".

The *product attributes video* explains basic attributes of the index insurance and savings financial product. For example, the video explains how insurance claim payments are determined and paid, and how pastoral households can register for the product.

The *treatment video* further describes the different welfare benefits of the insurance and savings financial product for pastoral households, and explains the procedures for pastoralists to address questions or issues in relation to the financial product. This is done using vignettes, presenting pastoralists in relatable situations. For example, one vignette addresses that for a pastoralist who worries a lot about future droughts, a benefit of insurance is that it may help to reduce these worries. Another vignette shows a pastoralist that wants to have more information or address an issue with their registration to the product, and then explains the process of contacting the customer care system by phone to seek further information about the product, or report grievances.[1]

[1]To answer a different research question in another related research project, different versions of the *treatment video* were shown in different communities. In one-third of communities (randomly selected), the treatment video focused only on welfare benefits from the financial product, in one-third the treatment video focused only on customer-care procedures, and in the remaining one-third of communities the video focused on both aspects. For the purpose of the current study, and given that treatment was assigned to households within communities, the content of the videos is orthogonal to treatment assignment, we disregard which version of the video is shown, and focus on variation in *who* receives the video, aggregating over the different versions.

3.2 Treatment arms

The product attributes video is shown to both a male and female spouse from all treatment households, but not to members of control households.[2] The treatment video is only shown to one of the two spouses in treatment households, the "*target spouse*", according to the household's assignment into one of four treatment arms. We summarise each experimental arm below.

1. Treatment arm 1: *Male*
    - The male spouse is the target spouse and watches the product attributes video and the treatment video.
    - The female spouse watches the product attributes video but not the treatment video.
2. Treatment arm 2: *Female*
    - The female spouse is the target spouse and watches the product attributes video and the treatment video.
    - The male spouse watches the product attributes video but not the treatment video.
3. Treatment arm 3: *Male + sharing option*
    - The male spouse is the target spouse and watches the product attributes video and the treatment video.
    - The female spouse watches the product attributes video but not the treatment video.
    - After watching the video, the male spouse decides whether or not to also share the treatment video with their female spouse.
4. Treatment arm 4: *Female + sharing option*
    - The female spouse is the target spouse and watches the product attributes video and the treatment video.
    - The male spouse watches the product attributes video but not watch the treatment video.
    - After watching the video, the female spouse decides whether or not to also share the treatment video with their male spouse.
5. Control arm
    - Both spouses do not watch any video

[2] This is done to ensure a basic understanding about index insurance and savings for all participants, needed to understand the follow-up video and answer follow-up survey questions.

3.3 Structure and Implementation

Videos are shown as part of a survey data collection effort conducted with both a male and a female respondent, who are each other's spouse, from all 1800 treated households.[3] Treatment households in 227 communities are visited by survey teams within the scope of the current study over a period of two months, from January to March 2024.

At the end of the baseline survey, enumerators show the product attributes video to all participants, and show the treatment video to the target spouse only. Additional survey modules are conducted with both spouses immediately after the videos, to collect information about participants' main take-aways from the videos, and knowledge, beliefs and attitudes about insurance and savings. Endline data will be collected one year later, from January to March 2024.

For households assigned to treatment arms 3 or 4 (*Male + sharing option* or *Female + sharing option*), the enumerator asks the target spouse, immediately after they watched the treatment video, to indicate whether they want the treatment video to be shown to their spouse as well. The enumerator then records their choice, and informs the field team supervisor of the choice. The target spouse's partner is being surveyed by another enumerator of the field team during the same session, on the same day. If the target spouse indicated to want to share the treatment video with their spouse, the supervisor would coordinate for the spouse to also watch the treatment video, after their survey was fully completed.

4 Sampling and randomization

The sample selection and randomization consisted of four stages. First, 26 districts across the arid and semi-arid lands of Kenya and Ethiopia were selected for inclusion in the study. Second, 451 communities from these districts were selected for inclusion in the study. Third, eight households that were eligible for the study were selected in each community. From each household, the household head and their spouse were invited to participate in the study. Fourth, households within each community were randomly assigned to one of the four treatment arms as described in Section 3.2.

4.1 Selection of districts

An initial selection of study sites was made at the district level – sub-county in Kenya and woreda in Ethiopia — based on the following criteria: districts needed to have (i) active registration of households for the financial product in the january-february 2023-2024 sales season, (ii) wide

[3] The survey data collection effort is part of a research project on the impacts of index insurance and savings on a broad set of outcomes for pastoral households and communities. The current study is nested in the research design of this overarching research project, while aiming to answer a complementary research question.

geographical spread over the selected pastoral areas, and (iii) security levels that do not pose the data collection team at risk, and (iv) the district has sufficient communities to sufficiently represent all experimental arms in the overarching research project (see footnote 3). This resulted in a total selection of 26 districts – 12 sub-counties across 6 counties in Kenya, and 14 woredas across 4 regions in Ethiopia – for inclusion in the study.[4]

4.2 Selection of communities

From the 26 selected districts, 451 potential study communities – that is, 226 sub-locations in Kenya, and 225 kebeles in Ethiopia – were randomly selected for inclusion in the overarching research project from the list of eligible communities. Community eligibility criteria required that the community was non-urban, and accessible for survey teams, given security conditions. Selected communities within the Somali region in Ethiopia were dropped from the sample due to operational issues in this region, leaving 393 communities in the sample. Of the 393 communities, 167 are located in Ethiopia and 226 in Kenya.

4.3 Randomization of communities

Within this sample of 393 communities, around 40% of communities were randomly assigned – after stratification by district-cluster (woreda in Ethiopia, and sub-county in Kenya) and unit area of insurance (UAI)[5] – to the control arm, where they receive no information about insurance and savings at all. This results in 166 control communities that are spread across all 23 districts, and 227 *target communities*.

4.4 Selection of households

Before the baseline survey data collection, a survey company conducted a household listing and listed cooperatives (Ethiopia) or pastoral groups (Kenya) in all selected communities. Cooperatives or pastoral groups that have 15 members or more, and not yet been sensitized regarding the financial package were selected as target groups. Among the members of these target groups, households that were (i) engaged in herd management and (ii) in which the household head had a spouse were listed. On the day of the survey visit, pastoral group leaders then assisted in selecting eight households from the list of eligible households that were available and interested to learn about the

[4] If a district did not fulfill criteria (iv), it was clustered with a neighboring district for stratification purposes.

[5] A unit area of insurance is the spatial unit at which premium rates are set, policies are sold, the drought index values are calculated, and for which insurance payouts are determined. One district cluster generally includes at least 1 and at most 5 UAIs. Hence, within each district-cluster, as many UAI-level randomization strata as possible were constructed while preserving a minimal strata size that allows sufficient presence of all experimental arms. This resulted in the grouping of multiple UAIs in some district clusters where UAIs were too small.

financial product.

4.5 Randomization of households

Within each *target community*, the eight selected households are randomly assigned to one of the four treatment arms (see section 3.2). This results in the assignment of two households per community to each treatment arm, with a total of 454 households per treatment arm. The control arm includes 1328 households. Because sample households were selected during the data collection visit, randomization was done prior to the visit by randomly assigning household numbers 1 to 8 to the four treatment arms for each community.[6] During the field visit, households were given a card with a number between 1 to 8, which enumerators would enter into the survey software when starting the survey. The software was programmed in such a way that the survey modules and intervention videos were presented to participants according to their household number's treatment status.

5 Data and variable construction

5.1 Data collection

Baseline survey data, video interventions, and a first set of post-intervention survey data are collected during the same visit, between January and March 2024. First endline data is planned to be collected between January and March 2025, one year after the baseline surevey and intervention. Household survey data are collected through personal interviews, conducted independently, with two respondents per household; the household head, and their spouse. In most cases, the household head is a male, with a female spouse. Some households have a female household head, with a male spouse. The full household survey was conducted with the household head, collecting both household-level as well as respondent-level information. The spouse only received a subset of survey modules that were respondent-specific.

Besides a set of basic household characteristics and a household roster (reported by the household head), the household questionnaire conducted in January-March 2024 collected baseline data from both respondents in the household on the following topics relevant for the current study:

- Mental health
- Risk and time preferences

[6]Note that the treatment assignment of the household numbers was randomly determined for each community separately, to ensure that members of the field team were not aware of the treatment assignment of the household number when starting the survey.

- Insurance and savings knowledge, experience and willingness to purchase
- Contract non-performance beliefs, attitudes and experience
- Intra-household decision-making, disagreements and relationship quality
- Experiences of and attitudes towards IPV (collected from women only)

Data on these topics will again be collected during the endline survey in 2025.

After the product attribute video, but before the treatment video, data was collected from both household members on:

- Main take-aways from the product attributes video
- First- and second-order beliefs on the willingness to register for the financial product.
- First-order beliefs about forage quality, livestock losses, and insurance payments.

After the treatment video (if shown), data was collected from both household members on:

- Knowledge of the index insurance and savings product.
- First- and second-order beliefs about benefits from index insurance and savings product.
- First-order beliefs about contract non-performance.

Only from the target spouse we collect data on:

- Main take-aways from the treatment video.
- Decision to share the video with spouse.
- First- and second-order beliefs about impact of treatment video on beliefs
- First- and second-order beliefs about information sharing with spouse.

5.2 Balance

We will test for balance at baseline on the following balance variables:

- Household size (adult equivalent)
  - *The sum of household members' adult equivalence (AE) where AE is determined by the following:* $AE = 0.5$ *if* $age < 5$, $AE = 0.7$ *if* $4 < age < 16$ *or* $age > 60$, $AE = 1$ *if* $15 < age < 61$. *This measure is adopted from the OECD-modified scale (Hagenaars et al., 1994).*

- Herd size
  - *The sum of total number of camels, cattle, goats and sheep herded or owned by the household, expressed in TLU.*[7]
- Annual household income per adult equivalent household member
  - *The total income (in Birr/KES (coverted to USD using PPP-adjusted exchange rate)) collected during the last four seasons (last long rain season, last long dry season, last short rain season and last short dry season) from livestock sales, livestock sales products, crop cultivation, salaried employment, casual labor, business, and petty trading, and other major sources of income excluding gifts and remittances, divided by the adult equivalent. The variable will be winsorized at 99th percentile to reduce extreme values.*
- Distance to nearest town
  - *The distance from household's basecamp to sub-county/woreda town, reported in kilometers.*
- Household settlement status
  - *Dummy variable of whether or not the household is fully settled in the past 12 months.*
- Age of the male and female respondent.
  - *Respondent age in years*
- Education of the male and female respondent.
  - *Dummy variable of whether the responded has ever attended any formal schooling or education facility.*
- Insurance knowledge of the male and female respondent
  - *Number of insurance knowledge questions answered correctly, out of the following 6 baseline knowledge questions:*
    - *For the IBLI product, which one of the four below determines whether a pastoralist receives an insurance benefit? (mc)*
    - *If a pastoralist did not receive an insurance payout from the financial product, because the satellite did not indicate black or red, will this pastoralist get their premium (the payment that they made to the insurance company upon registration) back? (y/n)*
    - *Boru insured 3 cattle with the insurance product in 2023. The forage in his region was normal in 2023 and the satellite indicated yellow in 2023, but Boru lost 8 cattle due to disease outbreak. Will Boru receive insurance payout? (y/n)*

[7] This refers to the total animals herded or owned by the household, expressed in Tropical Livestock Units (TLU), which is a commonly used measurement unit that converts the number of different animal species into a common unit based on the nutritional or feed requirement of each type of animal. 1 TLU = 0.7 camels = 1 cattle = 10 sheep or goats.

    - *Diba insured 3 cattle with the insurance product in 2023. The forage in his area was very bad, and the satellite indicated a black color. But all of Diba's cattle survived. Will Diba receive insurance benefits? (y/n)*
    - *Kura insured 4 cattle with the insurance product in 2023. The forage in his area was bad, and the satellite indicated a red color. Will Kura receive an insurance payout? (y/n)*
    - *Gnekuma insured 4 cattle with insurance product in 2023. The forage in his area was bad, and the satellite indicated an orange color. Will Gnekuma receive an insurance payout? (y/n)*

- Insurance trust of the male and female respondent
  - *Extent to which respondent indicates to agree (on a scale 1-10) with the statement "insurance companies are trustworthy."*

- Contract non-performance beliefs of the male and female respondent
  - *Dummy variable of whether or not the respondent agrees with the statement "agents typically make mistakes in registering and implementing financial products."*
  - *Dummy variable of whether or not the respondent agrees with the statement "If a mistake or error is made with the implementation of the financial product, I am confident that I will be able to have the mistake or error corrected"*
  - *Continuous variable, ranging 0-10, of the respondents' belief on the likelihood that they will receive an insrance payout if there is a drought.*

- Spousal disagreement about insurance or savings
  - *Dummy variable for whether disagreement about insurance or savings is reported to have happened sometimes or often by any of the respondents at baseline.*

- IPV experience by female respondent
  - *Dummy of whether female respondent experienced any IPV (economic, emotional, physical, or sexual violence) during the six months before the baseline survey.*

To test for balance on each balance variable, we will estimate a model with the balance variable as the dependent variable, dummies for each treatment arm as the independent variables, and dummies for randomization strata fixed effects.

The equation we will estimate is:

$$Y_{hcs} = \alpha + \beta T_{hcs} + \delta_s + \epsilon_{hcs} \tag{1}$$

where y_{hcs} is the balance variable for household h from community c in randomization strata s, β is the vector of estimated coefficients for each treatment arm dummy, T_{hcs} is the vector of treatment

arm dummies, δ_s are randomization strata fixed effects, and ϵ_{hcs} is the error term. We will cluster standard errors at the level of the household, as that was the level of randomization, in line with Abadie et al. (2023).

Equation (1) will be estimated as an Ordinary Least Squares (OLS) model if the balance variable is continuous, and as a logit model with dependent variable $Pr[Y_{hcs} = 1|T_{hcs}, \delta_s]$ if the balance variable is binary. For each balance variable, we will report the coefficient and p-values for each treatment dummy, as well as normalized differences following Imbens and Rubin (2015).

5.3 Attrition

To test for differential attrition by treatment arm, we will estimate Equation (1) as a logit model, with the likelihood of attrition of the male and female respondent separately, as well as the likelihood of attrition of the household as a whole, as the dependent variable. In case of differential attrition, we will report Manski bounds of the treatment effects (Manski, 1990). Differential attrition will only be relevant for outcome variables collected at endline, and not for those collected immediately after the baseline survey, since there will not yet be any attrition at baseline.

5.4 Primary outcomes

Our primary outcomes are respondent-level expectations, beliefs, attitudes and observed behavior, household-level savings behaviour and insurance decisions and intra-household information sharing about it, as well as outcomes of household-level conflict and cooperation. We distinguish between first-order and second-order expectations, beliefs and attitudes; first-order refers to attitudes, beliefs, and expectations an individual has themselves, while second-order refers to attitudes, beliefs, and expectations an individual has about others, in our case their spouse. All primary outcomes are variables collected after the treatment video, either during the data collection in January-March 2024 ("immediate outcomes"), from administrative data on the financial product take-up and savings behaviour between March 2024 and January 2025, or from the endline survey that will be conducted in January-March 2025 ("endline outcomes"). Most primary outcome variables are collected from both respondents from each household. Some were only collected from the target spouse, or only from women, which we will indicate below.

5.4.1 Beliefs about benefits of insurance and savings

Beliefs about benefits from insurance and savings are elicited from both respondents in the household using a set of questions that first asks respondents to indicate how likely they think they generally are to be in a certain situation, on a scale of zero to ten, and then asks respondents to indicate how likely they think they are to be in that situation, if they would have insurance and

savings. All questions are listed below, grouped between questions that ask about benefits from insurance or from savings specifically. We elicit both first-order, as well as second-order beliefs. That is, we collect both the respondent's own beliefs about the benefits of insurance and savings, as well as their beliefs about their spouse's beliefs of benefits from insurance and savings. These outcomes will be collected both immediately after the treatment video (January-March 2024), as well as during the endline survey (January-March 2025).

1. First-order beliefs about benefits from insurance
    - *How often do you think you will worry about not having enough money and food in future periods of serious or severe drought?*
    - *How often do you think you will worry about not having enough money and food in future periods of serious or severe drought, if you have insurance?*
    - *How likely do you think it is that your household will have to take your children out of school in case of a serious or severe drought?*
    - *How likely do you think it is that your household will have to take your children out of school in case of a serious or severe drought, if you have insurance?*
    - *How likely do you think it is that your household will have to sell goats to buy fodder, water or veterinary services in case of a serious or severe drought?*
    - *How likely do you think it is that your household will have to sell goats to buy fodder, water or veterinary services in case of a serious or severe drought, if you have insurance?*
2. First-order beliefs about benefits from savings
    - *How likely do you think it is that your household will be able to save for things that are important to your household (for example: education, health, or productive assets) in the next year?*
    - *How likely do you think it is that your household will be able to save for things that are important to your household (for example: education, health, or productive assets) in the next year, if you register for the savings product?*
    - *How likely do you think it is that your household will be able to make a large investment (for example buying a camel) in the next year?*
    - *How likely do you think it is that your household will be able to make a large investment (for example buying a camel) in the next year, if you register for the savings product?*
3. Second-order beliefs about benefits from insurance
    - *How often do you think you that your spouse will expect to worry about not having enough money and food in future periods of serious or severe drought?*
    - *How often do you think you that your spouse will expect to worry about not having enough money and food in future periods of serious or severe drought, if you have insurance?*
    - *How likely do you think that your spouse thinks it is that your household will have to take your children out of school in case of a serious or severe drought?*

- *How likely do you think that your spouse thinks it is that your household will have to take your children out of school in case of a serious or severe drought, if you have insurance?*
- *How likely do you think that your spouse thinks it is that your household will have to sell goats to buy fodder, water or veterinary services in case of a serious or severe drought?*
- *How likely do you think that your spouse thinks it is that your household will have to sell goats to buy fodder, water or veterinary services in case of a serious or severe drought, if you have insurance?*

4. Second-order beliefs about benefits from savings

    - *How likely do you think that your spouse thinks it is that your household will be able to save for things that are important to your household (for example: education, health, or productive assets) in the next year?*
    - *How likely do you think that your spouse thinks it is that your household will be able to save for things that are important to your household (for example: education, health, or productive assets) in the next year, if you register for the savings product?*
    - *How likely do you think that your spouse thinks it is that your household will be able to make a large investment (for example buying a camel) in the next year?*
    - *How likely do you think that your spouse thinks it is that your household will be able to make a large investment (for example buying a camel) in the next year, if you register for the savings product?*

For each set of two questions above, we will construct a variable that proxies the respondent's perceived benefit of insurance or savings by taking the difference between the perceived likelihood of the asked situation in general, and when having insurance and savings.

Additionally, we collect first order beliefs, only from the target spouse, about the likelihood of the insurance and savings financial product being beneficial for different members of the household.

5. First-order beliefs about benefits from the insurance and savings financial product

    - *After seeing this video, how likely do you think it is that registering for the insurance and savings financial product is beneficial for you?*
    - *After seeing this video, how likely do you think it is that registering for the insurance and savings financial product is beneficial for your spouse?*
    - *After seeing this video, how likely do you think it is that registering for the insurance and savings financial product is beneficial for your household?*
    - *After seeing this video, how likely do you think that you will want to register for the insurance and savings financial product?*

5.4.2 Beliefs about costs of insurance and savings

First-order beliefs about the likelihood of contract non-performance of the different features of the insurance and savings financial product are elicited from both respondents in each household. These outcomes will be collected both immediately after the treatment video (January-March 2024), as well as during the endline survey (January-March 2025).

1. First-order beliefs about the likelihood (on a scale 0-10) of contract non-performance of the insurance and savings product.
    - *How likely do you think it is that there will be problems with your registration to the insurance and savings financial product?*
    - *How likely do you think it is that if a problem occurs with the insurance and savings financial product, that you would be able to have it properly resolved?*
    - *How likely do you think it is that you will receive the enrollment bonus in your account if you register for the insurance and savings financial product?*
    - *How likely do you think it is that the enrollment bonus will be paid to you within three months after registration if you register for the insurance and savings financial product?*
    - *How likely do you think it is that you will receive an insurance payout if there is a drought?*
    - *How likely do you think it is that you will receive an insurance payout if there is a drought within 30 days of the announcement of payout?*

5.4.3 Information sharing with spouse: beliefs and expectations

We collect, only from target spouses, their first-order beliefs on the impact of the intervention's information on their spouse's beliefs about whether or not the insurance and savings product is beneficial, and first- and second-order expectations about the extent to which information from the treatment video will be shared, as well as self-reported worry about information sharing. These outcomes will be collected immediately after the treatment video (January-March 2024).

1. Second-order beliefs on the impact of information on spouse's beliefs
    - *If your spouse gets to see this video, how likely do you think it is that your spouse thinks that registering for the insurance and savings financial product is beneficial for you?*
    - *If your spouse does not get to see this video, how likely do you think it is that your spouse thinks that registering for the insurance and savings financial product is beneficial for you?*
    - *If your spouse gets to see this video, how likely do you think it is that your spouse thinks that registering for the insurance and savings financial product is beneficial for your spouse?*
    - *If your spouse does not get to see this video, how likely do you think it is that your spouse thinks that registering for the insurance and savings financial product is beneficial for your spouse?*

- *If your spouse gets to see this video, how likely do you think it is that your spouse thinks that registering for the insurance and savings financial product is beneficial for your household?*
- *If your spouse does not get to see this video, how likely do you think it is that your spouse thinks that registering for the insurance and savings financial product is beneficial for your household?*
- *If your spouse gets to see this video, how likely do you think it is that your spouse will want to register for the insurance and savings financial product?*
- *If your spouse does not get to see this video, how likely do you think it is that your spouse will want to register for the insurance and savings financial product?*

2. First-order expectations about information sharing with spouse

    - *How likely do you think it is that you will share information from the video you have seen with your spouse?*
    - *How likely do you think it is that you will share all the information given in the video you have seen with your spouse?*
    - *How likely do you think it is, on a scale of 0 to 10, that you will share only parts of the information given in the video you have seen with your spouse?*

3. Second-order expectations about information sharing with spouse

    - *If your spouse would see these videos, how likely do you think it is that they will share information from the video they have seen with you?*
    - *If your spouse would see these videos, how likely do you think it is that they will share all the information given in the video they have seen with you?*
    - *If your spouse would see these videos, how likely do you think it is that they will share only parts of the information given in the video they have seen with you?*

4. Worry about information sharing

    - *Are you worried about sharing information from the video with your spouse?*
    - *On a scale of 0 to 10, where 0 is not worried and 10 is very worried, how worried are you about sharing information from the video with your spouse?*

5.4.4 Information sharing with spouse: observed behavior

We record, as a binary variable, whether or not the target spouse in households assigned to the *Male + sharing option* or the *Female + sharing option* treatment arms indicate that they want the treatment video to be shown to their spouse as well. This outcome will be collected immediately after the treatment video (January-March 2024)

5.4.5 Insurance and savings take-up

We record, based on administrative data matched with out survey sample, whether or not a household has registered for the insurance and savings product in the February-March or August-September 2024 sales windows, as a binary variable, as well as the total TLU insured, as a continuous variable.

We will also observe a household's savings behaviour. We will construct dummies for whether any deposit and withdrawal is made in the 12-month period between March 2024 and 2025, as well as summations of the total amount deposited and total amount withdrawn in that period.

5.4.6 Disagreements

We collect, from both respondents in the household, how often during the past 12 months them and their spouse have had a dispute or disagreement about each of the following topics:

- *Food expenditure*
- *Non-food expenditure*
- *Livestock herd management*
- *Your work or activity*
- *Domestic chores*
- *Travel outside of kebele*
- *Child nutrition or health*
- *Child Schooling*
- *Savings*
- *Livestock insurance*

We will create a dummy for whether any of the respondents in the household indicates that a dispute or disagreement with their partner about any of the ten topics has sometimes or often happened in the last 12 months, and a continuous variable that is equal to the number of topics about which the respondent indicates to have had a dispute or disagreement. Moreover, we create a dummy for whether any of the respondents in the household indicates to have sometimes or often experienced any dispute or disagreement with their partner about savings or livestock insurance specifically. These variables will only be collected as outcomes during the endline survey (January-March 2025).

5.4.7 Intimate Partner Violence

From female respondents only, we collect whether their husband did the following acts of violence to them during the last twelve months. These variables will only be collected as outcomes during the endline survey (January-March 2025).

1. Economic Violence
    - *Argue about you engaging in productive activities to earn money?*
    - *Argue over how to use money you earned?*
    - *Argue over money in general?*
    - *Argue over taking care of the children?*
2. Emotional Violence
    - *Was jealous or angry if you talked to other men?*
    - *Accused you of being unfaithful?*
    - *Did not permit you to meet your friends?*
    - *Tried to limit your contact with your family?*
    - *Insisted on knowing where you were at all times?*
    - *Said or did something to humiliate you in front of others?*
    - *Insulted you or made you feel bad about yourself?*
    - *Threatened to hurt or harm you or someone you care about?*
3. Physical Violence
    - *Pushed you, shook you, or threw something at you?*
    - *Slapped you?*
    - *Twisted your arm or pulled your hair?*
    - *Punched you with his fist or something that could hurt you?*
    - *Kicked you, dragged you, or beat you up?*
    - *Tried to choke you or burn you on purpose?*
    - *Threatened or attacked you with a knife, gun or other weapon?*
4. Sexual Violence
    - *Insulted you or made you feel bad if you would not have relations with him?*
    - *Physically force you to have relations with him when you did not want to?*

For each of the four categories of intimate partner violence, we will create a dummy for whether the female respondent indicates to have experienced any of the violent acts perpetrated by their husband in the last six months, and a continuous variable that is equal to the number of different types of violence they experienced. Moreover, we will also create a dummy for whether a female respondent experienced any intimate partner violence across all four categories, and a corresponding continuous variable that is equal to the number of different types of violence across all categories they experienced.

5.5 Secondary outcomes

5.5.1 Knowledge about the insurance and savings product

Knowledge about the insurance and savings product is elicited from both respondents in the household using a set of multiple choice questions testing whether respondents have a correct understanding of different features of the product. In order to avoid that respondents answer the multiple-choice questions based on random guessing, respondents have the option to answer "I don't know" to each question. All questions are listed below, grouped in two categories, according to whether the question is about the financial product's procedures, or the technicalities of the insurance product. These outcomes will be collected both immediately after the treatment video (January-March 2024), as well as during the endline survey (January-March 2025).

1. Knowledge about procedures.
    - *How often does a pastoralist that purchases insurance have to make a premium payment to the insurance company to remain insured?*
    - *Based on your understanding of the insurance product, can you pay the insurance premium in livestock?*
    - *Based on your understanding of the financial product, can you sign up for the financial product using your MPesa account as a bank account?*
    - *If the satellite announces a black or red reading (< 25th percentile), how would you receive the insurance payout?*
    - *Imagine Boru. During registration, he provided the mobile phone number of a neighbor because he does not have a mobile phone. Do you think that he can access mobile banking?*
    - *Will everyone that registers for the financial product and pays the insurance premium get the enrollment bonus?*
    - *If you are eligible to receive the enrollment bonus, after how many months can you withdraw the money from your account?*
    - *If Kamal, a pastoralist, enrolled for the insurance and savings product and he puts some money on his savings account every now and then but does not withdraw, do you think that he can expect back more or less?*

- *Is there a way to address issues that customers have with the insurance or savings product?*

2. Knowledge about insurance.

   - *For the insurance, what determines the amount of premium that you need to pay?*
   - *For the insurance, what determines whether a pastoralist receives an insurance benefit?*
   - *If there is an announcement that the percentile score is 15 for a specific insurable area, would you expect that a payout will be made to insured pastoralists in this area?*
   - *Boru insured 3 cattle in 2023. The forage in his region was normal in 2023 and the satellite indicated yellow in 2023, but Boru lost 8 cattle due to disease outbreak. Will Boru receive insurance payout?*
   - *Diba insured 3 cattle in 2023. The forage in his area was very bad, and the satellite indicated a black color. But all of Diba's cattle survived. Will Diba receive insurance benefits?*
   - *Kura insured 4 cattle in 2023. The forage in his area was bad, and the satellite indicated a red color. Will Kura receive an insurance payout?*
   - *Gnekuma insured 4 cattle in 2023. The forage in his area was bad, and the satellite indicated an orange color. Will Gnekuma receive an insurance payout?*
   - *If a pastoralist did not receive an insurance payout because the satellite did not indicate black/red, will this pastoralist get their premium back?*

For each of the questions listed above, we will construct a binary variable indicating whether the question was answered correctly. Additionally, we will construct an index summing the total number of questions answered correctly, both for the full set of questions, as well as for each of the two categories.

5.5.2 Relationship Quality

We collect, from both respondents in the household, to what extent, on a five-point Likert scale, they are satisified with their partner for the following aspects in their relationship:

- *Emotional support*
- *Respect and admiration received*
- *Division of household responsibilities*
- *Joint decision-making*
- *Financial support*
- *Time spent together*

- *Sex life*

We will create seven dummies, one for each aspect of the relationship, which are equal to one if the respondent indicates to be satisfied or very satisfied with the relevant relationship aspect, and a continuous variable that is equal to the number of aspects of the relationship the respondent is satisfied or very satisfied with. These variables will only be collected as outcomes during the endline survey (January-March 2025).

6 Estimation Strategy

6.1 Average treatment effects

6.1.1 Immediate outcomes

All immediate outcome variables, as presented in Sections 5.4.1-5.4.4 and 5.5.1, are collected at the respondent-level, and we will analyze these outcomes using the following equation:

$$Y_{ihcs} = \alpha + \beta T_{hcs} + \gamma G_{ihcs} * T_{hcs} + \eta G_{ihcs} + \delta_s + \epsilon_{ihcs} \tag{2}$$

Where Y_{ihcs} is the respondent-level outcome variable of interest, T_{hcs} is a vector of dummies for every treatment and control arm comparison, G_{ihcs} is a dummy either for whether respondent i in household h from community c in strata s is female or whether the respondent is the target spouse, depending on whether we are interested in comparing between male and female respondents within target status (control, non-target spouse or target spouse), or between target and non-target spouses within the same gender, respectively. Hence, β and $\beta + \gamma$ are estimated treatment effects for male respondents (non-target spouses) and female respondents (target spouses), respectively. δ_s are randomization strata fixed effects, and ϵ_{ihcs} is the error term. We will estimate Equation (2) as an OLS model if the outcome variable is continuous, and as a logit model if the outcome variable is binary. We will cluster standard errors at the level of the household, as that was the level of randomization.

For each treatment dummy, we will also report Randomization Inference (RI) p-values from 1,000 permutations, following Young (2019), as well as q-values adjusting for the False Discovery Rate (FDR) using the Benjamini-Hochberg procedure (Benjamini and Hochberg, 1995; Anderson, 2008) across dependent variables within each family of outcomes as listed in Section 5.4 and 5.5 above, where each sub-section (5.4.1 - 5.5.1) is a family.

6.1.2 Endline outcomes

For endline outcomes, as presented in Sections 5.4.1-5.4.2 and 5.4.5-5.5.2, we will estimate average treatment effects for the comparisons between treatment arms 1 and 2 (*Male* and *Female*) and the control arm, using Equation (2) for respondent-level outcome variables (e.g., beliefs and knowledge), and using the following equation for household-level outcome variables:

$$Y_{hcs} = \alpha + \beta T_{hcs} + \delta_s + \epsilon_{hcs} \tag{3}$$

Where Y_{hcs} is the household-level outcome variable of interest, T_{hcs} is a vector of dummies for every treatment and control arm comparison, δ_s are randomization strata fixed effects, and ϵ_{hcs} is the error term. We will estimate Equation (3) as an OLS model if the outcome variable is continuous, and as a logit model if the outcome variable is binary. We will cluster standard errors at the level of the household, as that was the level of randomization.

For comparisons between treatment arms 3 and 4 (*Male + sharing option* and *Female + sharing option*) and the other experimental arms, we will estimate Local Average Treatment Effects (LATE) using 2SLS, where we use the sharing-option treatment arms as an instrument for whether both spouses in a household have received the treatment video.

We will estimate respondent-level outcomes separately for male and female respondents or for target spouses and non-target spouses, depending on whether we are interested in comparing between male and female respondents within target status (control, non-target spouse or target spouse), or between target and non-target spouses within the same gender, respectively. We will use the following 2SLS model:

First-stage:

$$b_{hcs} = \xi_0 + \xi_1 T_{hcs} + \delta_s + \varepsilon_{hcs} \tag{4}$$

Where b_{hcs} is whether the target spouse has chosen to share the treatment video with their spouse, T_{hcs} is a vector of dummies for every treatment and control arm comparison, δ_s are randomization strata fixed effects, and ε_{hcs} is the error term. We will test strength of the instrument and report the F-statistic following Olea and Pflueger (2013).

Second-stage (respondent-level):

$$Y_{ihcs} = \alpha + \beta \hat{b}_{hcs} + \delta_s + \epsilon_{ihcs}. \tag{5}$$

Where Y_{ihcs} is the respondent-level outcome variable of interest, $\hat{b}_{hcs}$ is the predicted value of the first-stage model, δ_s are randomization strata fixed effects, and ϵ_{ihcs} is the error term. We will cluster standard errors at the level of the household, as that was the level of randomization.

For household-level outcome variables, we estimate the 2SLS model with Equation (4) as the first stage, and the following equation as the second stage:

Second-stage (household-level):

$$Y_{hcs} = \alpha + \beta \hat{b}_{hcs} + \delta_s + \epsilon_{hcs}. \tag{6}$$

Where Y_{hcs} is the household-level outcome variable of interest, $\hat{b}_{hcs}$ is the predicted value of the first-stage model, δ_s are randomization strata fixed effects, and ϵ_{hcs} is the error term. We will cluster standard errors at the level of the household, as that was the level of randomization.

In all estimations, we will also report, for each treatment comparison, Randomization Inference (RI) p-values from 1,000 permutations, following Young (2019), as well as q-values adjusting for the False Discovery Rate (FDR) using the Benjamini-Hochberg procedure (Benjamini and Hochberg, 1995; Anderson, 2008) across dependent variables within each family of outcomes as listed in Section 5.4 and 5.5 above, where each sub-section (5.4.1 - 5.5.1) is a family.

For endline outcome variables that we have baseline data on, we will also estimate an ANCOVA model, by re-estimating Equations (4) and (5) or (6), adding as a control the baseline value of the outcome variable (if available), and a dummy variable indicating if the household has missing baseline data for the dependent variable.

6.2 Heterogeneity by baseline characteristics

We also test for heterogeneity of treatment effects on primary and secondary outcome variables by baseline household characteristics relevant for decision-making about index insurance. Baseline characteristics that will be used to estimate heterogeneous treatment effects are:

- Treatment video version
  - We construct two dummies for whether or not the version of the treatment video that the community was assigned to receive focused on (1) welfare benefits, and (2) customer care procedures.
- Difference between spouses in trust in insurance companies
  - We construct a dummy for whether baseline trust in insurance companies (on a scale of 0-10) of the male respondent is higher (or equal) vs. lower than for the female respondent.
  - We construct a dummy for whether the absolute difference between the spouses' baseline trust in insurance companies is above (or equal to) vs. below the median.
- Difference between spouses in knowledge of the financial product

  - We construct a dummy for whether baseline knowledge of the financial product (measured by number of questions answered correctly) of the male respondent is higher vs. lower (or equal) than for the female respondent.
  - We construct a dummy for whether the absolute difference between the spouses' baseline knowledge of the financial product (measured by number of questions answered correctly) is above (or equal to) vs. below the median.

- Disagreements about insurance or savings
  - We construct a dummy for whether any of the respondents in the household indicates to have sometimes or often experienced any dispute or disagreement with their partner about savings or livestock insurance in the twelve months before the baseline survey.

We will estimate a model of heterogeneous treatment effects by adding interaction terms of all treatment (interaction) terms in Equations (2) and (3) with the heterogeneity variable dummy. For example, the respondent-level outcome specification with heterogeneous treatment effects will then be estimated as follows:

$$Y_{ihcs} = \alpha + \beta T_{hcs} + \gamma G_{ihcs} * T_{hcs} + \theta G_{ihcs} * T_{hcs} * V_{hcs} + \psi T_{hcs} * V_{hcs} + \eta G_{ihcs} + \delta_s + \epsilon_{ihcs} \quad (7)$$

where V_{hcs} is the heterogeneity variable, and parameters $\beta, and \gamma$ are the estimated treatment effects for households with baseline characteristic below the splitting threshold (e.g., spouses' difference in knowledge of the financial product is below the median), and parameters $\theta and \psi$ are the estimated treatment effects for households with baseline characteristic above the splitting threshold (e.g., spouses' difference in knowledge of the financial product is above or equal to the median).

We will estimate the 2SLS models in equations (4) and (5) or (6) separately for households below and above the splitting threshold of the heterogeneity variable.

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