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(Digital) cash transfers, privacy and women's empowerment: Evidence from Uganda*

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Abstract

We present evidence from a randomized controlled trial in Uganda where married women were randomly provided unconditional cash transfers. Among treated women, we randomized the modality of payment (in cash or mobile money) and whether the beneficiary's spouse was informed about the transfer or not. We find that using mobile money for cash transfers is more effective in improving women's economic independence and decision-making power. In particular, women in the mobile money treatments have higher individual labor income and more of a say in household decisions. On the other hand, cash-based transfers are more effective in reducing intimate partner violence (IPV), especially when both partners are informed. This highlights a trade-off between improving the effectiveness of cash transfers on women's economic empowerment versus reducing IPV. While providing cash transfers digitally is more effective in improving women's control over resources, this may lower their effectiveness in addressing IPV.

JEL Classification: C93, D10, D82, J12

Keywords: Women's empowerment, Domestic violence, Cash Transfer, Privacy.

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1 Introduction

Cash transfer programs are an important part of the social safety net in many countries (Honorati et al., 2015; World Bank, 2018) and one of the most commonly used social protection measures in response to humanitarian crises (Jeong and Trako, 2012; Gentilini et al., 2022). While the main objective of cash transfers is to provide financial assistance to vulnerable households, they are often associated with improving women's well–being in particular (Simon, 2019). The rationale is that giving resources directly to women can help shift decision-making power within households in their favor or provide them with financial autonomy (Duflo, 2012). However, the impact of cash transfers on women's empowerment is not always clear or consistent (Ambler and De Brauw, 2017; Buller et al., 2018; Baranov et al., 2021). In patriarchal societies, entrenched gender norms can influence how resources are shared and managed within families. In many contexts, men tend to dominate household finances, and women's access to income or assets is often limited or conditional (Kabeer, 2016; Gupta et al., 2024). Even when women receive cash transfers, they may not always enhance their autonomy–and in some cases, it could increase conflict if men perceive a threat to their role as primary decision-makers (Erten and Keskin, 2018).

A growing body of research has examined how the mode of cash delivery – whether physical or digital– can affect women's economic outcomes. Recent studies find that digital financial services, such as mobile money, may allow women more control over funds and facilitate greater independence (Field et al., 2021; Riley, 2024). On the other hand, unilateral access to funds may create tension or reduce trust within couples if men feel excluded from household financial decisions (Field et al., 2021). These dynamics are particularly relevant when considering outcomes like intimate partner violence (IPV), which may respond differently depending on whether increased resources enhance women's bargaining power or lead to attempts by men to reassert control (Aizer, 2010; Erten and Keskin, 2018).

While there is growing evidence on the economic effects of cash transfers, their impact on women's empowerment and intimate partner violence and how they vary by transfer modality remains underexplored.

In this paper, we study whether using digital financial services (DFS) in cash transfer programs has a differential impact compared to physical cash-based transfers on women's economic empowerment and IPV. Moreover, we investigate the role that privacy of information plays as a causal pathway. Privacy is often mentioned as a potential mechanism for why using DFS may lead to better outcomes for women, but to our knowledge there is no causal evidence on this.

To shed light on these questions, we implemented a randomized controlled trial involving 2,000 married women from 250 communities in Uganda. All participants owned a mobile phone and had a mobile money account registered under their name at baseline. They were randomly divided into four treatment arms and a control group. Women in all treatment groups received a one-off unconditional cash transfer of UGX 175,000 (≈USD 50) paid in cash or via mobile money, provided by the NGO BRAC. The information about the transfer was revealed to the couple (public information treatment) or to the respondent alone (private information treatment).[1] As such, the experiment had a 2x2 design whereby the mode of delivery of the transfers (cash vs mobile money) and privacy of information (public vs private) was cross-randomized. Using survey data from a follow-up survey 8-months after the transfers were delivered, we study differences among the treatment groups in women's economic outcomes (engagement in earning activities and income), control over household decisions, marital trust and IPV.

We find that the mode of the cash transfer affects women's economic

[1] In the public information treatment, the information about the transfer was revealed to women and their spouse during a field visit by BRAC staff. In the private information treatment, women were privately informed about the transfer. They were assured that the research team members would not inform their spouse or anyone else about this transfer and they could use the money as they liked.

independence and empowerment. While transfers paid in cash increase women's engagement in income-generating activities that they conduct jointly with their spouse, transfers paid into their mobile money accounts enable women to engage in their own, independent income generating activities. As a result, women who receive mobile money transfers increase their individual earnings by 31%. This leads to greater autonomy as demonstrated by an increase in women's involvement in household decision-making. In particular, women who receive their transfers via mobile money experience a 0.17 SD increase in their control over household matters, driven by decisions related to children's schooling and health. We do not find significant differences in terms of the privacy of information, suggesting that these effects are not driven by their husbands being informed about the transfers.

On the other hand, we find that transfers paid out in cash are more effective in reducing intimate partner violence compared to digital payments, especially when women's partners are informed about the transfer. In particular, women who received their transfers in cash and whose husbands were informed were 12 percentage points (ppt) less likely to report having experienced any IPV during the past year. This is driven by a decrease on all types of IPV, including a reduction of 8.4 ppt for physical and 4.1 ppt for sexual IPV. None of the other treatment arms have a significant effect on IPV and we can reject null of equality between the effect of the joint cash treatment with all other arms.

Our findings suggest that the public nature of cash transfers can be more effective in reducing IPV. Importantly, they demonstrate a trade-off between improving the effectiveness of cash transfers in terms of women's economic empowerment and reducing IPV: while digital payments can be more effective in empowering women, cash-based payments can achieve greater impact in terms of IPV prevention. Our findings are in line with household bargaining models. Since digital cash transfers are more effective in improving women's economic empowerment (WEE), they increase

women's outside options and bargaining power within the household. If IPV is expressive, this should lead to a reduction in IPV (Tauchen et al., 1991; Farmer and Tiefenthaler, 1997b). On the other hand, if IPV is instrumental, it may lead to a male backlash as men try to re-assert their dominance and take control of the increased resources within the household (Eswaran and Malhotra, 2011; Bloch and Rao, 2002). In line with this, we find that digital cash transfers lead to lower trust between the couple and increase the likelihood that men engage in excessive controlling behaviors – the latter especially when men are informed about the transfers. This explains why the effectiveness of mobile money transfers on IPV can be weaker than cash-based transfers.

We contribute to a burgeoning literature studying how providing financial resources to women affects their control over resources and decisions within the household. Several studies have found information asymmetry over an individual's personal finances to have important effects on their bargaining power and intra-household resource allocation (Duflo and Udry, 2004; Doss, 2006; Ashraf, 2009; Morawczynski and Pickens, 2009; Ashraf et al., 2014; Field et al., 2021). There is limited evidence on whether DFS can enable greater privacy to women for their personal and household finances. Several studies have compared the impact of mobile money as the mode of cash transfers (Aker, 2015; Aker et al., 2016) or micro-loans (Riley, 2024; Heath and Riley, 2024). While these studies find positive effects of mobile money on women's economic empowerment, the mechanisms underlying these effects are not clear. Several studies (e.g. Bastian et al., 2018) have argued that access to DFS can give women greater control over their finances due to privacy of information but have not explicitly tested this mechanism. Few studies experimented with privacy of information about earnings directly. Ashraf (2009) varies the observability of spouses' earnings in the Philippines and finds that when men are more likely to use money for consumption when their choice is not observed by their wives, while they put it in their wives' accounts when it is observable. Castilla and

Walker (2013) found that private vs. public information of lottery winnings lead to differential impact on expenses by husband and wife that is consistent with hiding. We contribute by testing whether privacy of information is the relevant causal mechanism through which delivering cash transfers digitally leads to more control over resources and greater decision-making power for women.[2]

The study is also related to the literature on the relationship between women's economic empowerment and intimate partner violence. Studies have shown that policies that improve women's economic opportunities have an ambiguous effect on intimate partner violence. They may improve women's position and reduce IPV (e.g. Aizer, 2010; Sanin, 2023); or they may lead to a backlash effect, especially in contexts with more conservative gender norms (e.g. Heath, 2014; Erten and Keskin, 2018). A number of studies have shown that cash transfers may reduce IPV due to improved economic security, emotional well-being, and increased women's empowerment (Buller et al., 2018; Baranov et al., 2021), but there have been some cases where a backlash effect has been detected (Hidrobo and Fernald, 2013; Bjorvatn et al., 2024). We have little evidence on how the modality of cash transfers may affect IPV. Hidrobo et al. (2016) compare the effectiveness of cash versus in-kind transfers in reducing intimate partner violence in Ecuador, finding similar effects. We contribute by providing experimental evidence from Uganda on how the use of digital financial services in cash transfer programs affects their impact on IPV.

The rest of the paper is organized as follows: section 3 presents the design and implementation of the experiment, section 4 presents the main empirical results, section 5 discusses the interpretation of our findings and

[2]This is also related to the broader literature on how the mode of cash transfers influence their effectiveness. Aker (2015) and Aker et al. (2016) have found that switching to digital payments can reduce transaction costs and improve effectiveness of cash transfers on a range of outcomes in DRC and Niger respectively. On the other hand, in the context of a conditional cash transfer program in Mexico, Marquez-Padilla and Parker (2024) find that switching to electronic payments increased transaction costs and reduced the value of the transfer eligible women could access.

presents further evidence on mechanisms, section 6 concludes.

2 Conceptual Framework

In this section, we describe the theoretical mechanisms that motivate our hypotheses and the following empirical analysis. We are interested in understanding how cash transfers provided to women in cash or transferred directly to their individual mobile money accounts may affect women's economic empowerment and IPV. There are several theoretical mechanisms through which effects may occur. First, economic distress due to poverty or unemployment increases prevalence of domestic violence (e.g. Fox et al. (2004)). Cash transfers can help to reduce economic distress experienced by women and their families, which should reduce the risk of IPV.

Second, when targeted explicitly to women, cash transfers may improve women's control over resources and allow them to have more influence over household decisions. In particular, digital transfers deposited in women's personal accounts can enable women to have more control over the transfer and improve the effect on their bargaining power within the household (Aker et al., 2016; Riley, 2024; Heath and Riley, 2024). Theoretically, such an improvement in women's economic empowerment has an ambiguous effect on risk of IPV, depending on the underlying motive behind violence. According to non-cooperative household models, violence could be expressive, providing direct utility to the perpetrator and disutility to the victim (Tauchen et al., 1991; Farmer and Tiefenthaler, 1997a). If violence is purely expressive and the cash transfers are effective in improving women's outside options, we would expect a shift in women's threat points, making it more credible for them to leave abusive relationships. In that case, cash transfers should lead to a reduction in IPV (Aizer, 2010; Erten and Keskin, 2018; Haushofer et al., 2019). On the other hand, violence could be instrumental, used by the perpetrator to extract resources

from the victim and/or to control their behaviors (Eswaran and Malhotra, 2011; Bloch and Rao, 2002). In that case, an improvement in women's access to resources may lead to more violence as men try to extract these resources from them or try to re-assert their dominance (Angelucci, 2008; Heath, 2014; Erten and Keskin, 2018; Bjorvatn et al., 2024).

Based on the above discussion, the effect of the cash transfers on IPV will depend on (a) which mode of cash transfer is more effective in improving women's economic empowerment and control over resources; (b) whether violence is instrumental or expressive. If cash transfers made digitally are more effective in empowering women and IPV is expressive, then they should be more effective in reducing IPV. On the other hand, if IPV is instrumental, this may lead to a male backlash as men try to re-assert their dominance, reducing cash transfers' effectiveness in addressing IPV.

One of the mechanisms through which digital cash transfers can be more effective in improving women's control is by providing them with privacy of information – their husbands may be less likely to observe the cash transfers, allowing women to keep it hidden or reveal when/if they choose to. In that case, we expect the private information treatment to be more effective in improving women's economic empowerment relative to the public information treatment. To the extent privacy enhances the impact of cash transfers on women's economic empowerment, we expect the effects on IPV to be reinforced in private relative to public cash transfers. However, if there are other, alternative channels through which digital cash transfers enhance women's bargaining power, then we may not see significant differences between private versus public information treatments. For example, it is possible that even if women's husbands are informed about the transfer, by having the cash in their own mobile money account (as opposed to in physical cash) women may still be better able to control when and how the cash is used.

3 Experimental Setting and Design

3.1 Context and target population

The study population includes women from refugee and host communities in Kyegegwa and Kiryandongo districts of Uganda. These districts represent a microcosm of Uganda's broader context, which is one of the primary host nations for displaced individuals in Africa, ranking third globally. The majority of these refugees originate from conflict-afflicted regions such as South Sudan and the Democratic Republic of Congo (United Nations High Commissioner for Refugees, 2023).

Initially, a mapping of target communities was done by BRAC to identify 250 potential communities, 125 each from the two districts. The mapping used the administrative boundaries of refugee settlements and local councils (LC1), and avoided selection of adjacent villages as much as possible. Within each community, individual participants were identified through a survey and were selected for the baseline survey based on five eligibility criteria– i) women who are 20-45 years old, ii) currently living with their spouse/partner, iii) own a mobile phone, iv) have a mobile number registered under their names and v) know how to transact using mobile money. Out of these criteria, the third and fourth were relatively more binding. While 25% of the women were excluded for not having a mobile phone of their own, 34% were excluded because they did not have a registered mobile money account under their name although met the other four criteria.[3]

In Uganda, cash transfers are commonly used as a social protection tool,

[3]Although this limits the external validity of our study, it was considered necessary to apply these conditions to estimate the effects of privacy more clearly. For example, women who have to be assisted by a family member or a friend to utilize mobile money are unlikely to benefit from the privacy as much as those who can use it themselves. This suggests that, if we find no differential effects of privacy between mobile money and cash for this sample, we can reasonably rule out the possibility of privacy being an important mechanism for those who do not meet those two criteria.

especially within the humanitarian sector. In particular, refugees typically receive monthly consumption support from the World Food Programme (WFP); however, this support was reduced twice from January 2020 to January 2022 due to the financial constraints imposed by the COVID-19 pandemic. Initially, the support was cut by about 30%, from approximately 24.46 USD PPP (31,000 UGX) to 17.36 USD PPP (22,000 UGX) per person per month in April 2020, followed by a further reduction of 10% to approximately 14.99 USD PPP (19,000 UGX) in February 2021 (Gupta et al., 2024). The host populations in Uganda do not usually benefit from large cash transfer schemes. Between January 2020-May 2022, NGO Give Directly rolled out a large cash transfer program in Uganda, giving around USD 1000 (2840 USD PPP) for 10,000 refugees and 5,000 non-refugees living in the Kiryandongo district (Gupta et al., 2024). However, only 0.01% (n=21) respondents from our sample received these transfers provided by Give Directly. To assist the most vulnerable groups in coping with the economic impacts of the COVID-19 pandemic, the Government of Uganda also launched a targeted and direct cash transfer program, COVID-19 Relief Fund in June 2020. The plan was to reach 501,107 households in the Kampala metropolitan areas, all cities, and municipalities. Each household was set to receive UGX 100,000 ($28.5). None of the respondents from our sample received this support money.

Our study was conducted shortly after the COVID-19 related lockdowns in Uganda. The first nationwide rigorous lockdown was initiated on March 30, 2020, Uganda to mitigate the spread of COVID-19, significantly restricting commerce and movement both domestically and across its borders. For one and a half years, the country experienced fluctuations between strict and moderate restrictions. Measures enforced included a persistent nightly curfew, alongside intermittent prohibitions on markets, public and private transportation, restaurants, bars, and social gatherings. These restrictions disproportionately impacted workers in the informal economy. However, by 2nd August 2021, the second lockdown was eased

and the economic activities started returning to normal. Our study (baseline survey) started in October 2021. Figure 1 summarizes the timeline of our study.

3.2 Intervention

We study the effects of a one-off transfer of UGX 175,000 which was provided to women who met the targeting criteria. The transfer is done either in cash, distributed by BRAC staff by visiting them in-person, or using mobile money. To avoid possible non-compliance with our experimental design, separate staff teams were formed. Each team was responsible for carrying out only one of the four treatment arms. The field officers were trained about the research objective to ensure compliance and followed a scripted description of the purpose of the transfer when communicating with the participants in the treatment groups. To limit the possibility of information spillover, randomization was done at cluster level and the participants were first asked to answer a few questions as part of a survey to ensure no one else was around observing the transfers. For the transfers with privacy, the transcript read, "I wish to inform you that as part of this research study on economic development in your community, some women have been selected for privately receiving a gift of UGX 175,000. This transfer is for you, and you can you use it as you like. We will not tell your husband or anyone else in your household about this transfer. Please note that you do not have to give any money to the BRAC team members or any other person for receiving this transfer."

For the two treatment arms without privacy (i.e. information shared with their husband), the transcript was changed to "I wish to inform you that as part of this research study on economic development in your community, some women have been selected for receiving a gift of UGX 175,000. This transfer is for you, and you can you use it as you like. We will also inform your husband about this transfer. Please note that you

do not have to give any money to the BRAC team members or any other person for receiving this transfer." Following this transcript, the spouses of the women in these two treatment arms were informed about the transfer either in-person or over the phone, depending on whether they were present during the household visit.

3.3 Experimental Design

We designed the study as a clustered randomized controlled trial (RCT). Based on our power calculations, we included 2000 women from 250 communities (clusters) in the study.[4] At the start of the study, we conducted a baseline survey during October-November 2021. We interviewed women and their spouses separately. This survey collected information about respondents' individual characteristics (education, ethnicity etc.), engagement in income generating activities and earnings, participation in decision making, control over finances and assets, access to and utilization of different financial services (including mobile money), financial literacy, spousal relationship, self-efficacy, emotional well-being, and attitude towards and experience of IPV. In addition, we collected household level information about socio-economic status (assets and poverty scorecard) and expenditure.

Following the baseline survey, we randomly assigned the 250 communities into 5 groups, including 50 communities each. The randomization was stratified at the district level (Kiryandongo or Kyegegwa). The resulting treatment and control groups are listed below:

- Treatment 1: Cash transfer with public information (*Joint cash*) – participant received a cash transfer; her partner was informed about the

[4]With 50 clusters per arm and 7 respondents per cluster, accounting for the intra-cluster correlations of respective outcomes as measured at baseline, and assuming correlation of 0.3 between the baseline and endline levels of the outcomes variables, we have 80% power to detect the following effect sizes at 5% level of significance. To allow for possible attrition up to 12.5%, we decided to sample 8 respondents per cluster.

transfer.

- Treatment 2: Cash transfer with privacy of information (*Private cash*) – woman received a cash transfer; her partner was not informed about the transfer.
- Treatment 3: Mobile money transfers with public information (*Joint mobile money*) – participant received a mobile money transfer; her partner was informed.
- Treatment 4: Mobile money transfers with privacy of information (*Private mobile money*) – participant received a mobile money transfer; her partner was not informed.
- Control group: participant did not receive any transfer.

The cash transfers were made to women in the relevant treatment arms during February-March 2022. The endline survey was conducted between October and December 2022, that is 8-9 months after the transfers were made, largely using the same instruments as the baseline survey. We were able to track and re-survey 94% of female respondents and 88% of males. In Appendix Table A.1, we test for differential attrition by treatment status. While attrition was slightly lower in treatment groups relative to the control group, the differences are not statistically significant with the exception of the cash (with private information) group where for female respondents the attrition rate was 3 ppt higher relative to the control and this difference is marginally significant at 10% level.

Table 1 reports summary statistics on some relevant baseline characteristics of the study participants. The average woman in our study was 33 years old, had 4 children and lived in a household with 7 members. Only 5% of the respondents reported themselves as being the head of their households. 11% of them were refugees and about half of them had completed more than primary 5 (P5) level education. Turning to indicators

related to mobile money, the average respondent lived 1.4 km away from a mobile money agent and had to spend UGX 1,400 to reach there. 65% of them had used mobile money during the past week. While 98% of them reported being the primary user of the mobile money account, more than half (52%) of them said that their partner knew the PIN number of their mobile money account. On the other hand, 43% of them said they knew their partner's mobile money account. Finally, 8% of the respondent said they had benefited from a cash transfer program before our study.

In Table 1, we also test for differences in baseline characteristics between the treatment groups and the control group – sample is limited to women successfully re-surveyed at endline. Overall, fewer than 10% of the differences are statistically significant. As such, we conclude that the randomization was successful and the control group constitutes a valid counterfactual for the various treatment groups.

3.4 Estimation

In order to assess the differential effects of the mode and the privacy of the cash transfers, we estimate the following specification using OLS:

$$Y_{icd} = \alpha + \sum_{k=1}^{4} \beta_k T_{cd}^k + Y_{icd}^0 + \theta_d + \epsilon_{icd}, \quad (1)$$

Y_{icd} is the outcome of interest at endline for respondent i from community c, T_{cd}^k is an indicator equal to 1 if community c was assigned to treatment group k (where $k = 1, 2, 3, 4$) and 0 otherwise, θ_d are randomization strata (i.e. district) fixed effects, Y_{icd}^0 is the baseline level of the outcome variable. We cluster the standard errors at the level of the community, our unit of randomization. Under the identifying assumption that the control group forms a valid counterfactual for the treatment groups, β_k provides the causal effect of treatment k. The differential impact among treatment arms tests the causal effects of the mode of delivery and role of privacy

through which cash transfers may affect the outcomes.

We also report the overall effects of the mode of the cash transfers (i.e. cash versus mobile money) by estimating the following model:

$$Y_{icd} = \alpha + \sum_{k=1}^{2} \beta_k T_{cd}^k + Y_{icd}^0 + \theta_d + \epsilon_{icd}, \quad (2)$$

where T_{cd}^k corresponds to receiving the cash transfers as physical cash ($k = 1$) or as mobile money ($k = 2$) and the remaining variables are same as in specification (1) above.

In order to take into account multiple-hypothesis testing, we report Romano and Wolf (2005) step-down adjusted p-values with 1000 bootstrap replications. When correcting the p-values, we group our outcome variables into families corresponding to the separate hypothesis we are testing for.

4 Results

4.1 Employment

In Table 2, we present treatment effects on women's employment. Panel A reports findings on the mode of transfers made based on specification 2 (i.e. cash versus mobile money); while Panel B further disaggregates the effects by mode and the privacy of the transfers based on specification 1. In column 1, the outcome is an indicator for being involved in any income generating activity (IGA). Almost all women in our sample are involved in some type of IGA (98% of women in the control group) and we do not find any significant effect of the cash transfers on this outcome. Turning to the intensive margin in column 2, we find that mobile money transfers increased number of hours women spent in IGAs during the past week by 27 hours per week. This corresponds to a 10% increase relative to the control

group. While the effect of cash is not precisely estimated at conventional levels, the point estimate is positive and not significantly different from the effect of mobile money (p-value=0.114). The third column shows that both modes of transfers have positive but imprecisely estimated effects on women's total labor income.

In the remaining columns of Table 2, we separate women's income generating activities into those that are conducted jointly with their spouse (columns 4-6) and those that they carry out independently on their own (columns 7-9). In column 4, we find that receiving the transfer in cash increased the likelihood of having a joint income generating activity by 7.6 ppt, corresponding to a 15% increase relative to the control group. In contrast, mobile money transfers did not affect this outcome significantly. The difference between the transfer modes is statistically significant (p-value=0.026). While the effects on the intensive margin are qualitatively similar, they are imprecisely estimated. In column 6, we find that transfers received in cash increased joint earnings by 40 thousand UGX (36% relative to the control), while mobile money transfers did not have a significant effect on this outcome – the difference between them is significant (p-value=0.057). Overall, the pattern in columns 4-6 suggest that transfers paid in cash increased women's engagement in and earnings from income-generating activities that they conduct jointly with their spouses, while mobile money transfers did not have any impact on this dimension.

In contrast, in columns 6 to 9, we find that mobile money transfers increased women's involvement in individual income generating activities that are independent from their spouses. In particular, in column 7, we find that the likelihood that women are engaged in an IGA of their own increases by 5.2 ppt with mobile money while it diminished by 1.8 ppt due to transfers in cash – while neither effect is precisely estimated, the difference between the two is significant with a p-value=0.010. Similarly, the intensive margin effects in column 7 demonstrate that women spend 33 hours per week (18% relative to control) more on individual IGAs, while

transfers provided in physical cash have no impact (the difference between the two is significant with p-value=0.027). Furthermore, column 9 shows that mobile money transfers increased women's individual earnings by 45 thousand UGX (31%) while cash transfers did not and, once again, we can reject the null of equality between the two transfer modes' effects (p-value=0.007). Overall, the findings in Panel A suggest that the mode of the cash transfer matters in terms of what types of income-generating activities women engage in, with transfers in cash increasing engagement in joint activities while mobile money payments enable women to engage in their own, individual income generating activities.

In the lower panel of Table 2, we disaggregate the effects by both the mode and the privacy of the cash transfers. In general, while we find the effects of the joint transfers are more precisely estimated, the differences between the private versus joint transfers are not significant. In particular, the joint cash transfer increases women's engagement in joint income-generating activities by 10.9 percentage points (column 4) and their earnings from joint activities by 53 UGX (column 6). While the effect of private cash transfers on both dimensions is imprecisely estimated, the point estimates are positive and not significantly different from that of joint cash transfers. In contrast, the *Joint mobile money* treatment significantly increases the likelihood of women engaging in self-driven income-generating activities by 7.1 percentage points (column 7) and their earnings by 38 thousand UGX (column 9). Additionally, women in this group report spending an additional 42 hours on these activities (column 8). Once again, we fail to reject the null of equality between the effect of joint versus private mobile money transfers. These results suggest that the driving mechanism behind the differential treatment effects of the mode of the cash transfers is not the privacy of information about the transfers. It is possible that even when men are informed about the money transfers, women retain control over digital funds which enables them to invest more heavily in independent economic ventures. We return to this in section 5 where we discuss our

findings.

Note that, while we fail to find a notable difference for transfers made in cash, for mobile money transfers privacy of information makes a significant difference in terms of women's income from joint activities. In column 6 of Table 2, we find that while private mobile money transfers increase joint labor earnings by 29 thousand UGX, joint mobile money transfers lead to a decrease of -27 thousand – the difference is significant with a p-value=0.03. On the other hand, we fail to find a notable difference for income from women's individual labor activities in column 9 (p-value=0.565). This also leads to a differential effect in total labor income, as demonstrated in column 3 where mobile money transfers with privacy of information increases total labor income by 83 thousand UGX which is significantly higher than the effect of mobile money transfers that the respondent's spouse was aware of (p-value=0.056). This implies that when women have private information over mobile money transfers, they are able to make more strategic and potentially higher-return investments in economic activities that are managed jointly with their husband. Women may have better knowledge of how to invest the money in joint business ventures, but they may have difficulties in influencing such decisions, unless they have full privacy of information.

4.2 Women's Decision Making and Home Environment

Table 3 displays treatment effects on indices related to women's involvement in household decisions and their home environment. In column 1, the outcome variable is an index that captures women's control over household decision making.[5] Results in column 1 of Panel A show that receiving

[5]The *decision-making index* is based on responses to a series of questions that asked respondents who in their family usually has the final say on decisions related to income generating activities, children's schooling, children's health, their own health, small and large purchases, family planning, opening a bank account or taking out loans. We use these questions to generate indicators for whether the respondent herself has the final say

cash transfers as mobile money increased women's control over household decisions. In particular, women who received cash transfers as mobile money experienced a 0.17 SD increase in their decision-making index relative to the control group. On the other hand, the transfers made in cash did not have any significant effect on women's decision-making power – the difference between the two transfer modes' effects is statistically significant (p-value<0.001). The lower panel of Table 3 further disaggregates the treatment effects by their mode and privacy status. Overall, we do not find evidence that the privacy of the cash transfers led to a significant difference in their effects on the decision-making index. The difference between the effects of *Joint mobile money* and *Private mobile money* treatments is insignificant (p-value=0.982). These results suggest that the autonomy provided by digital financial tools, such as mobile money, can enhance women's involvement in decision-making processes, even when both partners are aware of the transfers.[6]

The rest of Table 3 presents effects on outcomes measuring different indicators related to the respondent's relationship with her husband. In column 2, we analyze treatment effects on the degree of income sharing between the respondent and her spouse.[7] In line with our findings on women's employment above, we find that mobile money transfers reduce the degree of income sharing between the spouses compared to cash-based

in these decisions and then combine these indicators into a standardized index following Anderson (2008).

[6]In Appendix Table A.2, we present the treatment effects on each individual component of the index. In Panel A, we see that the effect of mobile money transfers is significant on respondent's control over decisions related to children's education and health as well as their own health. Moreover, the effect of mobile money transfers are significantly higher than physical cash transfers for 6 out of the 8 components of the index.

[7]The *sharing index* combines responses to a series of questions where the respondent was asked to rank, on a scale of 1 to 5 (1=Never, 2=Very rarely, 3=Sometimes, 4=Often, 5=Always) how often the following happens: (1) "My partner discusses all the money that he earns with me"; (2) "My partner trusts me with all of the money that he earns"; (3) "My partner willingly shares the money that he earns with me"; (4) "I discuss all of the money that I earn with my partner"; (5) "I trust my partner with all of the money that I earn"; (6) "I willingly share the money that I earn with my partner".

transfers. In particular, in panel A, we find that while transfers paid in cash do not have a significant impact on this outcome, mobile money transfers lead to a 0.19 SD decrease – the difference between effects of the two transfer modalities is significant with p-value<0.01. Results in panel B imply that this effect is not driven by privacy of information.

In the third column of Table 3, we assess treatment effects on the degree of trust between the respondent and her spouse.[8] Our findings in Panel A suggest that cash-based transfers increased the extent to which the respondents trust their husbands, both relative to the control group (by 0.16 SD) and relative to the mobile money transfers (by 0.27 SD). In panel B we find no significant difference between joint vs. private cash or mobile money transfers. This suggests that the difference between mobile money vs cash-based transfers is not driven by women's husbands being informed about the transfer.

In the last column of Table 3, we examine treatment effects on an index of controlling behaviors by the respondent's husband.[9] As men who trust their wives less are more likely to engage in such behaviors, we view this as an alternative measure for the degree of trust among the couple, with one

[8]The *marital trust index* is based on a series of questions about the extent to which the respondent trusts her husband. Respondents were asked to state the extent to which they agree with the following statements: (1) "My partner has proven to be trustworthy and I am willing to let him engage in activities which other partners find too threatening"; (2) "My partner is very unpredictable. I never know how he is going to act from one day to the next"; (3) "I feel very uncomfortable when my partner has to make decisions which will affect me personally and my welfare"; (4) "Even if I have no reason to expect my partner to share things with me, I still feel certain that he will"; (5) "I am certain that my partner would not cheat on me, even if the opportunity arose and there was no chance that he would get caught"; (6) "I can rely on my partner to keep the promises he makes to me"; (7) "When I am with my partner, I feel secure in facing unknown new situations"; (8) "Even when my partner makes excuses which sound rather unlikely, I am confident that he is telling the truth".

[9]In particular, the *controlling behaviors index* combines indicators for whether the respondent's partner (during the past year) got jealous or angry if the respondent talked to other men, wrongly accused the respondent of being unfaithful, did not permit the respondent to meet her female friends, tried to limit the respondent's contact with her family, insisted on knowing where the respondent was at all times.

important distinction. While the marital trust index in column 3 measures how much women trust their husbands, the controlling behaviors index in column 4 can capture changes in their husbands' trust. In panel A, we find that respondents who received their transfers as mobile money experienced more spousal control relative to respondents who received their transfers in cash (p-value=0.033). This is consistent with our findings in column 3, suggesting a deterioration of interspousal trust. In Panel B, we see that the *Joint cash* treatment in particular is associated with a -0.16 SD reduction in marital control – note that this effect is not significant when we adjust for multiple hypothesis testing (Romano-Wolf p-value=0.199). On the other hand, the *Joint mobile money* treatment has led to an increase in the index by 0.232 SDs and this effect is precisely estimated at conventional levels (Romano-Wolf p-value<0.05). We also find evidence that the privacy of information matters for this outcome. In particular, the difference between the effects of *Joint cash* and *Private cash* treatments is significant with p-value=0.004. Similarly, we can reject the null of equality of *Joint mobile money* and *Private mobile money* effects with p-value=0.002. This implies that whether the respondent's husband is informed about the transfer affects the extent to which they try to exert control over their wives, with the direction of the effect depending on the mode of the transfer. While cash-based transfers reduce such controlling behaviors, mobile-money transfers increase it.[10] The fact that we did not find such an effect on the marital trust index in column 3 suggests that whether men are informed of the cash transfer does not matter for how much women trust their husbands, but it does for how much the husbands trust their wives.

Overall, the findings in Table 3 suggest that while mobile money transfers improved women's control over household decisions and their finan-

[10]In Appendix Table A.5, we present the treatment effects on each individual component of the marital control index. We find that the joint mobile money transfers led to an increase in the likelihood that respondents' spouses tried to limit their interactions with their friends and family.

cial independence from their husbands, they led to a deterioration of marital trust and a rise in men's controlling behaviors. This is in line with men trying to exert coercive control (Kabeer, 2016; Adams et al., 2024) as their wives attempt to exercise their increased independence following the mobile money transfers. Thus, our findings point towards a trade-off between increased cooperation in financial matters with a more trusting relationship within the couple, versus women's control over household decision-making and financial independence. We also find evidence that the privacy of information matters for the extent to which women's husbands trust them.

4.3 Intimate Partner Violence

Our final set of outcomes are related to intimate partner violence as reported by the respondents. In column 1 of Table 4, the outcome is an indicator equal to 1 if the respondent experienced any intimate partner violence during the past year. In Panel A, the results show that respondents who received cash-based transfers were 7 percentage points (ppt) less likely to have experienced IPV in the last year while the corresponding coefficient for mobile-money transfers is -0.7 ppt. While this effect is imprecisely estimated at conventional levels, the difference between the cash and mobile money arms is significant with p-value=0.06. In the lower panel of the table, we see that this effect is almost entirely driven by the *Joint cash* treatment. In particular, women assigned to the *Joint cash* treatment were 12.3 ppt less likely to report having experienced IPV during the past year. This effect is precisely estimated at conventional levels ($p < 0.01$). None of the other treatment arms have a significant effect on IPV and we can reject null of equality between the effect of the joint cash treatment with all other arms. This implies that cash transfers where both spouses are aware of them can help mitigate household tensions that might otherwise lead to violence. Moreover, the fact that none of the other treatments reduce

IPV prevalence indicate that the protective effect observed in the *Joint cash* treatment is specific to the nature of cash and its public disclosure.

The remaining columns of the table estimate the treatment effects on different types of IPV: emotional, phsyical or sexual. We find that the *Joint Cash* treatment significantly reduced all three types of IPV. In particular, women in the *Joint Cash* treatment group reported lower prevalence by 10.9 ppt for emotional, 8.4 ppt for phsyical and 4.1 ppt for sexual forms of IPV. These are large effects, corresponding to a 40% reduction in physical and 30% reduction in sexual IPV with respect to the control group. These findings suggest that the public nature of cash transfers not only reduced overall IPV but also specifically lowered the incidence of more severe forms of violence. Other transfer modalities did not significantly affect physical or sexual IPV, and we can reject the null of equality between their effects and the effect of the *Joint Cash* treatment.

These findings are consistent with household bargaining models summarized in Section 2. In particular, we find that switching the mode of cash transfers to digital payments allowed women to engage in their own, private income generating activities. This improved women's bargaining power within the household, as demonstrated by an increase in their decision-making power. On the other hand, cash-based payments increased engagement in income-generating activities that women conduct jointly with their spouse. This increases the couples' joint earnings, thus lowering income-related stress for both. Moreover, since men have joint ownership over these earnings, it does not threaten their bargaining power. Consistent with this, we find that men whose wives receive digital cash transfers become more controlling, consistent with higher likelihood of male backlash. This backlash effect likely counteracts and undoes any positive effect that cash transfers may have had on IPV through other mechanisms, which is why we find digital payments to be less effective in reducing IPV.

5 Discussion

One of the key contributions of our study is to explicitly test whether privacy of information is the main mechanism through which mobile money transfers improve women's economic empowerment. We find no significant differences between private versus public mobile money transfers' effects on women's engagement in independent income-generating activities or their decision-making power. This implies that privacy of information about the cash transfer is not the key channel through which switching to digital payments makes cash transfers more effective in improving women's economic empowerment. Below we discuss some alternative mechanisms and present suggestive evidence to assess whether they explain our findings.

It is possible that even when men were informed about the cash transfers, women were able to retain more control over digital funds, enabling them to use the funds more independently. To explore this possibility, we asked respondents to describe how they used the cash transfers. The most common use of the transfer was to invest in livestock, followed by household consumption, business, land cultivation and schooling expenses (see Figure A.1). In the treatment arms with public information, we also asked respondent's husbands to describe how the cash transfer were used. In Appendix Table A.6 we compare if female and male respondents reports on how the cash transfers were used match and if this is differential across mobile money versus cash-based transfers. We find that women's and men's reports often do not match. Moreover, when the transfers were provided digitally, men (compared to women) are more likely to report that they were used for land cultivation but less likely to report they were used for schooling expenses or personal consumption. This suggests that even when men were informed about the cash transfers provided to their wives, when the transfers were made via mobile money, women were able to retain some degree of privacy and control over how the funds were used.

Another potential mechanism is through increased security. Cash is likely to be easier to steal than mobile money. On the other hand, fraud in digital financial services is a rising concern in low-income countries (Garz et al., 2021). In order to understand whether the mode of transfer affect the security of resources, we collected information on prevalence of theft among our sample. In Table A.7 we assess any treatment effects on incidence of theft as well as the amount of money stolen. Although we do not find any significant effects on the likelihood of theft, we find a positive effect on the amount of money lost due to theft in the mobile money arm. Note that the difference between the treatment effects of cash versus mobile money transfers is not precisely estimated at conventional levels (p-value=0.159). Thus, we do not find any evidence to support the security mechanism.

Mobile money transfers may also lower transaction costs associated with cash-based payments. Aker et al. (2016) find that in Niger, switching to digital payments enabled recipients to save considerable amount of time they would have otherwise had to spend travelling to withdraw their cash payments. In our context, since the cash payments were delivered by NGO workers directly to the respondents' household, we expect any transaction cost benefit from switching to mobile money to be minimal. If anything, beneficiaries would have needed to travel to a mobile money agent if they wanted to access their funds. In Appendix Table A.8 we estimate the heterogeneity of the treatment effects on outcomes related to women's economics empowerment with respect to distance between the respondents' residence and the nearest mobile money agent. We do not find any significant differences in treatment effects by distance to mobile money agents.

As an alternative channel, receiving cash transfers digitally can lower temptation to spend the funds frivolously, which may especially be relevant for individuals with low self-control (Somville and Vandewalle, 2018). In Appendix Table A.9 we examine the heterogeneity of the treatment ef-

fects with respect to respondents' baseline level of self-control. We do not find any evidence to suggest that the effects of mobile money transfers on women's economic empowerment is driven by respondents with lower self-control at baseline.

6 Conclusion

In this paper, we presented evidence on how switching the mode of a one-time unconditional cash transfer from physical cash to digital payment using mobile money affected women's economic empowerment and intimate partner violence in Uganda. Our experimental design varied both the mode of the cash transfer (physical cash vs mobile money) and whether women's husbands were informed about the transfer (private vs public information). Our findings highlight a trade-off between improving women's economic independence and reducing intimate partner violence. Provision of transfers via cash and informing both women and their husbands was significantly more effective in reducing intra-household conflict. They did so by increasing couples' joint economic activities, earnings and trust in one another. On the other hand, mobile money transfers were more effective in improving women's economic empowerment by allowing them to increase their individual labor market activities and decision-making power. But this empowerment reduced the degree to which women share resources with their husbands which led to an increase in men's controlling behaviors. This is consistent with non-cooperate household bargaining models where an increase in women's bargaining power can lower the risk of IPV, but it may also generate a backlash effect as men try to protect their dominant position. As digital financial services become more widely spread throughout Sub-Saharan Africa and more organizations switch from using cash-based transfers to digital transfers, it is important to bear in mind the implications for cash transfer programs' effec-

tiveness in addressing intimate partner violence. Our findings highlight the importance of combining the transition from cash to digital money transfers with accompanying interventions that can tackle intimate partner violence.

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Figure 1: Project timeline

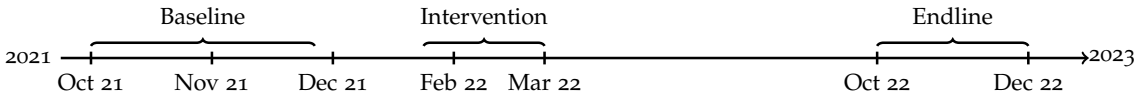


Table 1: Baseline Descriptives and Balance Tests

	Control	Basic differences				Normalized differences			
	Mean (SD)	Joint cash	Private cash	Joint mobile m.	Private mobile m.	Joint cash	Private cash	Joint mobile m.	Private mobile m.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Age (in years)	32.770	0.043	0.344	0.563	0.614	0.004	0.034	0.058	0.061
	(6.904)	(0.591)	(0.598)	(0.519)	(0.556)				
Number of children	3.849	-0.041	0.087	0.044	0.159	-0.013	0.027	0.013	0.047
	(2.284)	(0.197)	(0.215)	(0.203)	(0.201)				
Household size	6.773	0.112	0.112	0.109	0.197	0.030	0.027	0.028	0.048
	(2.747)	(0.247)	(0.293)	(0.252)	(0.274)				
Is the head of the household	0.051	-0.005	0.029	-0.006	0.046	-0.014	0.084	-0.019	0.125
	(0.221)	(0.023)	(0.028)	(0.023)	(0.034)				
Is a refugee	0.108	0.064	0.025	-0.023	0.042	0.131	0.054	-0.054	0.089
	(0.311)	(0.068)	(0.063)	(0.055)	(0.064)				
Education above P5 level	0.541	-0.024	-0.000	-0.000	0.014	-0.033	-0.000	-0.001	0.019
	(0.499)	(0.047)	(0.042)	(0.043)	(0.048)				
Distance to nearest mobile money agent	1.388	0.130	-0.034	-0.057	0.600	0.060	-0.018	-0.035	0.228
	(1.221)	(0.241)	(0.179)	(0.176)	(0.313)				
Cost of reaching mobile money agent	1,397.297	-22.256	-134.527	-50.708	604.914	-0.009	-0.049	-0.018	0.189
	(1,952.066)	(310.520)	(253.245)	(264.083)	(352.334)				
Used mobile money last week	0.654	-0.058	0.020	0.062	-0.047	-0.086	0.029	0.095	-0.069
	(0.476)	(0.052)	(0.051)	(0.050)	(0.049)				
Primary user of mobile money account	0.976	-0.002	0.009	0.008	0.003	-0.008	0.044	0.042	0.015
	(0.154)	(0.013)	(0.013)	(0.011)	(0.011)				
Partner knows mobile money PIN	0.519	-0.007	-0.054	-0.003	-0.052	-0.010	-0.077	-0.004	-0.073
	(0.500)	(0.044)	(0.045)	(0.043)	(0.042)				
Knows partner's mobile money PIN	0.430	-0.043	-0.027	-0.064	-0.029	-0.062	-0.040	-0.092	-0.041
	(0.496)	(0.042)	(0.042)	(0.035)*	(0.041)				
Received any cash transfer before (Yes=1)	0.084	0.034	0.014	-0.038	0.020	0.081	0.033	-0.110	0.048
	(0.277)	(0.051)	(0.050)	(0.038)	(0.049)				
Any IGA (Yes=1)	0.957	-0.004	0.015	0.027	0.030	-0.013	0.055	0.114	0.129
	(0.204)	(0.023)	(0.023)	(0.020)	(0.019)				
Labor income – total	304.668	-46.750	-9.370	-34.894	-19.110	-0.085	-0.017	-0.063	-0.034
	(386.722)	(38.347)	(41.407)	(36.406)	(33.499)				
Joint IGA (Yes=1)	0.649	-0.077	-0.037	-0.029	-0.060	-0.112	-0.055	-0.042	-0.088
	(0.478)	(0.057)	(0.054)	(0.053)	(0.053)				
Labor income – joint	152.573	-36.226	-21.747	-9.071	-13.911	-0.087	-0.052	-0.020	-0.031
	(315.810)	(27.086)	(29.231)	(28.485)	(27.759)				
Self IGA (Yes=1)	0.919	0.013	0.016	0.028	0.023	0.036	0.043	0.078	0.064
	(0.273)	(0.029)	(0.030)	(0.027)	(0.029)				
Labor income – self	152.095	-10.524	12.377	-25.823	-5.200	-0.039	0.043	-0.099	-0.020
	(184.649)	(17.835)	(18.932)	(14.619)*	(15.281)*				
Decision-making index	0.004	-0.014	0.053	-0.067	0.053	-0.009	0.036	-0.046	0.035
	(1.018)	(0.115)	(0.111)	(0.106)	(0.120)				
Marital trust index	-0.007	0.060	0.062	-0.002	0.122	0.040	0.042	-0.000	0.086
	(1.009)	(0.096)	(0.097)	(0.084)	(0.096)				
Sharing index	-0.006	0.025	0.100	0.009	0.012	0.017	0.069	0.007	0.008
	(0.991)	(0.094)	(0.107)	(0.092)	(0.096)				
Marital control index	0.010	0.118	0.122	0.113	0.045	0.079	0.084	0.074	0.031
	(1.007)	(0.110)	(0.098)	(0.120)	(0.101)				
Any IPV (Yes=1)	0.430	-0.012	-0.010	0.012	-0.026	-0.017	-0.013	0.016	-0.037
	(0.496)	(0.053)	(0.055)	(0.056)	(0.052)				
Emotional IPV (Yes=1)	0.338	-0.017	-0.032	-0.001	-0.027	-0.025	-0.049	-0.001	-0.040
	(0.474)	(0.051)	(0.050)	(0.048)	(0.049)				
Physical IPV (Yes=1)	0.224	0.006	0.032	0.043	-0.008	0.009	0.052	0.071	-0.014
	(0.418)	(0.035)	(0.040)	(0.038)	(0.033)				
Sexual IPV (Yes=1)	0.141	0.000	0.011	0.028	-0.022	0.001	0.022	0.055	-0.046
	(0.348)	(0.036)	(0.037)	(0.039)	(0.037)				

Notes: Column (1) gives the mean and the standard deviation of observations in the control group; columns (2), (3), (4) and (5) report the differences between the control group and the joint cash, cash, joint mobile money and mobile money arms respectively. These differences are obtained by regressing each variable on the treatment indicators, controlling for randomization strata (district) with standard errors are clustered at the village level (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$). Columns (6), (7), (8) and (9) report the normalized difference between the control and the four different treatments, computed as the difference in means in the relevant treatment and control observations divided by the square root of the sum of the variances.

Table 2: Women's Employment

	Any IGA			Joint IGA			Self IGA		
	Any	Hours	Income	Any	Hours	Income	Any	Hours	Income
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Mode of Cash Transfers									
Cash	-0.010	4.476	36.332	0.076*	4.857	40.029*	-0.018	-0.380	-4.393
	(0.011)	(15.055)	(30.251)	(0.042)	(10.815)	(22.941)	(0.034)	(16.856)	(18.151)
Mobile money	0.003	26.882*	46.228	-0.003	-6.741	0.968	0.052	33.624**	45.544**
	(0.010)	(15.357)	(29.703)	(0.043)	(10.725)	(21.178)	(0.032)	(16.841)	(20.015)
Observations	1889	1889	1889	1889	1889	1889	1889	1889	1889
Control mean	0.978	261.059	259.995	0.511	71.008	112.118	0.819	190.052	147.877
H_0 : Cash = Mobile money	0.173	0.114	0.724	0.026	0.168	0.057	0.010	0.027	0.007
R-W p-value Cash	0.372	0.876	0.235	0.026	0.825	0.026	0.749	0.973	0.907
R-W p-value Mobile money	0.876	0.039	0.079	0.988	0.700	0.988	0.026	0.006	0.002
Panel B: Mode & Privacy of Cash Transfers									
Joint cash	-0.002	18.198	49.068	0.109**	16.407	53.341*	-0.022	1.791	-4.705
	(0.013)	(19.214)	(39.226)	(0.049)	(13.585)	(29.290)	(0.041)	(21.404)	(22.378)
Private cash	-0.018	-9.246	23.589	0.043	-6.694	26.760	-0.014	-2.552	-4.078
	(0.013)	(16.355)	(33.280)	(0.048)	(10.823)	(25.919)	(0.039)	(18.593)	(20.560)
Joint mobile money	0.009	31.007*	9.258	-0.022	-10.818	-27.382	0.071**	41.824**	37.335*
	(0.010)	(17.877)	(30.275)	(0.052)	(12.148)	(21.222)	(0.032)	(18.556)	(20.448)
Private mobile money	-0.004	22.812	82.704**	0.016	-2.719	28.961	0.033	25.532	53.617*
	(0.013)	(18.987)	(39.361)	(0.047)	(12.254)	(27.475)	(0.040)	(21.302)	(27.899)
Observations	1889	1889	1889	1889	1889	1889	1889	1889	1889
Control mean	0.978	261.059	259.995	0.511	71.008	112.118	0.819	190.052	147.877
H_0 : Joint cash = Private cash	0.245	0.157	0.529	0.176	0.052	0.391	0.856	0.841	0.978
H_0 : Joint cash = Joint mobile m.	0.341	0.535	0.293	0.015	0.038	0.004	0.008	0.066	0.065
H_0 : Private cash = Private mobile m.	0.318	0.094	0.147	0.553	0.699	0.940	0.246	0.194	0.043
H_0 : Joint mob. m. = Private mob. m.	0.273	0.688	0.056	0.459	0.488	0.028	0.266	0.450	0.565
H_0 : Joint cash = Private mobile m.	0.885	0.831	0.461	0.052	0.147	0.452	0.194	0.325	0.050
H_0 : Private cash = Joint mobile m.	0.020	0.026	0.653	0.211	0.685	0.024	0.011	0.019	0.050
R-W p-value Joint cash	0.959	0.606	0.329	0.004	0.300	0.038	0.914	0.995	0.995
R-W p-value Private cash	0.235	0.844	0.759	0.496	0.724	0.442	0.973	0.995	0.995
R-W p-value Joint mobile m.	0.606	0.070	0.959	0.855	0.496	0.260	0.002	0.002	0.022
R-W p-value Private mobile m.	0.959	0.361	0.016	0.855	0.855	0.442	0.639	0.254	0.013

Notes: Panel A presents the results of estimating specification 2 using ordinary least squares (OLS), while Panel B presents results based on specification 1. The dependent variables are as follows: columns 1-3 give the overview of women's involvement in any form of income-generating activities, whether conducted jointly with the spouse or independently, while columns 4-6 focus on income-generating activities respondents conducted jointly with their spouse and columns 8-9 focus on income-generating activities respondents conducted themselves independent of their spouse. In columns 1, 4 and 6 the outcome is a dummy variable =1 if the respondent was involved in any such income-generating activity during the past month; in columns 2, 5 and 8 the outcome is the number of hours the respondent spent in such income-generating activities during the past month; in columns 3, 6 and 9 the outcome is the amount of income respondent earned from such activities during the past month in thousand UGX. For each estimate, standard errors are provided in parentheses to indicate the precision of the estimates. Standard errors are clustered at the village level (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$). 'R-W p-value's report Romano and Wolf (2005) step-down adjusted p-values robust to multiple hypothesis testing with 1000 bootstrap replications. When correcting the p-values, we group the outcomes in three families: any IGA (1–3), joint IGA (4-6) and self IGA (7–9).

Table 3: Women's Decision Making and Home Environment

	Decision-making index (1)	Sharing index (2)	Marital trust index (3)	Controlling behaviors index (4)
Panel A: Mode of Cash Transfers				
Cash	-0.007	-0.018	0.164**	-0.058
	(0.061)	(0.061)	(0.072)	(0.065)
Mobile money	0.170***	-0.187***	-0.104	0.116*
	(0.061)	(0.061)	(0.072)	(0.065)
Observations	1889	1889	1889	1889
Control mean	-0.000	0.000	0.000	0.000
H_0 : Cash = Mobile money	0.000	0.001	0.000	0.001
R-W p-value Cash	0.928	0.928	0.080	0.739
R-W p-value Mobile money	0.025	0.008	0.440	0.273
Panel B: Mode & Privacy of Cash Transfers				
Joint cash	0.037	0.036	0.184**	-0.164**
	(0.070)	(0.070)	(0.082)	(0.075)
Private cash	-0.051	-0.072	0.145*	0.049
	(0.070)	(0.070)	(0.082)	(0.075)
Joint mobile money	0.165**	-0.207***	-0.161*	0.232***
	(0.070)	(0.070)	(0.083)	(0.075)
Private mobile money	0.174**	-0.168**	-0.047	0.001
	(0.070)	(0.070)	(0.083)	(0.075)
Observations	1889	1889	1889	1889
Control mean	-0.000	0.000	0.000	0.000
H_0 : Joint cash = Private cash	0.207	0.120	0.637	0.004
H_0 : Joint cash = Joint mobile money	0.066	0.001	0.000	0.000
H_0 : Private cash = Private mobile money	0.001	0.166	0.019	0.518
H_0 : Joint mobile m. = Private mobile m.	0.904	0.582	0.169	0.002
H_0 : Joint cash = Private mobile money	0.049	0.003	0.005	0.027
H_0 : Private cash = Joint mobile money	0.002	0.053	0.000	0.014
R-W p-value Joint cash	0.971	0.971	0.192	0.199
R-W p-value Private cash	0.971	0.889	0.420	0.971
R-W p-value Joint mobile m.	0.166	0.034	0.333	0.021
R-W p-value Private mobile m.	0.135	0.150	0.971	0.988

Notes: Panel A presents the results of estimating specification 2 using ordinary least squares (OLS), while Panel B presents results based on specification 1. The dependent variable in column 1 is a standardized decision-making index, derived from indicators for whether the respondent was the sole decision-maker regarding matters such as working to earn money, children's schooling, children's health, their own health, small and large purchases, family planning, opening a bank account or taking out loans. The dependent variable in Column 2 is a standardized index combining 6 questions related to the degree to which she and her partner share the money that they earn with one another. For details on the questions of the sharing index see notes of Table A.3. The dependent variable in Column 3 is a standardized index combining responses to 8 questions related to respondents' degree of trust for her partner. For details on the components of the marital trust index see notes for Table A.4. The dependent variable in Column 4 is a standardized index combining indicators for whether the respondent's partner (during the last year) was jealous or angry if the respondent talked to other men, wrongly accused the respondent of being unfaithful, did not permit the respondent to meet your female friends, tried to limit the respondent's contact with family, insisted on knowing where the respondent was at all times. All indices are generated following a GLS weighting procedure based on Anderson (2008), then standardized with respect to the control group. Standard errors are included in parentheses next to each estimate to signify the precision of these estimates. Standard errors are clustered at the village level (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$). 'R-W p-value's report Romano and Wolf (2005) step-down adjusted p-values robust to multiple hypothesis testing with 1000 bootstrap replications. When correcting the p-values, we group all of the outcomes in one family.

Table 4: Intimate Partner Violence

	Any	Types of IPV		
	IPV	Emotional	Physical	Sexual
	(1)	(2)	(3)	(4)
Panel A: Mode of Cash Transfers				
Cash	-0.070	-0.059	-0.044	-0.019
	(0.043)	(0.038)	(0.029)	(0.022)
Mobile money	-0.007	-0.007	0.022	0.030
	(0.045)	(0.041)	(0.029)	(0.025)
Observations	1889	1889	1889	1889
Control mean	0.454	0.354	0.211	0.135
H_0 : Cash = Mobile money	0.060	0.100	0.005	0.013
R-W p-value Cash	0.016	0.130	0.130	0.442
R-W p-value Mobile money	0.775	0.768	0.442	0.227
Panel B: Mode & Privacy of Cash Transfers				
Joint cash	-0.123***	-0.109***	-0.084***	-0.041*
	(0.047)	(0.041)	(0.031)	(0.024)
Private cash	-0.017	-0.008	-0.003	0.002
	(0.048)	(0.044)	(0.033)	(0.025)
Joint mobile money	-0.012	0.004	0.012	0.016
	(0.053)	(0.052)	(0.033)	(0.028)
Private mobile money	-0.002	-0.018	0.031	0.045
	(0.051)	(0.043)	(0.035)	(0.031)
Observations	1889	1889	1889	1889
Control mean	0.454	0.354	0.211	0.135
H_0 : Joint cash = Private cash	0.011	0.007	0.008	0.058
H_0 : Joint cash = Joint mobile money	0.020	0.016	0.001	0.027
H_0 : Private cash = Private mobile money	0.745	0.800	0.320	0.161
H_0 : Joint mobile m. = Private mobile m.	0.840	0.644	0.583	0.387
H_0 : Joint cash = Private mobile money	0.007	0.013	0.000	0.004
H_0 : Private cash = Joint mobile money	0.924	0.803	0.619	0.602
R-W p-value Joint cash	0.001	0.003	0.003	0.100
R-W p-value Private cash	0.883	0.993	0.999	0.999
R-W p-value Joint mobile m.	0.887	0.999	0.975	0.948
R-W p-value Private mobile m.	0.958	0.975	0.739	0.248

Notes: Panel A presents the results of estimating specification 2 using ordinary least squares (OLS), while Panel B presents results based on specification 1. The data is organized as follows: Column 1 provides insights into women's overall experience with any form of IPV, while Columns 2 to 4 present her experience with emotional, physical, and sexual IPV respectively. Standard errors, indicating the precision of the estimates, are included in parentheses next to each estimate. Standard errors are clustered at the village level (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$). 'R-W p-value's report Romano and Wolf (2005) step-down adjusted p-values robust to multiple hypothesis testing with 1000 bootstrap replications. When correcting the p-values, we group the outcomes in two families: any IPV (1), types of IPV (2-4).

A Appendix

Table A.1: Attrition

	Female respondents (1)	Male respondents (2)
Joint cash	-0.025	-0.038
	(0.016)	(0.024)
Private cash	-0.030*	-0.010
	(0.017)	(0.028)
Joint mobile money	-0.005	-0.023
	(0.017)	(0.026)
Private mobile money	-0.020	-0.028
	(0.017)	(0.025)
Observations	2002	2002
Control mean	0.073	0.135
H_0 : Joint cash = Private cash	0.770	0.268
H_0 : Joint cash = Joint mobile money	0.208	0.514
H_0 : Private cash = Private mobile money	0.529	0.509
H_0 : Joint mobile m. = Private mobile m.	0.377	0.853
H_0 : Joint cash = Private mobile money	0.713	0.631
H_0 : Private cash = Joint mobile money	0.144	0.635

Notes: The dependent variable is an indicator that takes value one if the female respondent (column 1) or the male respondent (column 2) could not be surveyed in the endline survey. All regressions control for the randomization strata (district indicator). Standard errors are clustered at the village level (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

Table A.2: Components of the decision-making index

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Mode of Cash Transfers								
Cash	-0.017	-0.009	0.018	0.035	-0.004	-0.045	-0.012	0.031
	(0.043)	(0.024)	(0.026)	(0.043)	(0.046)	(0.027)	(0.028)	(0.040)
Mobile money	0.045	0.054**	0.083***	0.084**	0.073	0.003	0.036	0.044
	(0.044)	(0.026)	(0.029)	(0.042)	(0.045)	(0.030)	(0.030)	(0.038)
Observations	1889	1782	1782	1889	1889	1889	1889	1889
Control mean	0.343	0.146	0.149	0.449	0.359	0.135	0.181	0.176
H_0 : Cash = Mobile money	0.081	0.003	0.012	0.160	0.046	0.032	0.043	0.662
Panel B: Mode & Privacy of Cash Transfers								
Joint cash	-0.006	-0.012	0.023	0.057	0.057	-0.054*	-0.019	0.040
	(0.049)	(0.026)	(0.030)	(0.051)	(0.056)	(0.030)	(0.031)	(0.046)
Private cash	-0.028	-0.006	0.013	0.013	-0.064	-0.036	-0.006	0.022
	(0.051)	(0.029)	(0.031)	(0.049)	(0.051)	(0.031)	(0.033)	(0.046)
Joint mobile money	0.024	0.069**	0.105***	0.084*	0.070	0.002	0.046	0.013
	(0.050)	(0.032)	(0.036)	(0.049)	(0.052)	(0.037)	(0.034)	(0.042)
Private mobile money	0.066	0.039	0.061*	0.084*	0.077	0.004	0.026	0.075*
	(0.051)	(0.029)	(0.033)	(0.047)	(0.052)	(0.032)	(0.034)	(0.042)
Observations	1889	1782	1782	1889	1889	1889	1889	1889
Control mean	0.343	0.146	0.149	0.449	0.359	0.135	0.181	0.176
H_0 : Joint cash = Private cash	0.659	0.802	0.752	0.388	0.030	0.493	0.672	0.707
H_0 : Joint cash = Joint mobile money	0.529	0.008	0.028	0.599	0.810	0.096	0.049	0.531
H_0 : Private cash = Private mobile money	0.071	0.129	0.165	0.133	0.006	0.175	0.356	0.222
H_0 : Joint mobile m. = Private mobile m.	0.414	0.359	0.275	0.995	0.900	0.970	0.569	0.107
H_0 : Joint cash = Private mobile money	0.151	0.054	0.265	0.579	0.720	0.044	0.175	0.412
H_0 : Private cash = Joint mobile money	0.298	0.023	0.015	0.153	0.009	0.266	0.128	0.833

Notes: Panel A presents the results of estimating specification 2 using ordinary least squares (OLS), while Panel B presents results based on specification 1. The dependent variables are indicators for whether the respondent was the sole decision-maker regarding matters such as (1) working to earn money, (2) children's schooling, (3) children's health, (4) their own health, (5) small and large purchases, (6) family planning, (7) opening a bank account, (8) taking out loans. Standard errors are included in parentheses next to each estimate to signify the precision of these estimates. Standard errors are clustered at the village level (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

Table A.3: Components of the sharing index

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Mode of Cash Transfers						
Cash	-0.020	0.052	0.025	-0.015	-0.024	-0.063
	(0.105)	(0.104)	(0.093)	(0.105)	(0.115)	(0.108)
Mobile money	-0.292***	-0.221**	-0.175*	-0.228**	-0.226**	-0.183*
	(0.102)	(0.100)	(0.093)	(0.100)	(0.111)	(0.106)
Observations	1889	1889	1889	1889	1889	1889
Control mean	3.378	3.249	3.346	3.435	3.216	3.332
H_0 : Cash = Mobile money	0.001	0.001	0.008	0.008	0.009	0.148
Panel B: Mode & Privacy of Cash Transfers						
Joint cash	0.035	0.125	0.108	0.030	0.040	-0.014
	(0.123)	(0.122)	(0.111)	(0.125)	(0.134)	(0.130)
Private cash	-0.075	-0.022	-0.058	-0.059	-0.088	-0.113
	(0.116)	(0.117)	(0.101)	(0.117)	(0.123)	(0.115)
Joint mobile money	-0.329***	-0.241**	-0.169*	-0.271**	-0.216*	-0.217*
	(0.111)	(0.106)	(0.102)	(0.111)	(0.122)	(0.123)
Private mobile money	-0.256**	-0.201*	-0.182	-0.185	-0.235*	-0.148
	(0.118)	(0.116)	(0.112)	(0.115)	(0.122)	(0.116)
Observations	1889	1889	1889	1889	1889	1889
Control mean	3.378	3.249	3.346	3.435	3.216	3.332
H_0 : Joint cash = Private cash	0.332	0.210	0.112	0.460	0.267	0.406
H_0 : Joint cash = Joint mobile money	0.001	0.001	0.008	0.009	0.026	0.111
H_0 : Private cash = Private mobile money	0.099	0.108	0.240	0.249	0.144	0.732
H_0 : Joint mobile m. = Private mobile m.	0.479	0.686	0.900	0.407	0.850	0.543
H_0 : Joint cash = Private mobile money	0.013	0.006	0.012	0.070	0.017	0.264
H_0 : Private cash = Joint mobile money	0.012	0.030	0.240	0.046	0.204	0.351

Notes: Panel A presents the results of estimating specification 2 using ordinary least squares (OLS), while Panel B presents results based on specification 1. The dependent variables are responses to a series of questions where the respondent was asked to rank, on a scale of 1 to 5 (1=Never, 2=Very rarely, 3=Sometimes, 4=Often, 5=Always) how often the following happens: Column (1) "My partner discusses all the money that he earns with me"; Column (2) "My partner trusts me with all the money that he earns"; Column (3) "My partner willingly shares the money that he earns with me"; Column (4) "I discuss all the money that I earn with my partner"; Column (5) "I trust my partner with all the money that I earn"; Column (6) "I willingly share the money that I earn with my partner". Standard errors are included in parentheses next to each estimate to signify the precision of these estimates. Standard errors are clustered at the village level (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

Table A.4: Components of the marital trust index

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Mode of Cash Transfers								
Cash	0.103	0.159	0.420**	-0.051	0.061	0.145	0.136	0.043
	(0.141)	(0.133)	(0.170)	(0.131)	(0.158)	(0.133)	(0.118)	(0.156)
Mobile money	-0.141	-0.061	0.108	-0.318**	-0.188	-0.160	-0.114	-0.262
	(0.144)	(0.135)	(0.165)	(0.131)	(0.169)	(0.134)	(0.116)	(0.164)
Observations	1889	1889	1889	1889	1889	1889	1889	1889
Control mean	5.203	4.303	3.254	5.162	4.411	5.146	5.305	4.857
H_0 : Cash = Mobile money	0.042	0.068	0.041	0.017	0.061	0.004	0.017	0.018
Panel B: Mode & Privacy of Cash Transfers								
Joint cash	0.098	0.229	0.350*	0.009	0.096	0.271*	0.306**	0.018
	(0.171)	(0.168)	(0.207)	(0.156)	(0.194)	(0.151)	(0.140)	(0.177)
Private cash	0.108	0.088	0.489**	-0.110	0.027	0.019	-0.034	0.069
	(0.156)	(0.144)	(0.198)	(0.148)	(0.164)	(0.151)	(0.138)	(0.175)
Joint mobile money	-0.234	-0.096	0.079	-0.428***	-0.248	-0.259	-0.179	-0.366*
	(0.174)	(0.151)	(0.181)	(0.161)	(0.199)	(0.158)	(0.142)	(0.202)
Private mobile money	-0.048	-0.026	0.136	-0.208	-0.130	-0.062	-0.050	-0.160
	(0.162)	(0.169)	(0.208)	(0.145)	(0.195)	(0.147)	(0.129)	(0.177)
Observations	1889	1889	1889	1889	1889	1889	1889	1889
Control mean	5.203	4.303	3.254	5.162	4.411	5.146	5.305	4.857
H_0 : Joint cash = Private cash	0.951	0.397	0.528	0.445	0.684	0.079	0.023	0.759
H_0 : Joint cash = Joint mobile money	0.067	0.060	0.191	0.010	0.091	0.001	0.002	0.049
H_0 : Private cash = Private mobile money	0.311	0.490	0.111	0.498	0.358	0.563	0.904	0.168
H_0 : Joint mobile m. = Private mobile m.	0.281	0.687	0.783	0.165	0.562	0.180	0.369	0.289
H_0 : Joint cash = Private mobile money	0.388	0.175	0.353	0.157	0.259	0.017	0.012	0.291
H_0 : Private cash = Joint mobile money	0.041	0.215	0.038	0.049	0.117	0.067	0.335	0.025

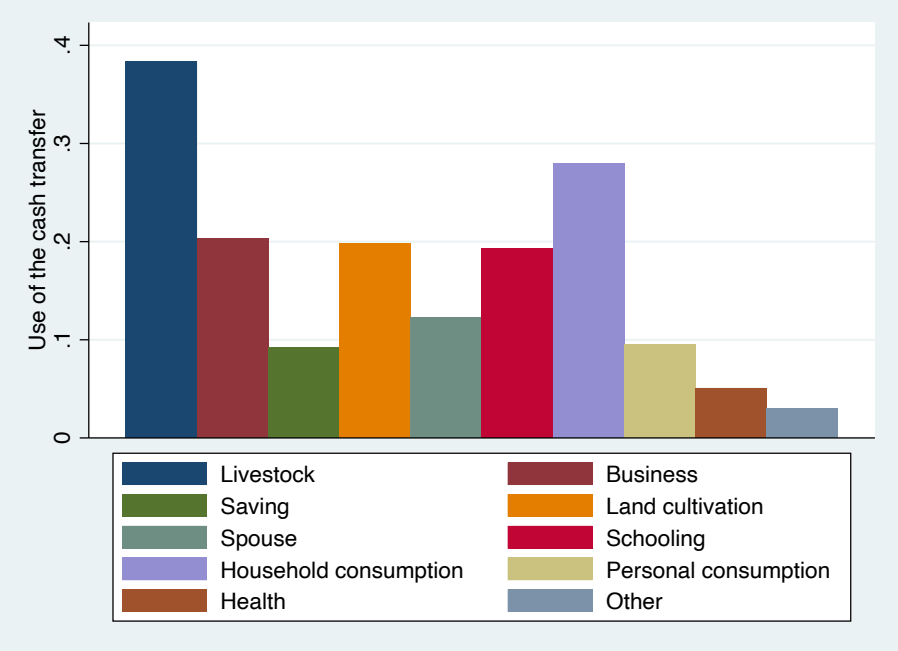
Notes: Panel A presents the results of estimating specification 2 using ordinary least squares (OLS), while Panel B presents results based on specification 1. The dependent variables are responses to a series of questions where the respondent was asked to state the extent to which she agrees with the following statement on a scale of 1 to 7 (where 1 = strongly disagree; 4 = neither agree or disagree and 7 = strongly agree): Column (1) "My partner has proven to be trustworthy and I am willing to let him engage in activities which other partners find too threatening"; Column (2) "My partner is very unpredictable. I never know how he is going to act from one day to the next"; Column (3) "I feel very uncomfortable when my partner has to make decisions which will affect me personally and my welfare"; Column (4) "Even if I have no reason to expect my partner to share things with me, I still feel certain that he will"; Column (5) "I am certain that my partner would not cheat on me, even if the opportunity arose and there was no chance that he would get caught"; Column (6) "I can rely on my partner to keep the promises he makes to me"; Column (7) "When I am with my partner, I feel secure in facing unknown new situations"; Column (8) "Even when my partner makes excuses which sound rather unlikely, I am confident that he is telling the truth". Standard errors are included in parentheses next to each estimate to signify the precision of these estimates. Standard errors are clustered at the village level (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

Table A.5: Components of the controlling behaviors index

	(1)	(2)	(3)	(4)	(5)
Panel A: Mode of Cash Transfers					
Cash	-0.002	-0.010	-0.021	-0.007	-0.018
	(0.039)	(0.038)	(0.029)	(0.022)	(0.047)
Mobile money	0.032	0.020	0.040	0.025	0.031
	(0.039)	(0.039)	(0.033)	(0.026)	(0.050)
Observations	1889	1889	1889	1889	1889
Control mean	0.424	0.216	0.132	0.081	0.389
H_0 : Cash = Mobile money	0.345	0.250	0.022	0.119	0.198
Panel B: Mode & Privacy of Cash Transfers					
Joint cash	-0.021	-0.059	-0.047	-0.016	-0.057
	(0.046)	(0.039)	(0.032)	(0.025)	(0.053)
Private cash	0.018	0.039	0.006	0.001	0.021
	(0.046)	(0.042)	(0.033)	(0.025)	(0.052)
Joint mobile money	0.034	0.038	0.080*	0.070**	0.047
	(0.045)	(0.044)	(0.045)	(0.035)	(0.059)
Private mobile money	0.030	0.001	-0.001	-0.019	0.015
	(0.048)	(0.044)	(0.033)	(0.024)	(0.056)
Observations	1889	1889	1889	1889	1889
Control mean	0.424	0.216	0.132	0.081	0.389
H_0 : Joint cash = Private cash	0.421	0.002	0.072	0.449	0.102
H_0 : Joint cash = Joint mobile money	0.253	0.006	0.002	0.012	0.058
H_0 : Private cash = Private mobile money	0.821	0.317	0.831	0.360	0.903
H_0 : Joint mobile m. = Private mobile m.	0.941	0.355	0.056	0.008	0.581
H_0 : Joint cash = Private mobile money	0.315	0.080	0.111	0.882	0.168
H_0 : Private cash = Joint mobile money	0.752	0.995	0.080	0.047	0.634

Notes: Panel A presents the results of estimating specification 2 using ordinary least squares (OLS), while Panel B presents results based on specification 1. The dependent variables are indicators for (1) whether the respondent's partner was (during the last year) jealous or angry if the respondent talked to other men, (2) wrongly accused the respondent of being unfaithful, (3) did not permit the respondent to meet your female friends, (4) tried to limit the respondent's contact with family, (5) insisted on knowing where the respondent was at all times. Standard errors are included in parentheses next to each estimate to signify the precision of these estimates. Standard errors are clustered at the village level (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

Figure A.1: Use of the cash transfers



Notes: Sample is restricted to women in any treatment group. Each bar represents the proportion of women who reported using the cash transfer for the corresponding purpose.

Table A.6: Use of the cash transfer, differences between what women vs men report

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Male	-0.021	-0.081***	-0.047**	-0.036*	-0.079***	-0.016	-0.070**	0.012	0.006	-0.001
	(0.024)	(0.023)	(0.019)	(0.020)	(0.023)	(0.020)	(0.033)	(0.017)	(0.012)	(0.011)
Joint mobile money	-0.004	0.010	-0.006	-0.111***	0.003	-0.015	-0.079*	0.004	-0.001	-0.018
	(0.048)	(0.040)	(0.025)	(0.041)	(0.034)	(0.034)	(0.043)	(0.025)	(0.017)	(0.012)
Joint mobile money × Male	-0.006	0.019	0.004	0.062*	0.001	-0.049*	-0.013	-0.048*	-0.018	0.005
	(0.037)	(0.033)	(0.023)	(0.032)	(0.030)	(0.028)	(0.046)	(0.026)	(0.016)	(0.013)
Observations	1476	1476	1476	1476	1476	1476	1476	1476	1476	1476
Control mean	0.462	0.266	0.094	0.319	0.125	0.248	0.446	0.078	0.057	0.037

Notes: Sample is restricted to "Joint cash" and "Joint mobile money" treatment arms. "Male" is an indicator =1 if the information was reported by the male respondents and 0 otherwise. The dependent variables are indicators for whether the cash transfer used for various purposes: column (1) livestock, column (2) business, column (3) savings, column (4) land cultivation, column (5) spouse, column (6) schooling, column (7) household consumption, column (8) personal, column (9) health, column (10) other use. Standard errors are included in parentheses next to each estimate to signify the precision of these estimates. Standard errors are clustered at the village level (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

Table A.7: Security

	Any theft (1)	Amount lost (2)
Panel A: Mode of Cash Transfers		
Cash	-0.008	0.455
	(0.036)	(0.627)
Mobile money	-0.009	1.416**
	(0.033)	(0.671)
Observations	1886	1886
Control mean	0.105	1.008
H_0 : Cash = Mobile money	0.966	0.159
Panel B: Mode & Privacy of Cash Transfers		
Joint cash	0.003	0.701
	(0.044)	(0.856)
Private cash	-0.019	0.209
	(0.038)	(0.671)
Joint mobile money	-0.019	1.049
	(0.034)	(0.747)
Private mobile money	0.001	1.781*
	(0.038)	(0.934)
Observations	1886	1886
Control mean	0.105	1.008
H_0 : Joint cash = Private cash	0.596	0.581
H_0 : Joint cash = Joint mobile money	0.547	0.716
H_0 : Private cash = Private mobile money	0.558	0.106
H_0 : Joint mobile m. = Private mobile m.	0.486	0.479
H_0 : Joint cash = Private mobile money	0.971	0.331
H_0 : Private cash = Joint mobile money	0.979	0.289

Notes: Panel A presents the results of estimating specification 2 using ordinary least squares (OLS), while Panel B presents results based on specification 1. The dependent variable in column 1 is an indicator equal to 1 if the respondent lost any cash or mobile money due to theft during the past month as measured at the endline survey. The dependent variable in column 2 is the total value of any cash or mobile money lost to theft during the past month as measured at the endline survey. Standard errors are included in parentheses next to each estimate to signify the precision of these estimates. Standard errors are clustered at the village level (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

Table A.8: Women's empowerment, Heterogeneity by transaction costs

	Self IGA			Decision-making index
	Any	Hours	Income	
	(1)	(2)	(3)	(4)
Cash	-0.056	-20.984	4.161	0.095
	(0.037)	(22.506)	(29.119)	(0.127)
Mobile money	0.028	31.467	40.741	0.206*
	(0.031)	(24.990)	(30.417)	(0.121)
Agent (for mobile money) far away	-0.102***	-57.523**	-23.005	0.043
	(0.038)	(23.289)	(27.467)	(0.122)
Cash × Agent far	0.054	29.379	-18.510	-0.178
	(0.053)	(30.760)	(34.207)	(0.154)
Mobile money × Agent far	0.035	2.115	7.147	-0.058
	(0.046)	(31.226)	(35.305)	(0.152)
Observations	1889	1889	1889	1889
Control mean (Agent close)	0.883	224.547	166.248	-0.025
H_0 : Cash = Mobile money	0.012	0.032	0.183	0.319
Treatment effects for Agent far:				
Cash + Cash × Agent far	-0.001	8.395	-14.349	-0.083
	(0.045)	(22.313)	(20.987)	(0.112)
p	0.978	0.707	0.495	0.459
Mobile money + Mobile money × Agent far	0.064	33.583	47.888	0.148
	(0.042)	(20.629)	(23.641)	(0.116)
p	0.130	0.105	0.044	0.202
Control mean (Agent far)	0.781	169.769	137.075	0.015
H_0 : Cash = Mobile money	0.063	0.160	0.002	0.005

Notes: "Mobile money agent far away" is a dummy variable =1 if the distance between respondent's house and the nearest mobile money agent is above the sample median, 0 otherwise. In column 1 the outcome is a dummy variable =1 if the respondent was involved in any income-generating activity independent of their spouse during the past month; in column 2 the outcome is the number of hours the respondent spent in income-generating activities independent of their spouse during the past month; in column 3 the outcome is the amount of income respondent earned from activities independent of their spouse during the past month in thousand UGX. The dependent variable in column 4 is a standardized decision-making index, derived from indicators for whether the respondent was the sole decision-maker regarding matters such as working to earn money, children's schooling, children's health, their own health, small and large purchases, family planning, opening a bank account or taking out loans. For each estimate, standard errors are shown in parentheses to denote the precision of these estimates. Standard errors are clustered at the village level (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

Table A.9: Women's empowerment, Heterogeneity by self-control

	Self IGA			Decision-
	Any	Hours	Income	making index
	(1)	(2)	(3)	(4)
Cash	0.011	-6.455	6.288	0.009
	(0.036)	(19.565)	(20.313)	(0.087)
Mobile money	0.050	26.058	36.866	0.232**
	(0.037)	(21.132)	(23.629)	(0.093)
Low self-control	0.013	-32.170	-21.639	0.162
	(0.043)	(19.660)	(19.372)	(0.113)
Cash × Low self-control	-0.061	13.022	-22.156	-0.036
	(0.054)	(25.562)	(25.042)	(0.144)
Mobile money × Low self-control	0.003	15.809	18.288	-0.132
	(0.052)	(25.557)	(29.289)	(0.142)
Observations	1889	1889	1889	1889
Control mean (High self-control)	0.821	206.838	155.715	-0.068
H_0 : Cash = Mobile money	0.234	0.089	0.185	0.004
Treatment effects for Low self-control:				
Cash + Cash × Low self-control	-0.050	6.567	-15.868	-0.027
	(0.051)	(22.753)	(23.502)	(0.141)
p	0.326	0.773	0.500	0.850
Mobile money + Mobile money × Low-self-control	0.054	41.867	55.154	0.100
	(0.046)	(21.076)	(25.966)	(0.135)
p	0.242	0.048	0.035	0.457
Control mean (Low self-control)	0.817	171.346	139.143	0.076
H_0 : Cash = Mobile money	0.004	0.067	0.001	0.250

Notes: At baseline, respondents were asked to state to what extent the following statements apply to them on a scale of 1 (completely agree) to 5(completely disagree): "Before I buy something I carefully consider whether I can afford it", "I tend to live for today and let tomorrow take care of itself", "I find it more satisfying to spend money than to save it for the long term", "Money is there to be spent", "Completely agree, 2, 3, 4, completely disagree". We flip the responses to statement 1, then combine the 4 variables following a GLS weighting procedure based on Anderson (2008). "Low self-control" is =1 if the respondent's self-control index is below the sample median, 0 otherwise. In column 1 the outcome is a dummy variable =1 if the respondent was involved in any income-generating activity independent of their spouse during the past month; in column 2 the outcome is the number of hours the respondent spent in income-generating activities independent of their spouse during the past month; in column 3 the outcome is the amount of income respondent earned from activities independent of their spouse during the past month in thousand UGX. The dependent variable in column 4 is a standardized decision-making index, derived from indicators for whether the respondent was the sole decision-maker regarding matters such as working to earn money, children's schooling, children's health, their own health, small and large purchases, family planning, opening a bank account or taking out loans. For each estimate, standard errors are shown in parentheses to denote the precision of these estimates. Standard errors are clustered at the village level (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).