Empowering Women at a Pivotal Moment: Evidence from a Cash Transfer and Role Model Workshop in Kenya*

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Can intervening at a pivotal moment, when household resources increase, improve women's empowerment? We examine this question through a four-arm field experiment with 3,000 rural Kenyan women, comparing (1) a large, unconditional lump-sum cash transfer (2) a workshop that exposes women to role models and facilitated planning (3) the two combined and (4) a placebo workshop. We find that combining the treatments increases women's share of household resources and reduces intimate partner violence compared to the cash transfer alone. In contrast, neither intervention alone improves these outcomes. Only in the combined arm do women report improvements in bargaining with their spouses. This highlights gains for women from combining poverty reduction strategies with role model interventions.

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1 Introduction

Across developing countries, women report limited control of household resources and experience high rates of intimate partner violence (World Economic Forum, 2018; World Health Organization, 2021). Moments of rapid economic growth can be catalysts for gender equality – or squandered chances. Some episodes of growth or structural transformation have radically improved girls' survival and children's health and nutrition, delayed marriage and fertility or reduced IPV (Atkin, 2016; Heath, 2014; Jensen, 2012; Qian, 2008). But others have failed to improve these outcomes, or even led to backlash (Erten and Keskin, 2024; Li and Zhang, 2023).[1] At the household level, cash transfer programmes could present a key moment for women to invest in their own income-generating activities, to purchase and control new assets or even to renegotiate dynamics in their relationship. But women are not always able to take advantage of this opportunity.[2]

Perhaps women struggle to imagine a pathway out of entrenched household dynamics – to envision a future where their relationship is different or to identify the steps that could make such a change possible. Exposure to strong female role models who display greater agency within their families can begin to reshape these expectations. Psychological theories suggest that people's mental models – their sense of what they can become and achieve – are powerfully shaped by observing others like themselves living the lives they aspire to (Bandura, 1977; Hoff and Stiglitz, 2010; La Ferrara, 2019). Mass media can serve as a powerful vehicle for such exposure: soap operas, for instance, have been unexpected agents of gender equality, with evidence that areas exposed to empowered women on screen see improvements in women's and girls' educational and labour market outcomes, as well as their control over fertility and experience of domestic violence (Chong and Ferrara, 2009; La Ferrara et al., 2012; Jensen and Oster, 2009; La Ferrara, 2016). Yet, changes in mass-media content may themselves arise in societies already undergoing social and economic transformation, making it difficult to isolate their independent effects. Such portrayals may even provoke resistance or backlash, highlighting the importance of understanding how exposure interacts with existing contexts (Cullen et al., 2024).

This paper provides experimental evidence on how these two potential outside shifters of household dynamics – large increases in household wealth and in women's exposure to empowered female role models – affect women's position in the household, separately and in combination. We run a four-arm village-level randomized controlled trial (RCT) with 3,000 married women in Siaya, Kenya. The sample consists of women from the poorest households in each village, identified using

[1] Relatedly, cross-country work finds economic growth or increased economic opportunities for women do not clearly improve women's control of resources or experience of violence (Agte et al., 2024; Bhalotra et al., 2021; Devries et al., 2013).

[2] Graduation-type programs for households do not increase women's share of household assets (Roy et al., 2015) or say in household decision-making (Banerjee et al., 2015). Cash transfers have mixed effects on intimate partner violence (IPV), with studies reporting reductions, no impact, or, in some cases, increased violence for certain subgroups (Baranov et al., 2021; Buller et al., 2018; Shah and Barski, 2025).

the partner NGO's poverty targeting criteria. The context is one of extreme poverty, with high rates of intimate partner violence and the acceptability of violence despite high levels of female labour force participation.

We examine whether exposing women to strong female role models in collaborative relationships with their husbands alters women's position in the household. In the role model and facilitated planning workshop arm ("workshop"), women watch a video about the life stories of two local fictional female role models who work with their husbands to improve their economic position by setting higher aspirations; defining concrete, immediate steps to achieve them; and planning for obstacles. Women then participate in facilitated group exercises to practice these techniques.[3] The focus of the videos and techniques was raising economic aspirations for the household and improving their ability to achieve them. At the same time, the videos depicted a supportive, respectful couple in which the wife was willing, persistent, and effective in bargaining for her preferences with her husband, thereby modelling behaviours that many respondents noted in our qualitative work were unusual in this setting. In a second arm, women are invited to a placebo workshop where they watch a video containing the same images and descriptions of economic opportunities but without inspiring life stories and model relationships, and complete exercises involving group interaction ("placebo"). This arm allows us to isolate the role model and narrative elements of the content from potential information effects and group interaction.

Are the effects of exposure to role models different when economic constraints are simultaneously relieved, helping beneficiaries translate new resources into greater agency? Or does combining interventions instead provoke backlash? In a third arm, women's households are offered a large unconditional lump sum cash transfer of US$2,237 PPP and the placebo workshop ("cash"). The transfer is labelled as being for the household, but households needed to nominate one spouse's mobile money account to receive the transfer. Of married households, 82% nominated the woman's mobile money account. Finally, the combined arm is offered both the cash transfer and role model workshop ("combined"). We measure women's empowerment with a sample of married women through an intensive survey round conducted with women on average one year after the first cash transfer tranche. Unlike many cash transfer studies, we interview women on their own with sufficient survey time to conduct state-of-the-art measurement of IPV to minimise underreporting due to social desirability bias, and have rich measurement of the potential psychological, relational and normative channels – aspirations, intrahousehold negotiations, social norms – through which changes in household dynamics might occur.

We find that combining the workshop with the cash transfer enhances the effects of the cash transfer *on women's outcomes*. The combined intervention increases an index of women's control (ownership) of household assets and reduces an index of the frequency of IPV, compared to both

[3]Men were not invited to the workshop and evidence suggests their involvement may backfire (Anderberg et al., 2024; Cullen et al., 2024; Gazeaud et al., 2023; Lowe and McKelway, 2021).

the placebo and cash transfer arms. Neither the cash transfer nor the workshop on its own improve these outcomes, compared to the placebo intervention.[4] Consistent with this, only in the combined arm do women report improvements in bargaining with their spouses. Our findings suggest that supporting women in bargaining over how the transfer is used at the crucial moment when it is received can better enable women to share in the benefits of transfers without affecting the benefits for households. We next discuss these results in detail.

We first examine impacts on measures of women's control of household resources. The combined intervention improves women's economic empowerment, while the cash and workshop interventions on their own have little impact. Household durable assets increase substantially in both the cash and combined arms, but only women in the combined arm increase their control over these assets. Similarly, the likelihood of the woman owning a non-farm enterprise increases in both the cash and combined groups, but only women in the combined group report a significant increase in their say in decisions related to household enterprises and a significant increase in input into how the money earned from these enterprises is spent. This suggests that the combined intervention increases women's control over household resources more than either intervention alone. Consistent with this, while consumption increases in all arms, the share of spending shifts in favour of children's education only in the combined arm.

Second, we study intimate partner violence. There are benefits in terms of women's experience of violence from adding the workshop to the cash transfer: the frequency index of physical and sexual intimate partner violence is about 0.10 standard deviations significantly lower in the combined arm relative to both the placebo and cash groups. We also separately measure the prevalence of physical injuries as a result of IPV to capture the severity of violence. The incidence of injuries significantly increases in the cash group. This effect is mitigated in the combined arm, where there is no effect on injuries.

Importantly, we find evidence of heterogeneity in the impact on IPV in the cash arm. Women in households identified as having a high predicted baseline risk of violence (estimated following Abadie et al. (2018)) experienced an increase in violence of 0.24 standard deviations. Notably, this adverse effect is not present in the combined arm, suggesting that the addition of the workshop was beneficial for this vulnerable subgroup.

Finally, we first report on psychological, relational and normative mechanisms. An index capturing women's willingness to bargain is significantly higher in the combined arm compared to both the placebo and cash arms. This is driven mainly by women reporting making significantly more household decisions jointly with their spouses, and a marginally significant improvement in

[4] Orkin et al. (2025) examines the effects of the treatments on household economic outcomes among both female-headed and monogamously married households, where the married households that we focus on are 59% of the sample. They find that both the cash transfer and the workshop treatment on their own have substantial positive effects on household asset wealth, consumption, revenue, investment and labour supply. However, combining the workshop and the cash transfer does not improve the effects of the cash transfer on its own on household economic outcomes.

negotiation in case of a dispute. We interpret this as the role model workshop helping women to take advantage of a key bargaining moment. We find that economic aspirations significantly increase in all arms, suggesting that changes in aspirations cannot explain the effects that we observe. There are also no effects of any of the interventions on other mechanisms, such as self-efficacy, time and risk preferences, and attitudes towards the acceptability and justifiability of violence. Given the main mechanism difference between cash and combined arms is in bargaining, we interpret these results through a non-unitary household bargaining model, where intra-household resource allocation depends on the bargaining power of individuals and the value of their outside option (Manser and Brown, 1980; McElroy and Horney, 1981; Jayachandran and Voena, 2025).

The workshop has the potential to improve women's outcomes by changing how women bargain, though, consistent with our findings, it may not be sufficient to change bargaining power on its own. Seeing the examples of the role models achieving economic success with the support of their spouses may make women more willing to try to communicate better or negotiate with their spouses. Raising women's economic aspirations may make them more willing to press for their priorities to achieve their aspirations. To the extent that this results in women taking control of resources, their outside option will also improve. Crucially, it may be hard to bargain over existing resources which have already been allocated within the household. In contrast, the cash transfer creates an opportunity to advocate for the use of new resources at a time when everyone in the household can get a share. Therefore, as we find, the workshop may be more effective when combined with the cash transfer.

To our knowledge, this is the first study to test if a short, theoretically focused intervention showcasing economically successful role models but delivered at a key moment, alongside a large transfer of resources, can change women's position in the household. Our work is inspired by non-experimental work that shows exposure to strong female role models, via soap operas, political quotas or increased availability of call centre jobs for women, improves educational and labour market outcomes, control over fertility, and experience of domestic violence (Chong and Ferrara, 2009; La Ferrara et al., 2012; Jensen and Oster, 2009; La Ferrara, 2016). We build on this work by testing a theoretically similar but shorter intervention, delivered to the general population rather than those watching TV, and importantly, by testing how exposure to role models interacts with experimentally varying levels of wealth. We show that both economic constraints and a lack of exposure are profoundly important for whether women in this context are able to achieve changes in household dynamics. Short exposure to role models does boost economic aspirations for the household, and household economic outcomes, but on its own is not sufficient for women to change their position in the household. Cash on its own also boosts economic aspirations and household outcomes, but similarly doesn't change household dynamics, and in fact worsens IPV for a subset of women. However, providing the role model exposure at a key transition point, when a large unconditional cash transfer injects unallocated resources into the household, delivers a "big push

for women" that does improve women's control of resources and mitigates IPV, for all groups.[5] By showing how shifts in bargaining and aspirations interact with variation in economic constraints, we generate insights into how to change bargaining at moments of key transitions that could apply not only at times of income change, but also during regulatory shifts or structural transformation, when outcomes have been mixed for women (Anderson and Genicot, 2015; Atkin, 2016; Deininger et al., 2019; Erten and Keskin, 2024; Heath, 2014; Jensen, 2012; Li and Zhang, 2023; Qian, 2008).

Other work targeting improvements in women's position in the household uses intensive, multiweek training programs and targets deep underlying constructs like social norms (Angelucci et al., 2023; Dhar et al., 2022; Cullen et al., 2024) or bargaining or communication skills (Ashraf et al., 2020; Kala and McKelway, 2025; Nyqvist et al., 2024). Our combined intervention provides most of the resources used on the programme directly to households, with a short, theoretically targeted role model component.

Our work relates to the broader literature that looks at the effects of anti-poverty programmes and their impact on women's empowerment (Roy et al., 2015; Banerjee et al., 2015; Almås et al., 2018; Bakhtiar et al., 2025). There is a large literature that specifically focuses on IPV (Baranov et al., 2021; Shah and Barski, 2025; Angelucci and Heath, 2020), and we contribute by providing a comprehensive picture of women's economic position in the household. We do this through careful measurement conducted in a separate survey with women on their own to limit reporting bias, capturing women's control of resources, IPV and a range of psychological and bargaining mechanisms. Our placebo design helps rule out the possibility that effects are driven merely by information transmission or women meeting in groups.[6]

Our work also speaks to research exploring how to increase women's control of money or assets in the household, particularly at times when new resources enter households. Other work has explored technologies to give women greater financial control (Field et al., 2021; Riley, 2024; Heath and Riley, 2024; Campos et al., 2025; Greco et al., 2025). We explore whether role model exposure can enable women to bargain for this control themselves, but such interventions are potentially complementary in achieving similar goals.

The rest of the paper is organized as follows: we provide details of the experiment in Section 2, a conceptual framework in Section 3, the data and measurement in Section 4 and the estimation strategy in Section 5. In Section 6, we report the effects on women's economic position and experience of violence, with a discussion on mechanisms. Section 7 concludes.

[5]The combined intervention mitigates an increase in violence seen for women at high risk of IPV when they receive the cash transfer alone. For women at low risk of violence, both the combined intervention and cash transfer lower IPV compared to the placebo arm.

[6]Roy et al. (2019) find that combining a cash transfer with a nutrition behaviour change program reduces IPV, relative to cash alone. The program was unrelated to IPV but gathered isolated women in groups weekly for a year. They do not study the effects of the nutrition behaviour change program alone.

2 Experiment Details

2.1 Recruitment of the Sample

We draw the sample from a randomized control trial described in Orkin et al. (2025) (henceforth referred to as the 'Household Study') in Homa Bay and Siaya counties in western Kenya. A short census was conducted in all villages to collect data for a simple proxy means test used by the partner GiveDirectly to assess if households are eligible for cash transfers. Among households means-tested as poor, only households with an adult woman are included in the sample. This allowed the design of the workshops to be targeted at one gender by producing videos featuring female role models and hiring female staff to facilitate workshops.

A random sample was drawn of roughly 20 households per village that contain an adult woman (in a non-polygamous marriage or widowed), and are means-tested as poor.[7] This resulted in a Household Study sample of 8,309 primary female respondents from 415 villages.[8] This study only uses the sample from one county, Siaya, for which the Household Study sample is 5,264. From this, we exclude women not married at baseline (nearly all were widowed), and those above the age of 60. As a result, the sample for this study is 3,291 women in monogamous marriages below the age of 60 at baseline from all 176 villages in Siaya county.

2.2 Setting

The population in Siaya, a county on the border with Uganda, is primarily from the Luo ethnic group. The region is patrilineal (inheritance is through the male line) and patrilocal (couples settle in the man's village after marriage). Payment of a bride price is a common cultural practice. In the census of study villages, the separation/divorce rate was just 3% and 77% of those currently married reported being in monogamous marriages. There were only seven (0.2%) women who reported being separated/divorced over a one-year period in the study sample.[9] This low rate of separation/divorce is consistent with ethnographic evidence on the stability of marriages in this region (Potash, 1978).

Rates of intimate partner violence are high in Kenya, as reported in a nationally representative sample: one-third of women have experienced intimate partner violence in the last year; 50% of women have ever experienced it (United Nations, 2015). Acceptance of violence is also common,

[7] 4.5% of poor households without an adult woman are dropped. In addition, for married women, 11% of poor households which are polygamous are dropped. The Household Study excluded polygamous marriages, as it would have been complicated to decide who to target for the workshop intervention in these households.

[8] The RCT was originally designed to study the effects of the cash transfers and workshop on the household economic situation, reported on in Orkin et al. (2025). During piloting for the Household Study endline survey, respondents highlighted changes that the interventions had bought about in their relationship with their spouse. We were able to add a separate survey to capture these intra-household effects with married women in one of the two Household Study counties. See Figure A2 for a timeline of the different surveys.

[9] 4% of the women monogamously married at baseline reported that their spouse has taken another wife at follow-up. There is no statistically significant difference across the arms in either outcome. These women are included in the sample.

with 45% of men and 50% of women aged 15-49 agreeing that a husband is justified in hitting or beating his wife for at least one of five specified reasons. However, economic participation of women is also widespread, with almost 50% of rural women earning any cash income in the past 12 months. Women also participate in household decisions, with 70% of married women reporting input into the decision-making process for major purchases (United Nations, 2015). There are no major restrictions on women's movement outside the household. In Section 4.1, we discuss women's status in the study placebo group.

2.3 Interventions

The randomization was at the village level, with all respondents in a village assigned to receive one of the four treatments: *Cash* (unconditional cash transfer, placebo video and exercise), *Workshop* (role model video and exercises), *Combined* (unconditional cash transfer, role model video and exercises) and *Placebo* (placebo video and exercises). Village assignment to the four treatment arms was stratified based on location, village size, and household asset ownership levels.

There was a common intervention structure for the role model and placebo workshops: two back-to-back ten-minute videos, viewed by participants on a tablet, a facilitated drawing exercise and discussion, and the distribution of a reminder calendar and stickers.[10] All workshops with our sample occurred in groups of three to four, which were randomly assigned (see Orkin et al. (2025) for details).

Cash transfers were administered in three tranches: a small transfer ("token") of approximately US$203 PPP and two large lump sum transfers of approximately US$1,017 PPP each. Workshops were administered in the month around the date when the households received the second tranche of US$1,017 PPP, so all women from cash-eligible households knew they were receiving the cash transfer when they attended a workshop.

2.3.1 Role Model and Facilitated Exercises Workshop

The unique role model and planning workshop was designed to increase participants' economic aspirations, guide them in making concrete short- and long-term plans, and motivate them to take immediate action toward achieving their plans.

Aspirational Role Model Videos: The videos narrate the life stories of two fictional women, Judy and Josefine, from a similar area to the participants and from poor backgrounds. Both women succeeded in improving their socio-economic position by forming ambitious but attainable aspirations and working toward them over a number of years, despite obstacles supported by their partners (Figure A1 provides a few example screenshots from the videos). The videos describe how they came to be successful, the obstacles they faced and some lessons they drew from their

[10] Both videos are posted at https://mbrg.bsg.ox.ac.uk/aspirations-and-goal-setting-video-intervention.

experiences. The characters also "model" the techniques for goal-setting and planning that the participants then learn in the exercises and link their use to achieving their long-term goals or aspirations.

Judy and her partner are shown to be expecting a child and discussing the future. The decide that in five years they want Judy to start a business, for which they set intermediate goals of saving every week. Judy is shown to learn to sew, overcoming some obstacles in the process and then eventually running a successful business. Josefine is a teacher and farmer and recounts how she went from being a child who begged for money, a casual labourer to setting up a chicken farming business despite failing five times and how she struggled at teacher training college. Her husband is also shown in the video describing how money was saved for her to go to high school and all the obstacles Josefine overcame to set up her chicken-rearing business.

The videos do not explicitly mention women's empowerment or intimate partner violence by the spouse. However, through the role model channel, they may show women what a pathway to female empowerment looks like. The videos show women in positive, supportive and consultative relationships, who can change the household's economic circumstances with the help of their spouse. They work as a team, setting goals and making plans to overcome obstacles together. The men are shown supporting the women in setting up and running businesses. For example, at the end of the first story, the character is shown to be running a successful stitching business, and she says "I came from humble beginnings. Like you. My husband and I worked together to get here. It wasn't easy. But now I have my own home, my own business and people working for me."

Role models are particularly powerful at raising people's aspirations. Social Learning Theory in psychology posits that people form aspirations with reference to what other people similar to them are able to attain. They can be influenced by others they know. Alternatively, exposure to media or stories depicting characters they identify with can generate resonant "vicarious experiences" (Bandura, 1977) of what a different life might be like.

Exercises: After watching the videos, participants did a series of complementary exercises. In the first exercise, participants are asked to think about and describe their lives in five years "after everything has gone as well as it possibly could" to inspire setting of aspirations (King, 2001). They are encouraged to think of "the realisation of their dreams" where they have "reached their full potential". In the second exercise, participants select their most important and achievable goal and report how long it would take to achieve it (Morisano et al., 2010). In the third exercise, participants decide on a step ("implementation intentions") that they would take in the next week towards their goal (Gollwitzer and Sheeran, 2006), potential obstacles and strategies to handle them (Duckworth et al., 2013) and how their lives would be better ("mental contrasting") if they achieve their aspirations and how it would make them feel (Oettingen and Gollwitzer, 2010). In sum, the exercises are aimed at improving women's "implementation skills": helping women think through actionable steps to achieving their goals, and anticipating obstacles that they might face, including

from their spouses.

At the end, participants were given a calendar depicting the two role models from the videos, and sayings that described the core spirit of each video. They also received a set of stickers from which they could choose ones that reminded them of the exercise and were encouraged to place these on the calendar. The video and exercise intervention took roughly 80 minutes to deliver.

The videos were filmed by a production company based on our scripts, with ordinary people who were paid to be amateur actors, near the study location. The stories are compilations of the life stories of real people we collected in qualitative work. The videos were extensively pilot-tested and adapted in two rounds of focus groups during which we received feedback that some women were struck by differences between the relationships modelled in the videos and their own experience.

2.3.2 Placebo Workshop

The placebo intervention includes a video about farming in rural Kenya and contains all potentially new information from the role model videos. It includes at least one shot of every scene and character from the role model videos, alongside neutral commentary describing the shot. For example, a scene of Josephine raising chickens is accompanies by the narration "Some people own chickens or even have poultry businesses". It excludes any elements likely to manipulate critical psychological variables, such as narratives, characters, emotions, or music. As such, it does not include any content around the stories or relationships of the characters.

The placebo group also participated in an exercise where they were reminded of the content of the video and they drew the scenes that were most memorable. However, they did not learn the Best Possible Selves, goal-setting, mental contrasting, implementation intentions or anticipation of obstacles techniques. They were also given a calendar (with a picture of a sunset and a tree) and stickers, but were not told to think of these as representing their goals. The placebo intervention holds constant not only the information content of the role model video but also the exposure to a group, interaction with enumerators, exposure to media and time spent doing the exercises.

2.3.3 Unconditional Cash Transfer Intervention

The cash transfer is large and at US$2,237 PPP, it corresponds to roughly 75 percent of annual household expenditure for recipient households. Households were sent three mobile money[11] transfers: a small transfer ("token") of approximately US$203 PPP and two large lump sum transfers of approximately US$1,017 PPP each. The second and third transfers were made two and four months, respectively, after the first transfer.

The partner NGO, GiveDirectly, offered the transfer to the household, explaining the size and timing of the transfer and that there were no conditions attached to the transfer. The household had

[11] Households who did not have M-Pesa mobile money accounts were asked to register for M-Pesa at a network of agents in most small stores.

to nominate one spouse's mobile money account to receive the transfer: 82% of the households in this study sample nominated the woman's account, as the woman is usually at home when the NGO team visits. For households where the transfer was not in the name of the woman, we asked the reason for this in the follow up survey. This was to understand if these households were systematically different from the rest of the sample. The primary reason given was practical considerations, such as the man already having an account or the woman having identification verification issues. Only a small (6%) proportion of the households that selected someone other than the woman to be the recipient stated that they preferred it to be in the name of the primary male in the household.[12] Transfers were paused if there was conflict and couples were encouraged to resolve these conflicts. The NGO partner splits transfers equally between the partners if the conflict persists and cannot be resolved but transfers are never terminated because of spousal conflicts.

3 Conceptual Framework

In this section, we outline how the cash transfer and workshop interventions, on their own, and when combined, may affect household bargaining and, in turn, women's outcomes. In household bargaining models, the intra-household resource allocation depends on i) each partner's bargaining power and ii) the value of their outside option or threat point (Browning et al., 1994; Browning and Chiappori, 1998; Chiappori, 1988, 1992; Manser and Brown, 1980; McElroy and Horney, 1981; Jayachandran and Voena, 2025).

We follow Jayachandran and Voena (2025) and conceptualise the decision-making process as following a Nash bargaining process where couples have threat points representing their utility in the event an agreement cannot be reached and asymmetric bargaining weights:

$$max_{x_W,x_H,Q\geq 0}[U_W(x_W,Q)-V_W]^{\alpha}\cdot[U_H(x_H,Q)-V_H]^{\beta}] \qquad s.t. \qquad p.(x_W+x_H)+q.Q\leq y_W+y_H$$

where W and H denote the couple who are bargaining, V_i is each partner's threat point and the parameters α and β are their respective bargaining power. y_i is the income and x_i is the private consumption of each member of the couple and Q is a public good. p is the price of a unit of the private good, and q is the price of a unit of the public good. The objective function $U_i(x_i,Q)$ represents the utility of each member of the couple.

A woman's threat point, V_W is the utility she would have if cooperation breaks down - either through leaving the marriage or settling on a non-cooperative "separate spheres" equilibrium.[13]

[12] We examine a range of potential demographic, economic and psychological predictors of the respondent woman being the cash transfer recipient, and find that the woman's age is the only variable selected by Lasso as significantly predicting whether the woman was chosen as the recipient. Further, we interact each of the treatment arms that included the cash transfer with a dummy variable for the recipient being the woman, and find no differential effects of the treatments by recipient gender for our primary outcomes.

[13] In the setting for this study, the divorce rate is very low (under 3%), so the relevant threat scenario is

Interventions that expand a woman's ability to generate income or control resources upon marriage breakdown will raise her threat point and hence shift outcomes towards her preferences.

The cash transfer could raise the woman's threat point if she controls (part of) it, for example, through investing in a business she owns that generates income. This would shift outcomes towards the woman's preferences. However, the increase in resources will trigger intra-household bargaining over how the transfer is to be spent or who controls purchases. This can shift relative resource control across individuals within the household and lead to increases in IPV, as men use violence to assert control over resources and increase their bargaining power (Eswaran and Malhotra, 2011; Ramos, 2018). Men may also become more violent if they feel that their status is threatened by their wife's control of more economic resources (Angelucci and Heath, 2020). On the other hand, transfers may reduce violence, regardless of who controls them, by reducing poverty-related stress (Haushofer et al., 2019). Theoretically, it is therefore not clear that a cash transfer will improve women's outcomes, and there may be trade-offs between improvement in women's economic outcomes and experience of IPV (Baranov et al., 2021).

Features of the bargaining process, such as how couples conduct discussions and whether women choose to bargain at all, also determine women's bargaining power, α. Soft-skill interventions aimed at enhancing communication or negotiation skills may make women better at bargaining by changing how they listen to and respond to their partner and present their arguments (Ashraf et al., 2020; Kala and McKelway, 2025; Nyqvist et al., 2024). Psychological interventions aimed at raising self-efficacy or aspirations may make women more willing to try to bargain, changing how often and how hard they press for their priorities (McKelway, 2023). Such interventions may increase the weight a woman's preferences receive, even absent any change in her outside option. By improving how couples deliberate and how confidently women advocate for their priorities, such interventions can raise bargaining power and therefore tilt outcomes toward the woman's preferred allocations.

The workshop may improve women's outcomes through changing how they bargain, thereby raising women's bargaining power, α. The workshop showed examples of roles models in positive consultative relationships where they achieve economic success with support from their partners. Seeing an example of role models communicating successfully with their spouses may prompt women to try to communicate better or bargain with their spouses. The workshop exercises may also have improved women's skill at bargaining by helping them anticipate and plan for obstacles and increase their persistence. Such increases in bargaining willingness and skill would directly increase women's bargaining power, even absent any changes in their outside option. Further, the workshop was designed to raise women's aspirations for their household's economic outcomes and their children. As a result, it may have increased the woman's willingness to try to bargain so that she could realise her higher aspirations, which would also increase her bargaining power. To the extent that

non-cooperation, as in the 'separate spheres' bargaining model of Lundberg and Pollak (1993), instead of a divorce threat bargaining model.

attempting to realize her higher aspirations resulted in the woman participating more economically or taking control of resources, the workshop could indirectly improve the woman's outside option, V_W, as well. However, a backlash from raising women's aspirations is also a possibility (Anderson and Bidner, 2022). Further, it may be difficult for women to bargain better with their spouses when there is nothing new to bargain over, and taking control of existing resources may be significantly harder than advocating for a share of new resources. As a result, the workshop may have limited effectiveness alone.

Finally, women may be better able to improve their outcomes and experience less risk of violence backlash when they receive both the cash transfer and the workshop together compared to when they receive either alone. Greater willingness and motivation to bargain may be most valuable when there is a large increase in household resources to bargain over. The cash transfer creates such a "bargaining moment". In particular, better communication and negotiation can help women to structure discussions and reduce misinterpretation or status threats, thereby lowering the risk of backlash (IPV) when bargaining over the cash transfer. The video's narrative —that a woman's economic advancement benefits the whole family—may also help women frame proposals so they retain credible control over part of the transfer. The exercises may have helped women anticipate obstacles, including from their spouses, allowing them to come up with a plan for asking for control of part of the cash transfer. A higher willingness to bargain at the time of receipt increases the likelihood that the woman initiates and persists in discussions, shifting a larger share of the transfer—and subsequent investments—toward women's priorities. Consequently, we anticipate larger improvements in women's outcomes, and less risk of violence, when both interventions are received together than when either is delivered in isolation.

4 Data and Measurement

We collected endline data from almost 3,000 monogamously married women. Most of the outcomes reported on in this paper are collected in the 'Gender Study' survey from February to April 2018, an average of 12 months after the households received the first tranche of the cash transfer (US$203 PPP) and 8 months after the last tranche of US$1,107 (see Figure A2 for a timeline of the surveys and intervention activities).[14] This survey measured various dimensions of women's empowerment. Questions on economic empowerment covered women's control of household resources, including assets, consumption and small enterprises. Questions on IPV covered sexual, physical, emotional, and controlling IPV and injuries resulting from IPV.[15] To capture mechanisms, questions on

[14] 95% of the sample was surveyed during this period with the rest (5%; 140 respondents) being interviewed at different points during mop up activities between September 2018 and February 2019.

[15] All surveys for this study were administered face-to-face, and we followed Demographic and Health Surveys (DHS) protocols and ethical guidelines for conducting research on IPV. Questions related to physical and sexual violence and any injuries sustained due to violence were elicited using Audio Computer-Assisted Self-Interview Software (ACASI).

women's say in economic and non-economic decision-making, relationship with her partner, and their own and perception of community attitudes towards women were included. We also use data on a small number of variables – household consumption expenditure, women's aspirations, and some secondary psychological mechanisms for women – from the Household Study endline survey. This survey was conducted with the same primary female respondent three to six months after the Gender Study survey. Note that the Household Study endline was unable to survey 76 respondents (evenly distributed across all arms) who are part of this study sample, so the sample size falls to 2,890 for any analysis using Household Study data.

The baseline survey was carried out with the same female respondent an average of 5 months before the start of the cash transfers, before any interventions were announced. The baseline survey focused on demographics and household economic outcomes such as consumption expenditure, asset wealth and household economic activity. No measures of women's empowerment or experience of domestic violence were included in the baseline survey.

4.1 Study Descriptives

We report summary statistics at endline for the placebo group in Table 1.[16] We see that women are 34 years old on average, with 11 years of education. They have been married for 14 years, and their spouses are 8 years older with one additional year of education. They have 3.8 children on average.

Women's economic empowerment appears moderately high. Approximately 86% of women report owning, either fully or jointly, at least two small assets or one large asset within their household. Overall, women hold ownership (joint or full) of 53% of total household assets. Moreover, entrepreneurship is widespread, with 46% of women in the placebo group owning (solely or jointly) a non-farm enterprise at endline.

However, these indicators of economic participation contrast sharply with women's experiences within their households. On average, women report making only 2.5 out of 7 key household decisions jointly with their husbands. Even more concerning, rates of intimate partner violence (IPV) are alarmingly high: 74% of women in the placebo group report experiencing physical or sexual violence in the past 12 months.

Attitudes are also accepting of violence and male power: We ask women whether they agree with men exercising power in 6 different situations. For the same questions, we ask whether they think the majority of the village would agree with it. We construct an exercise of power score for women's own attitude and a score for the perception of village attitudes by aggregating indicator variables for each statement the woman *disagrees* with. Hence, higher values correspond to being *less* accepting of such behaviours. Women disagree to 4.25 and believe the majority of the others

[16] We use this sample as the baseline survey did not include any measures of women's empowerment.

in their community disagree with 3.46 of the 6 statements on men's expression of power. We also ask whether the woman agrees it is justified for a man to use violence against his wife in 7 different situations. Once again, we also ask about the perception of village attitudes and construct a score aggregating indicator variables for disagreement with each statement. Women disagree on only 3.14 of the 7 reasons for men to use violence, and think others disagree on 2.45 reasons on average.

Table 1: Summary Statistics

	Mean	Std dev.	Min	10th	90th	Max
Demographics						
Age	33.96	8.54	19.00	25.00	46.00	66.00
Education (yrs)	10.88	3.39	0.00	7.00	13.00	16.00
Years Married	13.94	9.19	1.00	4.00	28.00	43.00
Partner Age	41.81	11.26	21.00	29.00	59.00	82.00
Partner Education (yrs)	11.91	3.52	0.00	7.00	16.00	16.00
Number of Children	3.80	1.81	0.00	2.00	6.00	9.00
Empowerment						
Asset Ownership Indicator	0.86	0.34	0.00	0.00	1.00	1.00
Share of Assets Owned	0.53	0.26	0.00	0.20	0.88	1.00
Enterprise Ownership	0.46	0.50	0.00	0.00	1.00	1.00
Joint Decision Making (0-7)	2.46	2.21	0.00	0.00	6.00	7.00
Any Violence	0.74	0.44	0.00	0.00	1.00	1.00
Attitudes						
Exercise of Power (own attitude)	4.25	1.29	0.00	3.00	6.00	6.00
Justifiable Violence (own attitude)	3.14	2.22	0.00	0.00	7.00	7.00
Exercise of Power (village attitude)	3.46	1.54	0.00	1.00	5.00	6.00
Justifiable Violence (village attitude)	2.45	2.15	0.00	0.00	6.00	7.00
Observations	711					

Notes: This table shows summary statistics at endline for the Placebo group. All demographic information is for the respondent woman. Asset ownership indicator is a binary indicator for any two small or one large asset owned fully or jointly by the woman. Share of assets owned is the proportion of household assets which are owned by the woman, or jointly by the woman and family members. Enterprise ownership is an indicator variable for if the woman owns a non-farm enterprise. Joint decision making ranges from 0 to 7 and is the sum of seven indicators for the woman and her partner jointly making different types of household decisions. Any violence is the experience of any physical or sexual violence from an intimate partner in the last 12 months. Exercise of power (own) ranges from 0 to 6 and is the sum of five indicator variables for if the woman disagrees with the man exercising power in specific situations. Exercise of power (village) is the response to the same set of questions on the perception of what an average person in the village thinks. Justifiable violence (own) ranges from 0 to 7 and is the sum of five indicator variables for if the woman disagrees with the man using violence in specific situations. Justifiable violence (village) is the response to the same set of questions on the perception of what an average person in the village thinks.

5 Estimation

We estimate models of the form:

$$Y_{iv} = \beta_C \cdot \text{Cash}_v + \beta_P \cdot \text{Workshop}_v + \beta_{CP} \cdot \text{Combined}_v + \alpha_s + \epsilon_{iv}, \tag{1}$$

where i and v index individuals and villages, Y_{iv} denotes the outcome of interest. $Cash_v$, $Workshop_v$, $Combined_v$ are indicators for assignment to the treatment arms: equal to one for villages assigned to receive the cash transfer only, the workshop only or to receive the combined intervention, respectively. α_s is a stratification fixed effect (the constant term is subsumed into the vector of fixed effects). We include PDS lasso selected controls to maximise statistical power since we do not have baseline values for the primary outcomes of interest. We report heteroskedasticity robust standard errors clustered by the village.

All outcomes are measured for the respondent or households that received one of the treatment or placebo interventions, so i indexes individuals or households. The parameters of interest are $(\beta_C, \beta_P, \beta_{CP})$, respectively, the treatment effects of being assigned to only the cash transfer, to only the workshop, or to the combined intervention, versus the placebo intervention. All indices are created using the approach suggested by Anderson (2008). The inference methods and outcome measures are prespecified in a preanalysis plan (PAP) posted at https://www.socialscienceregistry.org/trials/2923 immediately upon the completion of all data collection and before any analysis was carried out. We make a few deviations from the pre-analysis plan in variable definitions and note these where relevant. For brevity, we have not reported results for a few secondary measures and robustness analysis.

We adjust the p-values of the coefficients of interest for multiple statistical inference by calculating sharpened q-values that control for the false discovery rate (FDR) for all variables within each primary class of outcomes. We do not multiple-test-correct summary indices for each primary outcome family. Rather than pre-specifying a single q, we report the minimum q-value at which each hypothesis is rejected, following Anderson (2008) and Benjamini et al. (2006).

5.1 Integrity of the Experiment

We have good balance for the study sample on a pre-specified set of relevant demographic and economic variables (Table A1). The endline sample, shown in Table A2, is also balanced.

The overall rate of attrition is 11%, mainly due to respondents having moved away to a different location (50% of attrited individuals) followed by respondents not giving consent (34% of attrited individuals). Attrition is uncorrelated with treatment (Table A3).[17]

Compliance with treatment was high, with 91% of the respondents receiving the assigned intervention.[18]

[17] As noted in Section 4, we use a few outcomes from the Household Study endline, in which an additional 76 respondents attrited. This attrition is also not correlated with treatment.

[18] There are some small differences in compliance rates between treatments, mainly due to cash compliance being slightly less than the placebo or workshop compliance. 92% of the placebo and 94% of the workshop intervention arms received the assigned intervention, while 89% and 90% of the cash and combined treatments, respectively, received the intervention as allocated.

6 Results

6.1 Economic Empowerment

The treatments we study improve household living standards – consumption, asset wealth and revenue (Table A4). However, household economic improvements need not translate into women's outcomes improving. We examine the intra-household impacts of these household-level welfare improvements by looking at outcomes that capture women's economic empowerment.

6.1.1 Control of Assets

We find evidence that adding the workshop intervention to the cash transfer improves women's ability to control assets at a time when the household's non-land assets increase equally in the cash and combined arms (Table 2 column 1). Even if total household assets increase, women's share of these assets need not increase and may even decline if new assets are purchased which the husband solely controls.[19] We find a statistically significant 0.16 standard deviation increase in an index capturing women's ownership of assets in the combined arm compared to placebo (Table 2 column 2).[20] The index captures women either solely or jointly owning the asset. The asset ownership index is significantly higher in the combined arm compared with cash transfers alone. Neither the cash transfer nor the workshop interventions on their own increase women's control of assets.[21]

The asset ownership index is composed of two sub-measures that capture the share of household assets owned by the woman alone or jointly with other family members, and an indicator for whether the woman owns at least two small or one large asset.[22] We find a statistically significant 5.0 percentage points increase in the share of assets owned by the woman in the combined arm (Table 2 column 3).[23] This is an almost 10% increase compared to a placebo mean of 53%. This increase is driven by increases in the share of assets owned by women across a range of assets: land, small and large livestock, consumer durables, and gold and silver jewellery. We also see an

[19] By the endline, households had withdrawn the cash transfers and either consumed or invested them. It is unclear whether women obtained any ownership rights over assets purchased with the cash transfer.

[20] The asset ownership index was not pre-specified but is constructed from two pre-specified measures of asset ownership to increase power. The original primary outcome – an indicator for asset ownership – has a very high mean in the control group, making it a weak measure. To address this, we combined it with a secondary measure, "Share of assets", to create an index that we report as the primary outcome.

[21] We do not see any heterogeneity by pre-specified dimensions on the asset index (Table A5).

[22] We follow the Women's Empowerment in Agriculture Index survey instrument and ask about the following list of assets: agricultural land, large livestock, small livestock, birds (chicken, ducks, turkeys or pigeons), fish pond or fishing equipment, farm equipment (non-mechanised), farm equipment (mechanised), non-farm business equipment, house (and other structures), large consumer durables (e.g. refrigerator), small consumer durables (e.g. radio), other land not used for agriculture, means of transportation (e.g. car, bicycle, motorcycle), gold and silver jewellery.

[23] Savings are another important aspect of resource control and household financial autonomy. There is a significant increase in household savings for all three treatment arms but we do not find a significant increase in savings held by the respondent in any arm (results not pre-specified and not shown). In the combined group only, we find an increase in women's savings held in Rotating Savings and Credit Associations (ROSCAs), a common method of saving in this area (Gugerty, 2007).

increase of 3.9 percentage points in an alternative measure, the probability that the woman owns fully or jointly any two small or one large asset, in the combined arm (Table 2 column 4). While significantly greater compared to the placebo group, this is not significantly different from the cash arm (p-value=0.112).[24]

Table 2: Impact on Control of Assets

	(1)	(2)	(3)	(4)
			Index Components	
	Household Non-Land Assets	Asset Ownership Index	Share of Assets Owned	Asset Ownership
Workshop	121.543	0.035	0.002	0.016
	(81.727)	(0.063)	(0.019)	(0.020)
	[.]	[.]	[1.000]	[1.000]
Cash	539.965***	0.072	0.028	0.012
	(87.573)	(0.064)	(0.019)	(0.020)
	[.]	[.]	[0.360]	[0.361]
Combined	500.665***	0.164***	0.050***	0.039**
	(78.417)	(0.061)	(0.019)	(0.019)
	[.]	[.]	[0.019]	[0.020]
p: Cash = Combined	0.675	0.088	0.217	0.112
q: Cash = Combined	.	.	0.278	0.278
p: Cash = Workshop	0.000	0.511	0.130	0.824
q: Cash = Workshop	.	.	0.350	0.701
p: Workshop = Combined	0.000	0.018	0.009	0.188
q: Workshop = Combined	.	.	0.018	0.105
Placebo mean	1,723.220	0.000	0.531	0.862
# obs	2890	2939	2939	2939

Notes: Household Non-Land Assets are the estimated value, if sold, of durable assets, livestock, and stocks of dried maize, as well as cash savings from the Household Survey in USD PPP. Columns (2) - (4) show outcomes for the female respondent. The Asset Ownership Index is a standardised index (Anderson, 2008) of the Share of Assets Owned (3) and Asset Ownership (4). We follow the Women's Empowerment in Agriculture index (WEAI) for the list of assets. Share of Assets Owned is the proportion of household assets which are owned solely by the woman, or jointly by the woman and family members. Asset Ownership is an indicator based on the WEAI measure for any two small or one large asset owned fully or jointly by the woman. Measures are defined in detail in Appendix B. All regressions include randomization block fixed effects and PDS Lasso selected controls. Robust standard errors clustered by village are shown in parentheses. Sharpened q-values are in square brackets. $^{*}p < 0.10,^{**}p < 0.05,^{***}p < 0.01$.

6.1.2 Consumption Shares

Next, we consider whether the allocation of household spending has increased for assignable goods and goods considered in the literature to be prioritised by women. In Table 3, columns (1)–(3), we present the effects on total household expenditures for food, women's and children's clothing and footwear, and children's education and in columns (4)–(6), we report the impact on the corresponding shares of these categories in total household consumption.

[24]We also pre-specified a second secondary measure: the value of the share of assets owned by the woman. This increases in all treatment arms. We do not think this is a good measure of women's empowerment, as it mechanically increases due to increases in the value of household assets in the cash and combined arms.

We see a significant increase in the share of spending on education from total non-food consumption in the combined arm (Table 3 column 6). An increase in spending on children is also often interpreted as a sign of an increase in women's bargaining power (Angelucci and Garlick, 2015; Duflo and Udry, 2004; Hidrobo et al., 2016). This finding is consistent with evidence of a positive impact on women's control of resources in the combined arm.[25]

Table 3: Impact on Consumption Shares

	(1) Food	(2) Female & Children Clothes	(3) Education	(4) Food Share	(5) Female & Children Clothes Share	(6) Educ. Share
Workshop	152.406	0.008	76.562*	0.003	-0.002	0.003
	(106.687)	(4.519)	(42.962)	(0.007)	(0.003)	(0.013)
	[0.289]	[0.499]	[0.289]	[1.000]	[1.000]	[1.000]
Cash	133.061	3.142	141.058***	-0.019***	-0.002	0.017
	(88.817)	(4.035)	(44.635)	(0.007)	(0.002)	(0.014)
	[0.155]	[0.252]	[0.005]	[0.020]	[0.197]	[0.197]
Combined	71.727	-1.107	201.558***	-0.016**	-0.003	0.039**
	(102.612)	(3.746)	(48.641)	(0.008)	(0.002)	(0.015)
	[0.941]	[1.000]	[0.001]	[0.037]	[0.056]	[0.035]
p: Cash = Combined	0.508	0.240	0.257	0.677	0.697	0.151
q: Cash = Combined	0.628	0.628	0.628	0.868	0.868	0.825
p: Cash = Workshop	0.837	0.502	0.201	0.000	0.957	0.343
q: Cash = Workshop	1.000	1.000	1.000	0.002	1.000	0.524
p: Workshop = Combined	0.429	0.805	0.017	0.004	0.729	0.016
q: Workshop = Combined	0.750	1.000	0.053	0.014	0.322	0.016
Placebo mean	2,936.074	71.431	642.196	0.651	0.048	0.329
# obs	2889	2889	2494	2888	2887	2492

Notes: Columns (1) - (3) report the total value of household consumption for each category in USD PPP. Food Share in column (4) is calculated as total food expenditures as a share of total household consumption. Food includes the value of purchased and home-produced food. Shares in columns (5) and (6) are calculated as a proportion of total household non-food spending. Female & Children Clothes include the total spending on women's and children's clothing and footwear. Educ. Expend. includes spending on schooling and school inputs for all household members aged 6 to 20. Measures are defined in detail in Appendix B. All regressions include randomisation block fixed effects, total consumption, geographic sublocations and demographic controls (household size, number of children aged 0 to 5 and 6 to 14, and age of the respondent). Robust standard errors clustered by village are shown in parentheses. Sharpened q-values are in square brackets. $^{*}p < 0.10,^{**}p < 0.05,^{***}p < 0.01$.

We do not find any major changes for any treatment arm in the share of spending on other items like food and women's, and children's clothing and footwear.[26,27] Prior studies have shown that cash transfers, particularly conditional cash transfers given to women, raise the share of food consumption or spending on children's goods despite income increasing (Angelucci and Attanasio,

[25] We do not see any heterogeneity by pre-specified dimensions on the education share (Table A5).

[26] Spending on food is analyzed as a share of total household consumption and the rest as a share of total non-food spending.

[27] We had also prespecified looking at share of spending on miscellaneous household goods such as soaps, detergents etc., and on health but do not report these results as it isn't clear that increases in women's empowerment would increase the spending share of these goods.

2013; Attanasio and Lechene, 2010; Armand et al., 2020; Bobonis, 2009). This is interpreted as being due to an increase in the woman's bargaining power, which shifts consumption to be more aligned with her preferences. Speculatively, the large nature of the transfer we study might mean that the crucial bargaining is over larger purchases or big expenditures like spending on children's education and not the smaller expenditures like food or clothing that have been typically looked at in the literature. Most studies have looked at consumption shares in the context of small, regular conditional cash transfers so it is difficult to draw comparisons with our setting, where there was a one-time large unconditional transfer. In line with this interpretation, Almås et al. (2019) find little difference in estimated elasticity for food between female and male recipients when analyzing a similar unconditional transfer to this study in nearby villages.

6.1.3 Economic Activity

In this setting, an increase in female labour supply is not an unambiguous welfare gain: women's economic participation is already widespread, and mobility constraints are minimal. Consistent with this, women in the placebo group report working around 340 days in a year across all household economic activities and outside the household (Table A6 column 1). We therefore did not pre-specify changes in labour supply or women's sole or joint enterprise ownership as empowerment indicators. However, it is still informative to understand what has happened to women's labour supply. Women in the cash arm significantly increase labour supply, while there is no change in the combined arm (Table A6). This appears in part due to increased hiring of outside labour in the combined arm, reducing the need for women to work harder themselves.

We also consider enterprise ownership as a potential channel through which women might enhance their economic participation. In the combined treatment group, women are 5.8 percentage points more likely to be managing a non-farm enterprise relative to those in the placebo group, with similar effects observed in the cash-only intervention (Table A7 column 1).[28] Nearly half of the women in the placebo group already report managing an enterprise, suggesting that women are already relatively empowered in this domain. Thus, it is not surprising that, even without the workshop intervention, women are able to assert ownership over some of the investments in non-farm enterprises when their households receive a cash transfer. In all arms, there is a significant increase in earnings from enterprises (Table A7 column 2). However, only in the combined treatment group do we observe a statistically significant increase in both the proportion of women who report having some input into production decisions and decisions about spending enterprise income, though this is not statistically different from cash (Table A7, columns 3–4). This suggests that combining the workshop with the cash transfers allows women to gain more agency in decisions around non-farm

[28]This includes enterprises that women manage jointly with their husbands. However, the results are largely unchanged when restricting the analysis to enterprises solely managed by women, as relatively few report joint management with their spouses.

enterprises at a time when their households are investing in them.

6.2 Intimate Partner Violence

As a final indicator of women's empowerment, we look at the woman's experience of intimate partner violence in the last 12 months. We measure all types of violence, as well as injuries sustained as a result of IPV. The primary prespecified measure, the IPV index, is an index of the frequency of physical and sexual violence.

The IPV index is significantly lower in the combined arm by 0.10 standard deviations as compared to the placebo group (Table 4 column 1). This is also significantly lower in the combined group as compared to those who just received the cash transfer, for whom there is no effect on IPV.[29] This result is driven by both the frequency of physical and sexual violence (Table 4, columns 2–3), which both have negative coefficients, though neither is individually statistically significant. This suggests that there are benefits from adding the workshop intervention to the cash transfer. We discuss the subgroups that drive this result in the cash and the combined groups in Section 6.2.1.

For alternative (pre-specified) measures of physical and sexual violence – the maximum frequency of violence and an indicator for any experience of violence – we find consistent patterns of results to those for the IPV index (Table A8 columns 1-2). We also look at two other types of IPV – controlling and emotional – and find that though the impact is not statistically significant, the coefficients for the combined intervention are negative, mirroring those for physical and sexual IPV (Table A8 columns 3-4).

To capture the severity of violence, we ask women about the incidence and frequency of injuries sustained as a result of violence in the last 12 months. We do not see a significant effect of any treatment on the frequency of injuries (Table A8 column 5). However, there is a 6 percentage point increase in the incidence of injuries sustained in the cash group as compared to the placebo group rate of injuries of 21% (Table A8 column 6). The incidence of injuries is significantly higher in the cash group than in both the placebo and combined groups. The 6 percentage points higher incidence of injuries translates into an additional 45 women (out of a total of 743 women) in the cash group who report being injured due to violence inflicted by their husbands in the last 12 months. We discuss who experiences this increase in injury incidence in the next section. We are not aware of any other study that directly estimates the effect of cash transfers on injuries.[30] This suggests an important dimension of violence, the severity of it, may have been overlooked in the literature.

[29] The insignificant effect of the cash transfer alone on violence is consistent with other studies of GiveDirectly transfers in the same region of Kenya (Egger et al., 2022; Haushofer et al., 2020).

[30] Hidrobo and Fernald (2013) attempt to capture injuries by asking women about going to a health centre due to an accident or injury. However, they find so few reports that they cannot analyze this.

Table 4: Impact on Intimate Partner Violence

	(1)	(2)	(3)
		Index Components	
	IPV Index	Physical IPV (0-12)	Sexual IPV (0-8)
Workshop	0.025	0.090	0.049
	(0.058)	(0.164)	(0.095)
	[.]	[1.000]	[1.000]
Cash	0.011	0.040	0.064
	(0.057)	(0.159)	(0.093)
	[.]	[1.000]	[1.000]
Combined	-0.102*	-0.165	-0.137
	(0.055)	(0.150)	(0.094)
	[.]	[0.376]	[0.376]
p: Cash = Combined	0.066	0.226	0.049
q: Cash = Combined	.	0.128	0.109
p: Cash = Workshop	0.834	0.777	0.893
q: Cash = Workshop	.	1.000	1.000
p: Workshop = Combined	0.054	0.143	0.100
q: Workshop = Combined	.	0.168	0.168
Placebo mean	0.000	2.287	1.350
# obs	2936	2936	2926

Notes: IPV index is constructed as a standardised index (Anderson, 2008) of the frequency of physical (column 2) and sexual (column 3) IPV. The min-max range of values for each outcome is in brackets next to the outcome name. Physical IPV and sexual IPV are the total scores for responses to a series of questions about the experience of violence from an intimate partner in the last 12 months that are answered on a 0 to 2 scale, with 0 being never, 1 sometimes and 2 often. The physical score is based on responses to 6 questions, and the sexual score is based on responses to 4 questions. We deviate from the PAP by excluding the following item from the definition of physical violence, as it represents a threat rather than an actual experience: 'Threaten to attack you with a knife, gun, or any other weapon'. Measures are defined in detail in Appendix B. All regressions include randomization block fixed effects and PDS Lasso selected controls. Robust standard errors clustered by village are shown in parentheses. Sharpened q-values are in square brackets. $^{*}p < 0.10,^{**}p < 0.05,^{***}p < 0.01$.

6.2.1 Does the Impact on IPV Differ by Respondent Type?

As discussed in section 3, theoretically, the impact of the interventions on women's experience of domestic violence is ambiguous, and backlash is possible. Some subgroups may be particularly vulnerable to backlash, and so there might be heterogeneity that averages out to produce a null effect (Angelucci, 2008; Hidrobo and Fernald, 2013). To test for this, we estimate heterogeneous treatment effects for a number of pre-specified respondent characteristics: the spousal gap in education and age, whether the woman has above-median education, whether she has a child aged 0-5, and whether she has above-median self-efficacy. This shows little evidence of heterogeneity (Table A9).

We carry out additional analysis, which was not pre-specified but helps unpack the average ITT effects. This suggests that there is significant heterogeneity in the treatment effects of the cash transfer. Women in a sub-group of households at risk of violence experience worsened IPV when they receive the cash transfer, an effect that is mitigated in the combined treatment.

We conduct sub-group analysis by using respondent and household baseline characteristics to predict the frequency of violence. To obtain the sub-groups, we run the 'endogenous stratification' exercise, following Abadie et al. (2018), using the leave-one-out estimator to estimate heterogeneity. This approach avoids over-fitting and ensures valid inference. We use a large number of women's own and household characteristics in the comprehensive Household Study baseline survey to predict the IPV index in the study placebo group. We use the leave-one-out estimator to estimate treatment heterogeneity between high, medium and low predicted frequency of violence. We split into three groups instead of dichotomising, since it preserves more information and recovers about half the efficiency loss (Gelman and Park, 2009).[31] Households and respondents in each of the three sub-groups produced from this exercise were different in a meaningful way at baseline (Table A10), with those in the high-risk of violence sub-group poorer, younger and less educated than those in the medium-risk and low-risk sub-groups. There are no differences in labour supply or aspirations across the risk groups.

There is substantial heterogeneity in the impact of the interventions on the IPV index by these sub-groups (Table A11 column (1) and Figure 1).[32] In the cash transfer group, there is a large significant increase of 0.24 standard deviations in the frequency of violence for the high-risk sub-group. In line with Angelucci (2008) and Hidrobo and Fernald (2013), this suggests caution that in some vulnerable households, violence may actually increase as a result of a transfer.

In the combined arm, we do not find any such increase in violence in the high-risk predicted group, and violence is significantly lower in the combined arm compared to the cash arm in the high-risk group. This suggests, promisingly, that combining the workshop intervention with the cash transfer mitigates the negative impact of the cash transfer on IPV for high-risk households. There is also a significant decline in the IPV index in the low-risk predicted sub-group assigned to the combined intervention as compared to placebo, though this is not statistically different from the decline also seen for those in the low-risk group assigned to the cash arm. Overall, this suggests that receiving the workshop alongside the cash transfer is protective for the most vulnerable.

We see a similar pattern of heterogeneity when we look at any injury as a result of violence: there is a small increase in injury incidence from the cash transfer on average (Table A8 column (6)) which is entirely driven by the high-risk group. Women in the high-risk subgroup experience a 9.5 percentage point increase in the likelihood of experiencing any injury as a result of violence when they receive the cash transfer (Table A11 column (2)).[33] Women in the combined arm at high risk of violence experience no increase in injuries, and the incidence of injuries is significantly lower compared to cash for high-risk women. Injury incidence is also significantly lower for low-risk women assigned to the combined intervention compared to those assigned to the cash arm. This

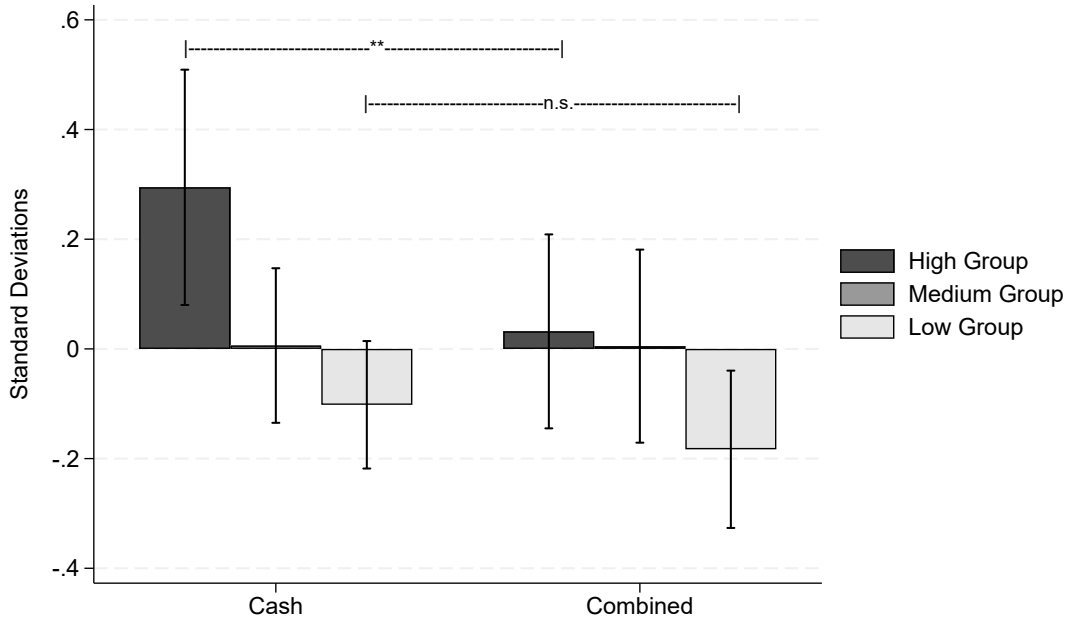
[31] We get similar results if we split into two groups instead.

[32] We confirm that positive effects of the cash and combined arms are still seen on household economic outcomes

[33] Interestingly the improvement in spousal harmony seen in Table 5 in both the cash and combined arms is driven by the low-risk group for cash (results not shown).

reinforces the finding that the combined intervention reduces violence compared to cash.

Figure 1: Heterogeneous Treatment Effects for IPV index by IPV Risk Groups



Notes: This figure plots the treatment effect and 90% confidence interval on the IPV index for the Cash and Combined interventions by low, medium and high IPV risk groups. n.s. indicates that the difference is not statistically significant. $^{*}p < 0.10,^{**}\ p < 0.05,^{***}\ p < 0.01$.

6.3 Aspirations and Bargaining

In this section, we examine the mechanisms referred to in the conceptual framework in Section 3 through which the interventions could have affected women's outcomes.

The workshop was designed to raise women's economic aspirations for their households and children, and, through doing so, may have encouraged them to try to bargain to take control of household resources in order to achieve those aspirations. Women's aspirations for their household's economic situation increased significantly in all arms, with the largest increases in the cash arms (Table 5 column 1). The increase in aspirations is larger in the combined arm compared to the cash arm, though not significantly so.[34] This suggests that increases in aspirations alone cannot be the mechanism through which the combined intervention leads to improvements in women's outcomes.

The workshop — by presenting couples who communicate effectively and women who advocate for their preferences — may shift women's communication and negotiation approaches and raise their willingness to bargain and hence their bargaining power. In the combined arm, this could increase

[34]The increase in aspirations is driven by all components: aspired assets and income in 10 years and years of education attained by a randomly selected child (Table A12). There is, unsurprisingly, a much larger impact on aspirations for future assets and income in the cash and combined arms compared to the workshop arm.

their influence over household decisions at the time the household receives a large amount of cash. We capture women's bargaining ability by looking at her use of negotiation during disputes, and her willingness to bargain in the form of joint household decision making. We find that a bargaining index[35], comprised of these two measures, significantly increases by 0.18 standard deviations in the combined arm (Table 5 column 2). The bargaining index is also significantly higher in the combined arm than the cash arm.

The first component of the bargaining index, negotiation, captures changes in women's bargaining with their partners in case of a dispute. We used the negotiation related elements from the conflict tactics scale (Straus et al., 1996) that capture methods couples use to resolve conflict. We find a marginally significant improvement in the combined arm in this scale, though this is not significantly different from the cash arm (Table 5 column 3).[36]

The second component of the bargaining index captures whether the interventions lead to changes in women's say in household decisions, which we interpret as the woman's willingness to bargain. We measure this as the number of decisions made jointly between the women and their spouse.[37] Since the role model workshop was only attended by the woman, any changes in joint decision-making most likely reflect a change in women's willingness and ability to convince partners to make decisions together. We find a large increase in joint decision making in the combined arm that is statistically significant as compared to both the cash and placebo groups (Table 5 column 4). Women in the combined arm make a quarter of a decision more out of seven jointly with their husbands, a 10% increase compared to the placebo group mean of 2.5 decisions being made jointly.

Finally, we also look at spousal harmony and find that it increases significantly in both the cash and combined treatment arms, with the difference not statistically significant between the two (Table 5 column 5). This might be attributable to the large injection of cash in the house, alleviating stress and reducing arguments between partners in the average household.

Overall, we find evidence that while all interventions raised economic aspirations, only in the combined arms did women negotiate better and make more decisions jointly with their husbands. This pattern is consistent with the cash transfer creating a salient bargaining moment and the workshop increasing women's willingness to engage at that moment. The workshop's narratives of constructive spousal communication appear to have provided a practical template for discussing women's economic participation precisely when household resources expanded, making women more likely to initiate and persist in bargaining.[38] In line with this mechanism, we find larger and

[35] Not pre-specified.

[36] We examine the reliability of all measures based on self-reported scales using Cronbach's alpha, which measures the extent to which all the items in each scale measure the same construct, or the inter-relatedness of the items (Cronbach, 1951). We removed two items from the negotiation scale, which were poorly translated and had low correlations with other items. If included, they reduce the reliability of the scale so that it does not have the recommended value above 0.7 (Streiner, 2003).

[37] Anderson (2022) shows that women's experience of violence is higher when men alone or they alone make household decisions, and lowest when decisions are made jointly.

[38] The workshop intervention contained numerous examples of good communication, healthy discussions and

statistically significant effects of the combined arm — relative to each arm individually —on joint decision-making.

Table 5: Impact on Mechanisms

	(1)	(2)	(3)	(4)	(5)
			Bargaining Index Components		
	Aspirations Index	Bargaining Index	Negotiation (0-12)	Joint Decision Making (0-7)	Spousal Harmony (0-18)
Workshop	0.089*	0.058	0.238	-0.016	0.160
	(0.053)	(0.063)	(0.227)	(0.137)	(0.252)
	[.]	[.]	[1.000]	[1.000]	[1.000]
Cash	0.191***	0.078	0.205	-0.094	0.447*
	(0.058)	(0.057)	(0.187)	(0.114)	(0.229)
	[.]	[.]	[0.377]	[0.377]	[0.181]
Combined	0.252***	0.183***	0.322*	0.236**	0.526**
	(0.057)	(0.055)	(0.185)	(0.117)	(0.234)
	[.]	[.]	[0.071]	[0.071]	[0.071]
p: Cash = Combined	0.352	0.062	0.525	0.003	0.722
q: Cash = Combined	.	.	0.929	0.009	0.929
p: Cash = Workshop	0.093	0.746	0.885	0.551	0.227
q: Cash = Workshop	.	.	1.000	1.000	1.000
p: Workshop = Combined	0.007	0.047	0.705	0.062	0.139
q: Workshop = Combined	.	.	0.308	0.229	0.229
Placebo mean	0.000	0.000	7.217	2.460	13.897
# obs	2889	2939	2939	2939	2939

Notes: The aspirations index is constructed as a standardised index (Anderson, 2008) of aspirations for household income and wealth in ten years and for years of education of a randomly selected child. The bargaining index is constructed as a standardised index (Anderson, 2008) of negotiation (column 3) and joint decision making (column 4). Negotiation ranges from 0 to 12 and is the sum of responses to the frequency of behaviours that show good negotiation skills, such as suggesting a compromise and being positive about finding a solution, displayed by the respondent and her spouse during a dispute. Joint decision making ranges from 0 to 7 and is the sum of seven indicator indicators for the woman and her partner jointly making different types of household decisions. Spousal harmony ranges from 0 to 18 and is the sum of the frequency of major arguments about a range of issues, reverse-coded such that higher values reflect fewer arguments. Negotiation and spousal harmony frequency is measured on a scale of 3 if often, 2 if sometimes, 1 if once or twice, and 0 if never. Measures are defined in detail in Appendix B. All regressions include randomization block fixed effects and PDS Lasso selected controls. Robust standard errors clustered by village are shown in parentheses. Sharpened q-values are in square brackets. $^{*}p < 0.10,^{**}p < 0.05,^{***}p < 0.01$.

We look at a range of potential alternative mechanisms related to beliefs and preferences through which the interventions could have affected women's outcomes. We find no evidence in support of any intervention changing women's self-beliefs, beliefs about returns to investment activities, and time and risk preferences (Table A13).

We also rule out that the interventions operated through a change in attitudes towards violence. Women's own attitudes determine their disutility from violence. While these don't directly impact her outside option, they have an impact on household bargaining by lowering her utility from

compromise, but did not explicitly train women in how to approach discussion or negotiate for what they wanted. Instead, the workshop is more likely to have prompted women that such discussions are worthwhile and worth having when there is something so significant to bargain over, namely the cash transfer.

staying in the marriage. In addition, village-level attitudes may determine both the men's and women's disutility from violence. While neither intervention was designed to target attitudes, cash transfers may shift village-level norms due to changes in violence in cash transfer recipient households (Haushofer et al., 2019). The workshop intervention could shift women's own attitudes since the video shows women similar to the respondents in positive consultative relationships. We find no significant change, from any treatment, in women's own or their perception of village attitudes towards a series of scenarios in which violence by the husband is justified (Table A14).[39] This lack of change in attitudes is also consistent with other studies even when they sought to change attitudes, such as Green et al. (2020).

6.4 Experimenter Demand

As is standard practice in the literature in poor rural settings with limited administrative data, our outcomes rely on self-reported measures. This raises potential concerns about social desirability where the respondents give responses they believe align with the intervention or surveyors' expectations. For example, in the cash and combined arms, participants might worry that if they report conflict or IPV, the cash transfer may be taken away. Additionally, in the combined arm this could be due to perceived labelling by the partner NGO through the video. We discuss four reasons that suggest this does not drive the results.

First, the role model video made no reference to household conflict or violence. It did depict women leading businesses and engaging in positive, consultative relationships with their partners, which could prompt women to report more favourable outcomes. However, if such a reporting bias were at play, we would expect similar improvements in the workshop-only arm as the combined arm, which we do not observe. Demand effects could be interactive if, for example, the workshop primed desirable outcomes and the cash transfer provided the motivation to report them. However, the combined arm does not show uniform improvement across all outcomes, as would be expected under interactive effects.

Second, the surveyors were unaware of the treatment assignments for the villages, which limited the potential for differential prompting or probing of respondents. Additionally, even if participants mentioned the workshop during the endline survey, enumerators could not easily discern whether they were referring to the role model and facilitated exercises workshop or the placebo workshop, since they contained the same video scenes and structure.

Third, we used Audio Computer-Assisted Self-Interview (ACASI) to measure violence so the women did not have to respond directly to the enumerator. Like other studies that have used

[39] We also measured implicit attitudes toward IPV using an Implicit Association Test (IAT). Unfortunately, the response rate was too slow for 33% of the sample, making the data unusable for that subgroup (Greenwald et al., 2003). For the remaining sample (n = 1,975), we estimated treatment effects on the prespecified implicit attitude score (d-score), following Greenwald et al. (1998). Consistent with the findings for directly elicited attitudes, we find no significant impact of any treatment arm on this measure.

ACASI, we find much higher rates of violence reported than with traditional face-to-face questioning (Park et al., 2021; Peterman et al., 2023).

Fourth, the NGO partner encouraged recipients to report household conflicts via a toll-free call centre and never withheld transfers due to such conflicts. In cases of separation, transfers were simply split between partners. Moreover, by the time of the endline survey, households had already received all their cash transfer tranches, further reducing the likelihood that concerns about losing benefits would influence reporting.

7 Conclusion

We study a novel approach to empowering women at a pivotal moment, when household resources increase, to boost the effects of economic interventions on women's outcomes. Rather than directly targeting gender norms or IPV, the intervention exposes women to role models and takes them through facilitated planning exercises in a brief 80-minute session. While role model-based interventions have been studied, no prior work has experimentally examined their effects on women's outcomes, or how they work in combination with economic interventions, such as the cash transfer we study.

We find that combining the workshop with the cash transfer significantly increases women's control of household assets and reduces their experience of intimate partner violence as compared to the cash only (and placebo) groups, whereas the cash and workshop interventions on their own have limited effects. This is despite all interventions improving household economic outcomes. All interventions raise women's economic aspirations, but only the combined intervention improves women's bargaining: women report significantly higher rates of joint decision making with their spouses. Exposure to role models with positive relationships who have succeeded economically may increase women's willingness to bargain at the crucial moment when their household receives a cash transfer.

Overall, these results highlight the potential for a short, light-touch role model intervention to improve outcomes for women at moments of exogenous increases in household economic resources. This is important for policy because anti-poverty programmes such as lump-sum large cash transfers have strong positive effects on household economic outcomes, and adding a brief intervention that improves women's outcomes can enhance the potential of these programmes.

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A Appendix

Figure A1: Screenshots from the Role Model Videos













Figure A2: Timeline of Surveys and Intervention Activities

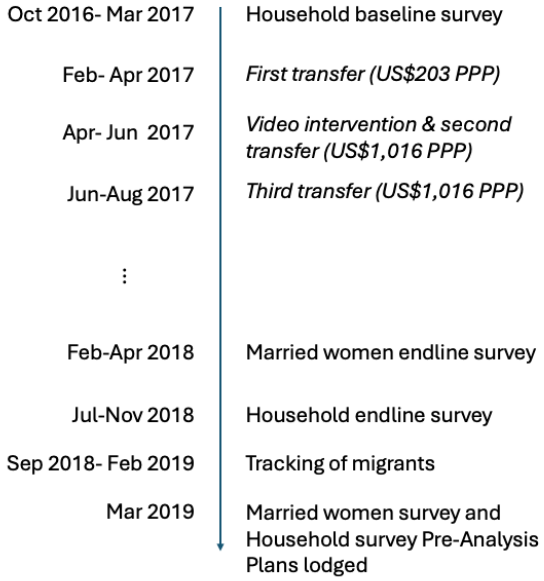


Table A1: Summary Statistics and Test of Balance, Baseline Sample

		Assigned-Cash		**Assigned-Workshop**		**Assigned-Combined**		
	Sample Mean	Coeff	p-value	Coeff	p-value	Coeff	p-value	Overall p-value
Age	30.807	-0.646	0.134	0.935	0.056	-0.295	0.484	0.995
Education (yrs)	10.731	-0.025	0.895	-0.363	0.071	-0.032	0.872	0.366
Partner Age	38.897	-0.713	0.183	1.338	0.025	0.045	0.932	0.604
Partner Education (yrs)	11.818	0.109	0.585	-0.297	0.138	0.209	0.335	0.965
Years Married	14.296	-0.469	0.314	1.772	0.001	-0.007	0.988	0.269
Number of Household Members	6.104	-0.087	0.418	0.209	0.050	0.146	0.161	0.300
Number of Children	3.692	-0.092	0.416	0.147	0.175	0.120	0.284	0.531
Number of Children (0-5)	0.960	0.037	0.440	-0.016	0.699	0.045	0.310	0.524
Women's Labour Supply	279.330	2.802	0.841	13.863	0.348	11.790	0.386	0.390
Self-efficacy Score	22.177	0.052	0.843	-0.070	0.793	-0.344	0.193	0.559
Non-Land Assets (USD PPP)	1286.015	68.682	0.498	135.303	0.162	107.584	0.285	0.208

Notes: This table shows balance at baseline for the baseline sample of 3291. Years married is the number of years the respondent has been married to her current spouse. Self-efficacy is measured using the Schwarzer and Jerusalem (1995) 10-item scale. Non-land assets are for the household and include household durables, livestock, cash savings and net financial liabilities for the household. Women's labour supply is measured in days scaled to yearly. Coefficients and p-values are obtained from the regression of the covariate on each treatment indicator and stratification of block fixed effects and the corresponding test of the null that the coefficient equals zero. The F-test null hypothesis is that the sum of the coefficients of the treatment indicators equals zero (reported under overall p-value). Standard errors are clustered by village.

Table A2: Summary Statistics and Test of Balance, Endline Sample

		Assigned-Cash		**Assigned-Workshop**		**Assigned-Combined**		
	Sample Mean	Coeff	p-value	Coeff	p-value	Coeff	p-value	Overall p-value
Age	30.841	-0.891	0.051	0.746	0.138	-0.519	0.254	0.570
Education (yrs)	10.748	-0.057	0.774	-0.423	0.044	-0.081	0.689	0.254
Partner Age	38.886	-0.928	0.097	1.093	0.065	-0.124	0.825	0.976
Partner Education (yrs)	11.845	-0.019	0.930	-0.389	0.072	0.104	0.653	0.575
Years Married	14.296	-0.469	0.314	1.772	0.001	-0.007	0.988	0.269
Number of Household Members	6.185	-0.211	0.061	0.105	0.342	-0.034	0.772	0.620
Number of Children	3.776	-0.174	0.136	0.070	0.544	-0.041	0.743	0.634
Number of Children (0-5)	0.971	0.060	0.243	-0.013	0.786	0.042	0.379	0.441
Women's Labour Supply	282.948	-3.164	0.832	10.971	0.494	4.175	0.785	0.751
Self-efficacy Score	22.170	0.102	0.709	0.029	0.917	-0.298	0.286	0.803
Non-Land Assets (USD PPP)	1300.923	58.080	0.622	110.504	0.323	77.940	0.484	0.395

Notes: This table shows balance at baseline for the endline sample of 2939. Years married is the number of years the respondent has been married to her current spouse. Self-efficacy is measured using the Schwarzer and Jerusalem (1995) 10-item scale. Non-land assets are for the household and include household durables, livestock, cash savings and net financial liabilities for the household. Women's labour supply is measured in days scaled to yearly. Coefficients and p-values are obtained from the regression of the covariate on each treatment indicator and stratification of block fixed effects and the corresponding test of the null that the coefficient equals zero. The F-test null hypothesis is that the sum of the coefficients of the treatment indicators equals zero (reported under overall p-value). Standard errors are clustered by village.

Table A3: Attrition

	(1) Attrition
Workshop	0.026
	(0.019)
Cash	0.014
	(0.017)
Combined	0.023
	(0.021)
Placebo Mean	0.09
# obs	3291

Notes: This table reports ITT estimates from a regression of attrition on a vector of treatment dummies and randomisation block fixed effects. Attrition is a binary variable equal to 1 if the woman was not surveyed at endline. Heteroskedasticity-robust standard errors clustered at the village level are in parentheses. $p < 0.01 * * *p < 0.01, * * p < 0.05, *p < 0.1$.

Table A4: Impact on Household Economic Behaviour

	(1) Economic Index	(2) Inputs & Hired Labour	(3) Labour Supplied (Days)	(4) Revenue	(5) Non-Land Assets	(6) Consumption
Workshop	0.161***	468.842**	38.764	601.081*	121.543	280.706*
	(0.057)	(211.813)	(23.917)	(307.396)	(81.727)	(154.060)
	[.]	[0.129]	[0.129]	[0.129]	[0.129]	[0.129]
Cash	0.311***	547.163***	66.003***	759.788***	539.965***	459.961***
	(0.057)	(196.761)	(22.860)	(279.440)	(87.573)	(158.713)
	[.]	[0.006]	[0.006]	[0.006]	[0.001]	[0.006]
Combined	0.238***	971.842**	13.765	1095.394*	500.665***	363.957**
	(0.058)	(425.615)	(19.751)	(612.515)	(78.417)	(181.117)
	[.]	[0.047]	[0.108]	[0.060]	[0.001]	[0.060]
p: Cash = Combined	0.240	0.313	0.016	0.591	0.675	0.589
q: Cash = Combined	.	1.000	0.089	1.000	1.000	1.000
p: Cash = Workshop	0.011	0.710	0.274	0.604	0.000	0.235
q: Cash = Workshop	.	0.840	0.575	0.840	0.001	0.575
p: Workshop = Combined	0.183	0.094	0.280	0.282	0.000	0.614
q: Workshop = Combined	.	0.233	0.310	0.310	0.001	0.545
Placebo mean	-0.000	1,192.929	718.814	2,710.379	1,723.220	4,815.240
# obs	2890	2890	2886	2890	2890	2890

Notes: This table shows the household-level treatment effects on Economic Behavior and Outcomes reported in Orkin et al. (2025) for this study sample. All currency values are measured in 2018 USD PPP. Input expenditure includes purchase of inputs and stocks and inventory, rental, maintenance, and expenditure on hired labour, for household activities in crop agriculture and livestock rearing, and for non-farm enterprises owned or operated by household members. Labour supply is days of work on farm and non-farm household enterprises or supplied to the market, for all household members older than 15. Revenue captures the value of production sold or consumed at home from these activities, valued at farm-gate prices. Non-land assets are the estimated value, if sold, of durable assets, livestock, and stocks of dried maize, as well as cash savings. Consumption expenditure captures the annual value of purchased and home-produced food, non-durable and durable household goods, social expenditure, and education expenditure for household members aged 6-20. The outcome in column (1) is a standardised index (Anderson, 2008) of the outcomes in columns (2)-(6). All regressions include randomization block fixed effects and PDS Lasso selected controls. Robust standard errors clustered by village are shown in parentheses. Sharpened q-values are in square brackets.$^{*}p < 0.10,^{**}p < 0.05,^{***}p < 0.01$. The number of observations varies slightly across columns because some respondents don't answer all questions.

Table A5: Heterogeneity Analysis for Asset Index and Education Share

	Schooling Gap 1		Schooling Gap 2		Age difference		Above median education		Has child aged 0 to 5		Above median self-efficacy	
	Asset Index (1)	Educ Share (2)	Asset Index (3)	Educ Share (4)	Asset Index (5)	Educ Share (6)	Asset Index (7)	Educ Share (8)	Asset Index (9)	Educ Share (10)	Asset Index (11)	Educ Share (12)
Workshop	0.040	0.004	0.040	0.007	0.028	0.006	0.152	0.024	0.115	-0.010	-0.015	-0.004
	(0.064)	(0.014)	(0.073)	(0.019)	(0.071)	(0.018)	(0.146)	(0.044)	(0.081)	(0.023)	(0.086)	(0.020)
Cash	0.073	0.005	0.090	-0.002	0.089	0.017	0.037	-0.003	0.096	0.024	0.030	0.002
	(0.066)	(0.014)	(0.077)	(0.017)	(0.074)	(0.018)	(0.179)	(0.043)	(0.094)	(0.028)	(0.081)	(0.022)
Combined	0.183***	0.023	0.202***	0.021	0.143**	0.032*	0.168	0.039	0.214**	0.037	0.189**	0.012
	(0.061)	(0.015)	(0.070)	(0.020)	(0.068)	(0.018)	(0.148)	(0.049)	(0.088)	(0.026)	(0.080)	(0.020)
HTE	0.007	0.003	0.098	0.033	-0.002	-0.000	-0.003	0.010***	0.071	-0.022	0.027	-0.016
	(0.009)	(0.003)	(0.060)	(0.029)	(0.005)	(0.001)	(0.009)	(0.003)	(0.060)	(0.022)	(0.067)	(0.019)
HTE*Workshop	-0.004	0.002	-0.016	-0.008	0.001	-0.001	-0.011	-0.002	-0.139	0.022	0.100	0.017
	(0.012)	(0.004)	(0.089)	(0.032)	(0.007)	(0.002)	(0.013)	(0.004)	(0.095)	(0.027)	(0.101)	(0.025)
HTE*Cash	-0.001	0.004	-0.050	0.027	-0.003	-0.002	0.003	0.001	-0.020	-0.023	0.077	0.015
	(0.012)	(0.004)	(0.093)	(0.033)	(0.007)	(0.002)	(0.015)	(0.004)	(0.101)	(0.030)	(0.099)	(0.027)
HTE*Combined	-0.017	0.002	-0.099	0.008	0.003	-0.001	-0.000	-0.001	-0.061	-0.017	-0.049	0.029
	(0.012)	(0.004)	(0.089)	(0.036)	(0.006)	(0.002)	(0.013)	(0.004)	(0.098)	(0.028)	(0.093)	(0.028)
Observations	2939	2671	2939	2671	2930	2662	2939	2671	2939	2671	2939	2671

Notes: HTE refers to the baseline characteristic being used for analysis. Schooling gap 1 is years of education of spouse minus years of education of the woman, schooling gap 2 is an indicator variable equal to one if the woman has less years of education than her spouse, age difference is the difference in age of the respondent from her spouse, above median education is an indicator for woman having above median education, has child aged 0 to 5 is an indicator for having a child aged 0 to 5 and above median self-efficacy is an indicator for having above median self-efficacy. $***p < 0.01, **p < 0.05, *p < 0.1$.

Table A6: Impact on Labour Supply and Labour Demand

	(1) Women's Labour Supply	(2) Days of Hired Labour
Workshop	6.475	6.819
	(13.411)	(5.210)
	[0.616]	[0.616]
Cash	18.927*	10.857**
	(11.426)	(5.422)
	[0.100]	[0.100]
Combined	-0.055	18.114***
	(12.278)	(6.823)
	[0.993]	[0.017]
p: Cash = Combined	0.076	0.269
q: Cash = Combined	0.180	0.180
p: Cash = Workshop	0.295	0.396
q: Cash = Workshop	0.655	0.655
p: Workshop = Combined	0.610	0.064
q: Workshop = Combined	0.440	0.147
Placebo mean	341.031	26.553
# obs	2865	2890

Notes: This table shows the impact on women's labour supply measured in days scaled to yearly. Days of hired labour are the number of days of labour hired across all household economic activities scaled to yearly. All regressions include randomization block fixed effects and PDS Lasso selected controls. Robust standard errors clustered by village are shown in parentheses. Sharpened q-values are in square brackets. $^{*}p < 0.10,^{**} p < 0.05,^{***} p < 0.01$. The number of observations varies slightly across columns because some respondents don't answer all questions.

Table A7: Impact on Non-Farm Enterprise Ownership and Input in Enterprise Decisions

	(1) Enterprise Ownership	(2) Enterprise Profits	(3) Input in Production Decisions	(4) Input in Income Spending Decisions
Workshop	0.031	310.740***	0.007	0.013
	(0.026)	(121.338)	(0.035)	(0.033)
	[0.538]	[0.044]	[0.874]	[0.874]
Cash	0.077***	339.863***	0.055*	0.051
	(0.026)	(96.187)	(0.034)	(0.033)
	[0.006]	[0.002]	[0.067]	[0.067]
Combined	0.058**	395.699*	0.079**	0.082***
	(0.029)	(225.971)	(0.031)	(0.030)
	[0.032]	[0.042]	[0.024]	[0.024]
p: Cash = Combined	0.566	0.810	0.496	0.364
q: Cash = Combined	1.000	1.000	1.000	1.000
p: Cash = Workshop	0.128	0.813	0.203	0.309
q: Cash = Workshop	0.686	0.686	0.686	0.686
p: Workshop = Combined	0.419	0.640	0.050	0.050
q: Workshop = Combined	0.388	0.471	0.111	0.111
Placebo mean	0.461	366.863	0.480	0.474
# obs	2863	2771	2939	2939

Notes: Enterprise ownership is in an indicator variable for the woman owning an enterprise, whether solely or jointly. Enterprise profits are in USD PPP scaled to yearly from reported profits in the last 30 days. Production decision input is an indicator variable if the woman has input in making at least some of the decisions about the enterprise. Income decision input is an indicator variable if the woman has input in making at least some of the decisions about how to spend the income generated from the enterprise. All regressions include randomization block fixed effects and PDS Lasso selected controls. Robust standard errors clustered by village are shown in parentheses. Sharpened q-values are in square brackets. $^{*}p < 0.10,^{**}p < 0.05,^{***}p < 0.01$. The number of observations varies slightly across columns because some respondents don't answer all questions.

Table A8: Impact on Maximum Frequency and Incidence of IPV

	(1) Maximum Violence Score	(2) Any Violence	(3) Controlling IPV (0-12)	(4) Emotional IPV (0-9)	(5) Injuries (0-6)	(6) Any Injury
Workshop	0.030	0.012	0.103	0.053	-0.003	0.025
	(0.045)	(0.026)	(0.177)	(0.126)	(0.057)	(0.024)
	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]
Cash	-0.023	-0.009	0.028	0.026	0.076	0.059***
	(0.046)	(0.026)	(0.161)	(0.117)	(0.061)	(0.023)
	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[0.067]
Combined	-0.079*	-0.047*	-0.076	-0.096	-0.009	0.011
	(0.047)	(0.028)	(0.198)	(0.116)	(0.056)	(0.023)
	[0.418]	[0.418]	[1.000]	[1.000]	[1.000]	[1.000]
p: Cash = Combined	0.239	0.177	0.562	0.292	0.151	0.052
q: Cash = Combined	0.450	0.450	0.541	0.450	0.450	0.450
p: Cash = Workshop	0.249	0.414	0.638	0.835	0.226	0.182
q: Cash = Workshop	0.990	0.990	0.990	0.990	0.990	0.990
p: Workshop = Combined	0.019	0.027	0.356	0.244	0.923	0.577
q: Workshop = Combined	0.090	0.090	0.553	0.483	0.954	0.858
Placebo mean	1.031	0.743	2.444	1.354	0.433	0.211
# obs	2939	2939	2938	2939	2916	2916

Notes: Maximum score is measured as the maximum frequency reported over all questions on physical and sexual violence following Roy et al. (2019). Any violence is an indicator for the respondent reporting experiencing any physical or sexual violence in the last 12 months. Controlling IPV ranges from 0 to 12 and is the sum of four categorical variables capturing various dimensions (non-financial) of controlling behaviour by the spouse. Emotional IPV ranges from 0 to 9 and is the response to questions on the frequency of three types of emotional abuse by the husband. For emotional and controlling IPV, frequency is reported on a scale of 3 if often, 2 if sometimes, 1 if once or twice, and 0 if never and higher values correspond with higher IPV. Injuries is a score based on responses to 3 questions on a scale of 0 to 2, with 0 being never, 1 sometimes and 2 often. Any injury is an indicator for the respondent reporting experiencing any injury as a result of an action by their spouse in the last 12 months. Measures are defined in detail in Appendix B. All regressions include randomization block fixed effects and PDS Lasso selected controls. Robust standard errors clustered by village are shown in parentheses. Sharpened q-values are in square brackets. $^{*}p < 0.10,^{**}p < 0.05,^{***}p < 0.01$. The number of observations varies slightly across columns because some respondents don't answer all questions.

Table A9: Heterogeneity Analysis for IPV

	Schooling Gap 1	Schooling Gap 2	Age difference	Above median education	Has child aged 0 to 5	Above median self-efficacy
	IPV Index	IPV Index	IPV Index	IPV Index	IPV Index	IPV Index
	(1)	(2)	(3)	(4)	(5)	(6)
Workshop	0.020	0.052	-0.073	0.029	-0.107	0.014
	(0.058)	(0.067)	(0.070)	(0.216)	(0.091)	(0.078)
Cash	0.017	0.057	-0.030	0.267	-0.074	-0.015
	(0.058)	(0.074)	(0.071)	(0.242)	(0.102)	(0.080)
Combined	-0.099*	-0.078	-0.169**	0.045	-0.090	-0.138*
	(0.055)	(0.064)	(0.066)	(0.213)	(0.093)	(0.079)
HTE	-0.017*	-0.067	-0.003	-0.029**	-0.061	0.009
	(0.009)	(0.082)	(0.006)	(0.013)	(0.073)	(0.081)
HTE*Workshop	0.001	-0.071	0.020**	-0.000	0.204*	0.022
	(0.015)	(0.108)	(0.008)	(0.019)	(0.105)	(0.108)
HTE*Cash	-0.005	-0.109	0.008	-0.024	0.125	0.048
	(0.013)	(0.118)	(0.009)	(0.021)	(0.113)	(0.117)
HTE*Combined	-0.001	-0.050	0.012	-0.014	-0.019	0.073
	(0.014)	(0.107)	(0.008)	(0.018)	(0.102)	(0.111)
Observations	2936	2936	2927	2936	2936	2936

Notes: HTE refers to the baseline characteristic being used for analysis. Schooling gap 1 is years of education of spouse minus years of education of the woman, schooling gap 2 is an indicator variable equal to one if the woman has less years of education than her spouse, age difference is the difference in age of the respondent from her spouse, above median education is an indicator for woman having above median education, has child aged 0 to 5 is an indicator for having a child aged 0 to 5 and above median self-efficacy is an indicator for having above median self-efficacy. $***p < 0.01, **p < 0.05, *p < 0.1$.

Table A10: Characteristics of Respondents, by Predicted IPV Risk Groups

Variable	(1) Low Mean/(SE)	(2) Medium Mean/(SE)	(3) High Mean/(SE)	(1)-(2) Mean difference	(1)-(3) Pairwise t-test Mean difference	(2)-(3) Mean difference
Age	36.617	29.408	26.483	7.209***	10.134***	2.925***
	(0.287)	(0.275)	(0.217)			
Partner Age	43.831	37.148	34.849	6.683***	8.983***	2.300***
	(0.360)	(0.371)	(0.370)			
Education (yrs)	12.014	11.110	9.119	0.904***	2.896***	1.992***
	(0.104)	(0.113)	(0.115)			
Partner Education (yrs)	13.094	12.094	10.350	1.000***	2.744***	1.744***
	(0.103)	(0.120)	(0.119)			
Years Married	17.788	12.838	12.221	4.949***	5.567***	0.618
	(0.313)	(0.300)	(0.301)			
Household size	7.189	5.888	5.465	1.301***	1.724***	0.422***
	(0.074)	(0.063)	(0.060)			
Number of Children	4.644	3.541	3.138	1.103***	1.505***	0.403***
	(0.072)	(0.058)	(0.055)			
Number of Children (0-5)	0.909	1.054	0.953	-0.145***	-0.044	0.101***
	(0.028)	(0.027)	(0.028)			
Household Asset Value	1937.667	1123.031	1071.148	814.635***	866.518***	51.883
	(84.568)	(48.830)	(48.306)			
Household Consumption	5717.230	4658.312	5185.118	1058.918***	532.112***	-526.806***
	(121.315)	(95.827)	(130.882)			
Labor Supply Woman	279.236	282.847	286.834	-3.611	-7.598	-3.988
	(7.331)	(7.418)	(8.979)			
Aspirations Index	-0.005	0.006	0.024	-0.011	-0.029	-0.018
	(0.034)	(0.029)	(0.036)			
Number of observations	979	978	978	1957	1957	1956
Number of clusters	174	173	171	176	176	176

Notes: This table reports average values for selected household and respondent characteristics for sub-groups. These sub-groups are obtained by splitting the sample by predicted IPV Index (frequency of physical and sexual violence in the last 12 months) using a range of baseline covariates. $^{*}p < 0.10,^{**}p < 0.05,^{***}p < 0.01$.

Table A11: Impact on IPV by the Predicted IPV Risk Groups

	(1) IPV Index	(2) Any Injury
Workshop	-0.008	0.011
	(0.106)	(0.051)
Cash	0.238**	0.095**
	(0.116)	(0.038)
Combined	-0.007	0.021
	(0.089)	(0.038)
Workshop * Low Risk Group	-0.028	0.002
	(0.129)	(0.060)
Cash * Low Risk Group	-0.398***	-0.064
	(0.120)	(0.051)
Combined * Low Risk Group	-0.215*	-0.056
	(0.121)	(0.049)
Workshop * Medium Risk Group	0.136	0.042
	(0.137)	(0.061)
Cash * Medium Risk Group	-0.260*	-0.051
	(0.138)	(0.054)
Combined * Medium Risk Group	-0.058	0.022
	(0.144)	(0.055)
p: Cash = Combined	0.020	0.073
TE: Cash + Cash*Low	-0.159	0.030
TE: Combined + Combined*Low	-0.223	-0.035
p: Cash + Cash*Low = Combined+Combined*Low	0.427	0.057
TE: Cash + Cash*Med	-0.021	0.043
TE: Combined + Combined*Med	-0.065	0.043
p: Cash + Cash*Med = Combined+Combined*Med	0.673	0.996
Placebo Mean High Risk Group	0.110	0.249
# obs	2932	2912

Notes: This table reports ITT estimates from regression of the IPV index on a vector of treatment assignments, treatment assignments interacted with risk groups, risk group fixed effects, PDS lasso selected controls and randomization block fixed effects. The risk groups are the predicted IPV index sub-groups obtained by splitting the sample by predicted IPV Index (frequency of physical and sexual violence) using a range of baseline covariates, as outlined in section 6.2.1. Standard errors are derived using bootstrap methods and reported in parentheses. TE are the total effect from the linear combination of coefficients reported in that row. p are p-values from the test reported in that row. $***p < 0.01, **p < 0.05, *p < 0.1$.

Table A12: Impact on Aspirations

	(1) Aspirations Index	(2) Assets	(3) Income	(4) Education
Workshop	0.089*	224.560	236.850	0.163*
	(0.053)	(931.378)	(345.481)	(0.099)
	[.]	[1.000]	[0.973]	[0.421]
Cash	0.191***	2818.107***	804.288**	0.170*
	(0.058)	(892.111)	(353.866)	(0.100)
	[.]	[0.005]	[0.024]	[0.036]
Combined	0.252***	4266.691***	884.623**	0.132
	(0.057)	(980.662)	(435.646)	(0.087)
	[.]	[0.001]	[0.045]	[0.068]
p: Cash = Combined	0.352	0.156	0.864	0.668
q: Cash = Combined	.	0.882	1.000	1.000
p: Cash = Workshop	0.093	0.006	0.145	0.943
q: Cash = Workshop	.	0.018	0.170	0.459
p: Workshop = Combined	0.007	0.000	0.123	0.706
q: Workshop = Combined	.	0.001	0.141	0.308
Placebo mean	0.000	10045.959	6,388.440	15.586
# obs	2889	2876	2876	2277

Notes: This table shows the household-level treatment effects on the Aspirations Index reported in Orkin et al. (2025) for this study sample. Column (1) is an Anderson (2008) index consisting of variables in columns (2), (3) and (4). The index definition includes all observations that have non-missing values for at least one component, using only the non-missing components in the averaging. Income aspirations are the level of annual income that a household would like to reach at the end of the next ten years. Income is defined as all sources of cash income for the household, including earnings from production and transfers from any NGO or government programmes. Asset aspirations are the level of assets that the household would like to reach at the end of the next ten years, including their house, furniture, consumer goods and a transport vehicles. Income and assets are measured in constant 2018 USD PPP. Education aspirations are the aspirations for years of education attained by a randomly selected child, set to missing for households without children. All regressions include randomization block fixed effects and PDS Lasso selected controls. Robust standard errors clustered by village are shown in parentheses. Sharpened q-values are in square brackets. $^{*}p < 0.10$,$^{**}p < 0.05$,$^{***}p < 0.01$. The number of observations varies slightly across columns because some respondents don't answer all questions.

Table A13: Impact on Alternative Mechanisms

	(1) Self-Beliefs Index	(2) Returns Index	(3) No Present Bias	(4) Risk Taking
Workshop	0.051	0.034	0.005	0.055
	(0.067)	(0.060)	(0.025)	(0.108)
	[1.000]	[1.000]	[1.000]	[1.000]
Cash	-0.054	0.063	0.017	-0.047
	(0.055)	(0.061)	(0.021)	(0.106)
	[1.000]	[1.000]	[1.000]	[1.000]
Combined	0.040	0.054	-0.011	-0.033
	(0.062)	(0.061)	(0.023)	(0.090)
	[1.000]	[1.000]	[1.000]	[1.000]
p: Cash = Combined	0.093	0.880	0.204	0.902
q: Cash = Combined	0.590	0.822	0.590	0.822
p: Cash = Workshop	0.091	0.594	0.635	0.397
q: Cash = Workshop	0.573	0.910	0.910	0.910
p: Workshop = Combined	0.866	0.708	0.543	0.425
q: Workshop = Combined	1.000	1.000	1.000	1.000
Placebo mean	0.000	-0.000	0.723	3.604
# obs	2889	2883	2890	2880

Notes: This table shows the treatment effects on selected Psychological Mechanisms reported in Orkin et al. (2025) for this study sample. Self-belief index is a standardized index (Anderson, 2008) of generalized self-efficacy, locus of control and growth mindset scales. Returns index is respondents' beliefs about the returns to three common investment activities: using more labour on farm, using more fertiliser on farm, and a university degree (vs secondary education) for their child. No present bias is an indicator for if the respondent doesn't switch to the (higher) future amount later in the near time frame (tomorrow vs. 15 days), than in the future time frame (15 vs. 29 days). Risk preferences are an ordinal measure of risk-taking from an incentivised Eckel and Grossman (2002) 6 lottery task. The measures are described in detail in the appendix to Orkin et al. (2025). The number of observations varies slightly across columns because some respondents don't answer all questions, which also drops one small village. All regressions include randomization block fixed effects and PDS Lasso selected controls. Robust standard errors clustered by village are shown in parentheses. Sharpened q-values are in square brackets. $^{*}p < 0.10,^{**}p < 0.05,^{***}p < 0.01$. The number of observations varies slightly across columns because some respondents don't answer all questions.

Table A14: Impact on Own and Perception of Village Attitudes

	(1) Attitudes Index	(2) Exercise of Power (own)	(3) Justifiable Violence (own)	(4) Exercise of Power (village)	(5) Justifiable Violence (village)
Workshop	-0.011	0.023	-0.026	-0.010	0.031
	(0.063)	(0.081)	(0.136)	(0.087)	(0.143)
	[.]	[1.000]	[1.000]	[1.000]	[1.000]
Cash	-0.028	0.041	-0.023	-0.059	-0.019
	(0.066)	(0.072)	(0.137)	(0.097)	(0.152)
	[.]	[1.000]	[1.000]	[1.000]	[1.000]
Combined	0.003	0.014	0.066	-0.001	0.079
	(0.063)	(0.071)	(0.130)	(0.098)	(0.144)
	[.]	[1.000]	[1.000]	[1.000]	[1.000]
p: Cash = Combined	0.627	0.706	0.473	0.519	0.439
q: Cash = Combined	.	1.000	1.000	1.000	1.000
p: Cash = Workshop	0.790	0.816	0.985	0.558	0.698
q: Cash = Workshop	.	1.000	1.000	1.000	1.000
p: Workshop = Combined	0.815	0.911	0.460	0.916	0.693
q: Workshop = Combined	.	1.000	1.000	1.000	1.000
Placebo mean	0.000	4.247	3.136	3.460	2.447
# obs	2939	2939	2939	2936	2938

Notes: Attitudes index is a standardised index (Anderson, 2008) of the measures in columns (2) - (5). Exercise of power (own) ranges from 0 to 6 and is the sum of six indicator variables for whether the woman disagrees with the man exercising power in specific situations. We asked 6 questions in the survey, but missed mentioning the following question in the pre-analysis plan: "The wife has the right to express her opinion even when she disagrees with what her husband is saying." We include this question after reverse coding. Exercise of power (village) is the response to the same set of questions on the perception of what an average person in the village thinks. Justifiable violence (own) ranges from 0 to 7 and is the sum of seven indicator variables for if the woman disagrees with the man using violence in specific situations. Justifiable violence (village) is the response to the same set of questions on the perception of what an average person in the village thinks. Measures are defined in detail in Appendix B. All regressions include randomization block fixed effects and PDS Lasso selected controls. Robust standard errors clustered by village are shown in parentheses. Sharpened q-values are in square brackets. $^{*}p < 0.10, ^{**}p < 0.05, ^{***}p < 0.01$. The number of observations varies slightly across columns because some respondents don't answer all questions.

B Variable Definitions

All indices are created using the approach suggested by Anderson (2008). First, we will re-code all outcomes such that higher values correspond with similar direction of change within an index. Second, we will standardise the outcomes to have mean zero and standard deviation one. Third, we will calculate the average of the standardized constituent outcomes, weighted by the inverse covariance matrix.

* denotes outcomes measured by the household study survey. Where relevant, questions in the gender study survey were asked for a 12-month recall period.

Variable name	Definitions and source
Consumption Shares	
Clothing share*	Spending on women's, men's and children's clothing and footwear as a proportion of non-food spending.
Food share*	Monthly food consumption (as defined in the main study) as a proportion of total consumption expenditure (as defined in the main study), also includes the following sub-groups: cereal, tubers, meats & fish, dairy, fruits & vegetables.
Education share*	Spending on schooling and school inputs services, as a proportion of total non-food spending.
Control of Assets	
Asset ownership index	An index of the following:
Share of assets	The proportion of household assets which are owned by the woman, jointly by the woman and spouse or jointly by woman and other family members.
Indicator for asset ownership	In line with WEAI guidelines, this indicator variable takes a value of one if at least two of the small assets (chicken, farming equipment non-mechanized, and small consumer durables) or one large asset (all others) is owned by the woman (fully or jointly).
Experience of IPV	
IPV index	An index of the following:
Physical violence	In the pre-analysis plan, we included the threat of attacking with a knife, gun or any other weapon in the experience of physical violence. This has been excluded from the measure of physical violence used in this paper so that we capture actual experience of physical violence only. This does not change the results qualitatively.
Sum of the following two scores:	
a) moderate physical violence	Sum of three categorical variables which equal 2 if often, 1 if sometimes, and 0 if never for the husband doing the following: i. Pushing or throwing: "Push you, shake you or throw something at you" ii. Slapping: "Slap you" iii. Twisting or pulling: "Twist your arm or pull your hair".
b) severe physical violence	Sum of three categorical variables which equal 2 if often, 1 if sometimes, and 0 if never for the husband doing the following: i. Punching: "Punch you with his fist or something that could hurt you" (variable acasi__4_physical) ii. Kicking or dragging: "Kick you, drag you or beat you up" iii. Choking or burning: "Choke you or burn you on purpose"
Sexual violence	Sum of the following four categorical variables which equal 2 if often, 1 if sometimes, and 0 if never for the husband doing the following:

i. forced intercourse	"Physically force you to have sexual intercourse with him even when you did not want to"
ii. unwanted sexual acts	"Force you to perform any sexual acts you did not want to"
iii. degrading sexual acts	"Force you to do something sexual that you found degrading or humiliating""
iv. consent from intimidation	"You had sexual intercourse you did not want because you were afraid of what your husband might do""
Indicator for violence (alternative measure)	An extensive margin capturing the incidence rather than the frequency of violence. This will be an indicator variable taking a value of one if the respondent experienced any physical and/or sexual violence.
Maximum score (alternative measure)	A 'maximum' scale where IPV is measured as the maximum frequency reported over all physical and sexual violence.
Severity of violence (secondary analysis)	We use the incidence of physical and/or sexual violence as the primary measure but will also look at the severity of the violence as a secondary measure. This is the sum of the following three categorical variables which equal 2 if often, 1 if sometimes, and 0 if never:
i. cuts or bruises	"Cuts or bruises or aches"
ii. eye injuries or sprains	"Eye injuries, sprains, dislocations or burns"
iii. deep wounds	"Deep wounds, broken bones, broken teeth or any other serious injury"
Aspirations index*	The aspirations index is an index of the following:
Assets	"What is the level of assets that you would like your household to reach at the end of the next 10 years?"
Income	"What is the level of annual income that you would like your household to reach at the end of the next 10 years?"
Education	"What level of schooling would you like [child name] to achieve?"
Bargaining index	The bargaining index is an index of the following:
Negotiation	Sum of four categorical variables which equal 3 if often, 2 if sometimes, 1 if once or twice, and 0 if never for how often the respondent did the following in case of a dispute with the husband:
i) Dialogue	"Explain your side of the argument" .
ii) Caring	"Show that he cared?" (variable neg_3f).
iii) Working things out	"Said could work out problem?".
iv) Husband's solution	"Agree to try husband's solution?".
Joint decision making	Sum of the following dummy variables which equal 1 if the decision is made jointly by woman and spouse, and 0 otherwise :
i. Contraceptives	"Whether or not to use a method to avoid having children""
ii. Children schooling	"Any decisions about children's schooling""

iii. Children clothes	"Whether or not to buy children's clothes, shoes?"
iv. Child illness	"What to do if a child falls sick"
v. Children discipline	"How should children be disciplined"
vi. Food expenses	"How much is spent on food?"
vii. Income share saved	"How much of the household's income to save?"
Spousal harmony	Sum of six categorical variables which equal 3 if never, 2 if once or twice, 1 if sometimes, and 0 if often for respondent and husband having a major argument on the following:
i. Spending	"Spending on major household items or assets".
ii. Saving	"Saving decisions".
iii. Children discipline	"Behaviour and disciplining of children".
iv. Relatives	"Interactions with relatives".
v. Alcohol	"Alcohol consumption".
vi. Other	"Any other issues".
Attitudes index	An index of the following:
Exercise of power (own and village)	Sum of the following dummies, which equal 0 if the woman agrees and 1 if she disagrees:
i. Important decisions	"The important decisions in the family should be made only by the men of the family".
ii. Wife can express disagreement	"The wife has the right to express her opinion even when she disagrees with what her husband is saying." *reverse coded*).
iii. Son to school	"It is more important to send a son to school than it is to send a daughter".
iv. Woman earns more	"If a woman earns more money than her husband it is almost certain to cause problems".
v. Tolerate beatings	"A wife should tolerate being beaten by her husband in order to keep the family together".
vi. Right to beat wife	"A husband has the right to beat his wife" (variable norms_r6 — norms_c6).
Justifiable violence (own and village)	Sum of the following dummies, which equal 0 if the woman agrees and 1 if she disagrees:
i. Neglects children	"If she neglects the children".
ii. Argues	"If she argues with him".
iii. Suspects unfaithfulness	"If he suspects she is unfaithful".
iv. Public insults	"If she insults him in public".
v. Discipline interference	"If she interferes when he is disciplining their child(ren)".
vi. Food not ready	"If she does not have food prepared on time".
vii. Taking conflicts out of household	"If she discusses conflicts in the household with friends, neighbours, or family".