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# Targeting meets constraints: Cash transfers, digital access and women's empowerment

Working Paper

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# Abstract

In a randomised cash transfer programme in rural Tanzania, mothers assigned as recipients could receive funds via mobile money or nominate another person to receive the transfers on their behalf. We show that women with limited digital access are substantially more likely to nominate others to receive a transfer and thus are less likely to directly receive the transfers intended for them. Among those who nominate others to receive transfers, women with lower autonomy in the household are more likely to nominate their spouse. Because intermediaries can either return the cash or gain control over how it is spent, these nomination patterns can shift effective control away from the targeted women. Thus, the women most in need of empowerment may be the least likely to receive and benefit from transfers. These findings highlight a key challenge for targeted transfer policies: without addressing underlying digital and intra-household constraints, programmes may fail to reach and empower the intended beneficiaries.

**JEL classification:** D13, F63, F68, J16

**Keywords:** Cash transfers, Targeting, Empowerment, Household economics

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# 1 Introduction

Governments in low- and middle-income countries are rapidly digitising social protection. Cash transfers that were once paid out in person are now delivered into bank and mobile money accounts. At the same time, many programmes explicitly target women as recipients, motivated by evidence that putting resources into women's hands can raise investments in children and shift intra-household allocation (Almås *et al.*, 2018; Akresh *et al.*, 2013; Lundberg *et al.*, 1997). The policy narrative is that if the state can send money directly to women's phones, digital transfers should improve delivery efficiency and promote gender equality.

However, this narrative does not sit easily with the fact that across low- and middle-income countries, women are markedly less digitally empowered than men. In sub-Saharan Africa, women are substantially less likely than men to own a mobile phone or a smartphone, and also less likely to use mobile internet or hold a mobile money account (GSMA, 2023b, 2024, 2025). Survey data also show that many of those who have a mobile money accounts cannot use them without help (Demirgüç-Kunt *et al.*, 2022). Any policy that aims to empower women with digital transfers therefore faces the challenge that not all women in need of empowerment will be able to receive such transfers. In fact, those with the lowest levels of empowerment to start with – arguably those who are in most need of being empowered – may be those that are hardest to reach through such programmes.

In this paper, we study what happens at the point of payment when a programme targets women with digital cash transfers. In a digital system, the woman named as the recipient may not be the person who actually receives the transfer in her own account. If she lacks a working phone or mobile money account, or does not have the capacity or agency to use these, she may rely on someone else to receive the transfer instead. This means that the woman who is targeted is not necessarily the person that directly receives the transfer. In some programmes targeted individuals can either receive the transfer in their own mobile money account or choose to nominate another person to receive it on their behalf.

We use data from a randomised controlled trial (RCT) in Dodoma, Tanzania, to study this choice. The trial was a multi-arm, clustered experiment that included an unconditional cash transfer (UCT) arm where benefits were delivered via mobile money. Within UCT communities, households were randomly assigned to have the mother or father as the recipient of the transfers. 40% of mothers and 9% of fathers did not have a phone at baseline.<sup>1</sup> The implementation protocol therefore

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<sup>1</sup> Due to survey coding errors, we have information on father phone ownership for 427 out of 905 fathers (47%). For the remaining 478 observations, we impute the missing values at baseline. Missing father characteristics were imputed using district-level means:

$$\widehat{x}_{ij} = \frac{1}{N_j} \sum_{k=1}^{N_j} x_{kj} \text{ for non-missing } x_{kj} \text{ in district } j \text{ with district sample size } N_j.$$

allowed the targeted individual to nominate another person to receive the transfers if they lacked a usable account or handset, or for any other reason. The nominee received the transfers directly into their own mobile money account, with a script that explained that the cash should then be passed on to the targeted household member.<sup>2</sup> We refer to this decision as ‘nomination’ and use it to track whether a targeted woman receives the transfers in her own account or whether someone else is designated as the initial recipient. We also examine whom she nominates – specifically, whether she selects her spouse or another individual in or outside of her household.

We document three main findings. First, mothers and fathers exhibit sharply different nomination patterns. Half of targeted mothers nominate someone else to receive transfers, compared to 27% of targeted fathers. When mothers nominate someone, they predominantly choose their husbands, while fathers rarely nominate their wives. Even among mothers who own phones and mobile money accounts, 37% nominate someone to receive transfers, compared to 26% of fathers. Second, when examining what drives these patterns, we find that in regressions controlling for household and individual characteristics, a summary measure of digital empowerment (phone ownership, mobile money accounts, capability and usage) is the strongest predictor of nomination. Third, even controlling for digital empowerment, mothers who cannot go to the market alone are 24 percentage points more likely to nominate their spouse to receive the transfers.

These findings matter for both policy and research. For policy, they reveal a gap between targeting intentions and implementation outcomes. Programmes target women in order to empower them, but many targeted women do not receive transfers in their own accounts. This matters because recent evidence shows that when women receive payments directly into their own accounts, they experience greater financial control, increased labour supply, and shifts in gender norms (Field *et al.*, 2021; Aker *et al.*, 2016; Riley, 2024). In regard to research in this area, we provide the first evidence on how digital payment systems interact with gender inequalities at the point of payment. While existing work shows that targeting women can affect female decision-making power within households (Almås *et al.*, 2018), we show that digital delivery creates a new margin where control can be shifted away from targeted recipients. More broadly, our findings illustrate how programmes designed to help disadvantaged groups may fail to reach those most in need when programme design does not account for the constraints that define disadvantage.

The remainder of the paper proceeds as follows. Section 2 describes the institutional context of mobile money and social protection in Tanzania. Section 3 outlines the experimental design, registration process, and data. Section 4 presents nomination patterns by gender and relationship to nominee; and it examines what predicts whether women nominate someone to receive the transfers, and whom they choose. Section 5 discusses the implications for digital financial inclusion, and programme design. Section 6 concludes.

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For mothers, we have no missing observations.

<sup>2</sup> The exact script can be found in the ‘Methods and procedures’ section.

## 2 Background

Tanzania has one of the most developed mobile money ecosystems in sub-Saharan Africa. Four operators – Vodacom (M-Pesa), Tigo Pesa, Airtel Money, and Halopesa – provide nationwide services and a dense network of agents, with Vodacom's M-Pesa holding the largest share of transactions and active accounts (International Finance Corporation, 2024; Tanzania Communications Regulatory Authority, 2024). Mobile money has expanded rapidly since M-Pesa's launch in 2008, and by 2023 the sector recorded 55.8 million active accounts and 5.3 billion transactions annually, representing more than 116% growth in accounts since 2019 (TICGL, 2024). The government is also increasingly using mobile money for their transfers to the public. Under the Productive Social Safety Net (PSSN), implemented by the Tanzania Social Action Fund (TASAF), cash transfers and public works wages are paid to poor and vulnerable households nationwide. Programme documents emphasise a gradual shift from manual payment points to bank and mobile money accounts in order to reduce leakage and standardise payments, with nearly 50% of transfers being delivered electronically by 2024 (World Bank DIME and Tanzania Social Action Fund, 2023; World Bank, 2025).

Within this system, women are designated as the primary recipients of social transfers. PSSN design documents and donor summaries state that benefits are paid to an adult woman in the household whenever possible, reflecting a deliberate strategy to route resources through women, as primary caregivers (Mihyo and Msami, 2018). Programme rules specify that only in households with no adult woman can a man be registered as the recipient instead (World Bank, 2019). By 2017, women constituted 83% of direct cash recipients under PSSN, even though only 51% of beneficiary households were female-headed (Mihyo and Msami, 2018; World Bank, 2020). This mirrors a broader policy consensus that directing transfers to women improves children's nutrition, schooling, and health (Duflo, 2003; Akresh *et al.*, 2013), and can increase women's participation in household decisions (Lundberg *et al.*, 1997; Almås *et al.*, 2018). However, we lack knowledge about how these gender-targeted transfers are actually handled at the point of payment when programmes rely on mobile money rather than in-person cash distribution. Operational manuals and impact evaluations for PSSN describe the targeting rules, payment schedules, and conditionalities in detail, but do not report who actually receives the transfers in a mobile money account, or whether beneficiaries rely on intermediaries to access their funds (World Bank DIME and Tanzania Social Action Fund, 2023). To our knowledge, there are no administrative statistics on the use of proxies or nominees in routine social protection payments in Tanzania.

The shift to digital payment systems interacts with persistent gender gaps in access to, and use of, digital financial services. Using FinScope Tanzania 2017 data, Were *et al.* (2021) show that men are more likely than women to use mobile money (63% versus 50%) and that women lag behind men in mobile phone ownership and in active use of formal financial services. The same study reports

that women are less likely than men to save formally, to hold insurance, or to borrow from regulated providers. Subsequent analysis found a gender gap of 11 percentage points in mobile money account ownership and 9.4 percentage points in formal financial services (Were *et al.*, 2021; Mndolwa and Alhassan, 2020). These patterns are consistent with qualitative research that links women's lower use of digital financial services to handset costs, patchy network coverage, low levels of digital literacy, and fear of making mistakes when undertaking transactions (GSMA, 2023a). In short, mobile money infrastructure is widespread, but individual women's ability to use it remains restricted.

Household-level evidence points to similar gender gaps in financial control. A recent field experiment in Tanzania found that shifting women's microfinance repayments from cash to mobile money increased women's reported control over their finances and some dimensions of decision-making power, even though impacts on business outcomes were modest (Heath and Riley, 2024). At the same time, broader work on social protection and gender in Tanzania emphasises that intra-household control over resources remains strongly shaped by norms and divisions of labour (Myamba, 2020). A recent study documents systematic gender differences in perceptions of household decision-making: men are more likely to describe decisions as being taken jointly even when women report having limited say over income use (Owoputi *et al.*, 2024). Qualitative research around PSSN notes that men often see themselves as the ultimate financial managers, even when women are the named recipients of transfers, and that women may depend on husbands for travel to payment points and mobile money agents (Myamba, 2020). These facts suggest that who is targeted and registered as the recipient may not be the same as who has the power over the resources in practice.

In sum, for social protection policy, the key question is therefore not only whether cash transfers are targeted to women, but whether women can actually receive and use digital payments in their own accounts. Tanzania is scaling up digital payments in PSSN and related programmes, and other low-income countries are pursuing similar strategies (World Bank, 2025; Karlan *et al.*, 2016), yet there is very little systematic evidence on how households handle the point of payment when transfers are delivered into mobile money accounts: whether the targeted woman uses her own account, shares credentials, or asks someone else to receive the money for her. Existing PSSN programme documents track the targeted female recipient, but not the identity of the person who first receives the transfers in a mobile money account or the conditions under which women rely on intermediaries.

Our study fills this knowledge gap directly. Using administrative data from a randomised cash transfer programme in rural Tanzania that allowed beneficiaries to nominate another person to receive transfers on their behalf – and that records these nomination decisions – we provide the first systematic evidence on these nomination patterns and their gendered nature.

# 3 Methods and procedures

We use data from the UCT arms of the ‘Kizazi Kijacho’ multi-arm clustered RCT in Tanzania's Dodoma region, which evaluates parenting, UCT, and combined parenting-and-UCT interventions. The trial's complete design and broader research objectives are described in the pre-analysis plan and baseline report (Almás *et al.*, 2022; Almás *et al.*, 2023). Our analysis focuses specifically on households assigned to receive cash transfers without any accompanying parenting intervention, allowing us to cleanly study how targeting affects nomination behaviour when UCTs are delivered digitally.

**Study setting:** The study was conducted in Dodoma, a predominantly rural region in central Tanzania where agriculture remains the primary economic activity. Mobile phone ownership in our baseline sample stood at 60% for women and 91% for men. Only 64.8% of women had mobile money account ownership. This digital access gap between men and women, combined with the fact that many account holders share phones with other household members, creates conditions where the person designated to receive a digital transfer may not be the person who actually receives it in their own account.

**RCT design:** The complete Kizazi Kijacho trial targeted a representative sample of 3,585 pregnant women between 20 and 32 weeks of gestation across 387 communities across all eight district councils in Dodoma Region – Bahi, Chamwino, Chemba, Dodoma City Council, Kondoa District Council, Kondoa Town Council, Kongwa, and Mpwapwa – to receive an unconditional digital cash transfer. In this analysis of UCT nomination behaviour, we focus on two out of the five RCT study arms.<sup>3</sup> In the *UCT:Fixed arm* (760 households across 79 communities), households received bi-monthly transfers of Tanzania shillings (TZS) 109,000. In the *UCT:Vary arms* (479 households across 75 communities), households received varying bi-monthly transfer amounts of either TZS 32,000, TZS 77,000, or TZS 109,000. Across both arms, transfers were delivered over 15 months, from approximately six months of pregnancy through to the child's first birthday. Within the *UCT:Fixed* and *UCT:Vary* arms, households were randomly assigned at the community level to have either the mother or the father

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<sup>3</sup> The trial also included one control group (855 households in 80 communities), one *Parenting* arm (including 763 households in 77 communities) and one *Parenting+UCT* arm (including 728 households in 77 communities). We exclude the *Parenting+UCT* arm (728 households) from this analysis – despite the presence of cash transfers – for two reasons. First, all transfers in this arm targeted mothers exclusively, eliminating variation in targeting gender. Second, the parenting intervention began one to two months before nomination decisions were made, potentially influencing delegation choices. This restriction allows for the clean analysis of nomination behaviour without confounding from the parenting programme.

designated as the official transfer recipient, with half of households in each arm assigned to mother-targeting and half to father-targeting.

**Registration and nomination:** The implementation partner, Elizabeth Glaser Pediatric AIDS Foundation (EGPAF), conducted a multi-phase registration process to enrol target recipients and deliver transfers digitally. Registration began with phone-based mobilisation using contact information on the targeted individual collected during baseline surveys. During these personal calls, staff read standardised scripts that varied by recipient type. For mothers, the script was as follows:

*'Hello. We are from EGPAF and are partnering with Stockholm University to undertake a research study on pregnant women in your community. Since you were more than five months and less than eight months pregnant at the time of a recent survey completed by our research team, you will be receiving bi-monthly mobile money transfers of [selected UCT AMOUNT] TZS until your child is one year old. This transfer will be sent to you on the mobile number you would like. If you do not have a mobile phone where you can access the transferred amount, you can request the transfer to be delivered to someone else's phone, who you can trust to receive the transfer on your behalf.'*

For fathers, an analogous script explained that they would receive transfers because their partner or wife was pregnant at the time of the baseline survey, and similarly offered the option to have transfers sent to someone else's phone if needed. The scripts explicitly framed nomination as voluntary, stating that recipients could 'request' transfer to another person's phone if they preferred.

Registration could not be done remotely. Recipients who agreed to participate were required to attend designated venues – typically health facilities or community centres – to register in person. At registration, staff verified the targeted recipient's identity using a national ID card, obtained written informed consent, and confirmed or registered the mobile money account that would receive transfers. At this stage, targeted recipients made the nomination decision. If a recipient lacked a mobile phone or mobile money account, or chose not to receive transfers directly for any reason, they could nominate another person to receive transfers on their behalf. Staff recorded comprehensive information about nominees, including their name, relationship to the target recipient, phone number, and residence location. Nominees did not need to be physically present at registration – the targeted recipient provided all relevant nominee information and authorised the nomination through their signature. Only targeted recipients could sign consent forms and make nomination decisions.

When a targeted recipient nominated someone else, that nominee received mobile money transfers directly to their own mobile money account. The implementation protocol established that nominated funds were meant for the targeted recipient, with nominees expected to pass funds along, but the programme created no formal mechanism to enforce remittance. Nominees received a separate phone call from staff reading a script that explained as follows: '[Name of target beneficiary] is a beneficiary in our study and will be receiving bi-monthly mobile money transfers of [selected UCT amount] until [Name]'s child is one year old. [Name] has provided your number to receive this transfer. We sincerely hope that you can help us deliver the transfer to [Name].'

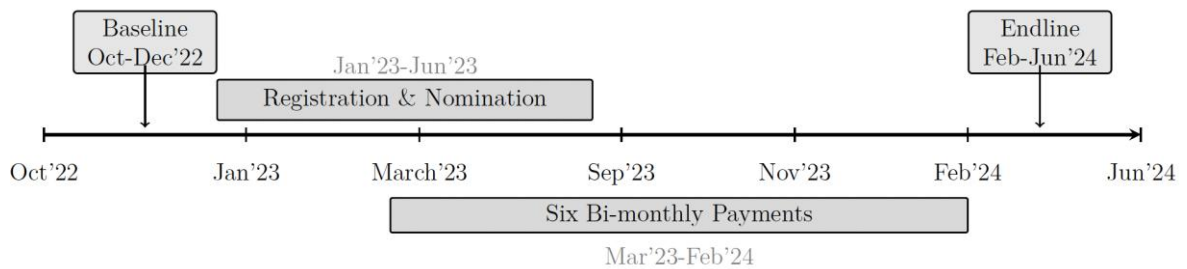
The script emphasised that the money was meant for the target recipient but that

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nominees controlled the mobile money account receiving the transfers. Transfer recipients could register complaints against nominated individuals in case of conflicts. EGPAF staff maintained a dedicated helpline to address these complaints and resolve any issues in future payment rounds.

Figure 1 presents the implementation timeline.

Figure 1: UCT Implementation Timeline



Notes: This figure illustrates the timeline of the UCT intervention within the Kizazi Kijacho study. Baseline surveys were conducted from October to December 2022. Registration and nomination of beneficiaries occurred from January 2023 to June 2023, during which targeted individuals chose whether to receive transfers on their own mobile money accounts or nominate someone else to receive them. Six bi-monthly payments were delivered from March 2023 to February 2024. Registration and payments were made in batches. Endline surveys were conducted from February to June 2024. The nomination decision was made at registration, before any transfers were received.

**Analytical sample:** For this analysis, we focus on the 1,239 households in the UCT:Fixed and UCT:Vary arms that received cash transfers. In four households, the mother was unavailable for the baseline survey, leaving us without baseline characteristics essential for the analysis. After excluding these households, our final analytical sample consists of 1,235 households. Among these households, 676 (54.7%) were assigned to mother-targeting and 559 (45.3%) to father-targeting. In mother-targeted households, the pregnant woman was named as the recipient of the transfers. In father-targeted households, the father of the target child was named as the recipient; when the father was not present in the household, the male household member or current household head was designated. 10% of the father-targeted households (493/508) were not fathers of the target women but were the male household member or current household head.

Table 1 presents the complete sample construction from initial targeting through to our final analytical sample. Registration occurred in four phases from December 2022 through to June 2023. Of the 1,235 targeted UCT households, 1,108 (89.7%) successfully completed registration. Registration rates differed modestly by targeting: 597 of 676 mother-targeted households (88%) completed registration compared to 511 of 559 father-targeted households (91.4%,  $p = 0.06$ ).<sup>4</sup>

Among the 127 households that did not complete registration, 76 (59.8%) could not be reached despite multiple contact attempts being made on different days and at different times. An additional 18 households (14.2%) were unavailable

<sup>4</sup> If women with lower levels of autonomy were less able to attend in-person registration, our estimates of the relationship between empowerment and nomination may be attenuated.

during the registration period due to travel or childbirth, while 15 households (11.8%) explicitly refused to participate. The remaining 18 households could not complete registration because they had moved from the village (12 households), were deceased (1 household), had severe communication disabilities (4 households), or could not be verified by village leaders (1 household).

Of the 1,108 households that completed registration, 1,101 (99.4%) received at least one transfer. Six bi-monthly payments were delivered from March 2023 through February 2024. The seven households that received no payments had permanently inactive or blocked mobile phone numbers that staff could not resolve. Staff conducted random verification calls to confirm receipt and maintained a hotline for complaints. We documented 23 formal complaints in which target recipients alleged that their nominee had failed to remit funds, leading to a change in registration to either a new nominee or their own account for money transfer after the date the complaint was made.

Table 1: Sample construction: UCT households by targeting gender

Sample stage	Target beneficiary			% of previous
	Father	Mother	Total	
<b>Panel A: Initial sample and registration</b>				
Households targeted for UCT	559	676	1235	–
Reasons for non-registration:				
Not reached	32	44	76	–
Unavailable during registration period	8	10	18	–
Refused to register	4	11	15	–
Moved from village	4	8	12	–
Deceased	0	1	1	–
Has disability/illness	0	4	4	–
Not known in village	0	1	1	–
Successfully registered	511	597	1108	89.7%
<b>Panel B: Payment receipt</b>				
Received at least one payment	508	593	1101	99.4%
Issue with payment (blocked/inactive number)	3	4	7	0.6%
<b>Panel C: Matched couples sample</b>				
Final analytical sample (target mothers)	508	593	1101	100.0%
Final analytical sample (matched couples)	426	479	905	82.2%

Notes: This table summarises the sample construction from initial targeting through to the final analytical sample. Panel A shows registration outcomes from the four-phase registration process (December 2022–June 2023). ‘Not reached’ indicates households that could not be contacted after multiple attempts on different days. Panel B shows payment receipt among successfully registered households. Panel C restricts to households where both the mother and the father completed baseline surveys, enabling within-household comparisons. Percentages in the rightmost column show retention relative to the previous stage. The final analytical sample of 905 households represents 73.3% of the initially targeted households and includes all cases with complete baseline data for both spouses who successfully registered and received payments.

**Data sources:** We combine baseline survey data with administrative programme records. EDI Global surveyed all 1,235 pregnant women and their spouses between October and December 2022, prior to UCT implementation. The survey measured household demographics, economic status, mobile phone and mobile

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money account ownership, digital transaction experience, intra-household decision-making, and social networks. Mothers and fathers were interviewed separately. EGPAF maintained complete administrative records throughout the programme, including registration records that capture our two primary outcomes: (i) whether the target beneficiary registered their own mobile money account or nominated someone else to receive transfers; and, if they decided to nominate someone else, (ii) who they nominated. For nominations, staff recorded the nominee's relationship to the beneficiary and their contact information. Payment records track all transfers including dates, amounts, recipient accounts, and beneficiary-reported complaints. These administrative data offer three advantages: nomination decisions were recorded at the time of choice (eliminating recall bias); nominee identities come from programme records rather than responses to potentially sensitive survey questions; and the linkage between randomly assigned target designation and revealed nomination choice provides the opportunity to cleanly investigate gender differences in financial delegation.

**Measurement:** Our primary outcome variables capture whether and who target recipients nominated to receive transfers. We construct three binary indicators from administrative records. First, 'Nominated Anyone' equals 1 if the target recipient nominated another person to receive transfers rather than using their own mobile money account, and 0 otherwise. Second, 'Nominated Spouse' equals 1 if the target recipient nominated their spouse or partner, and 0 otherwise. Third, 'Nominated Other' equals 1 if the nominee did not nominate the spouse but others (e.g. family members, friends, neighbours) and 0 otherwise. These measures capture both the extensive margin of delegation (whether to nominate) and the intensive margin (whom to nominate conditional on delegating).

We also suggest and use a latent digital empowerment factor using baseline survey data. Specifically, we estimate Bartlett factor scores from a set of indicators capturing digital access and capability: whether the participant i) owns a mobile phone, ii) has a mobile money account, iii) has ever conducted a mobile money transaction, iv) is the primary user of the mobile money account, v) prefers mobile money over cash, vi) has ever used a computer and the internet, and vii) feels comfortable using a mobile phone. We retain the first factor as our measure of digital empowerment.

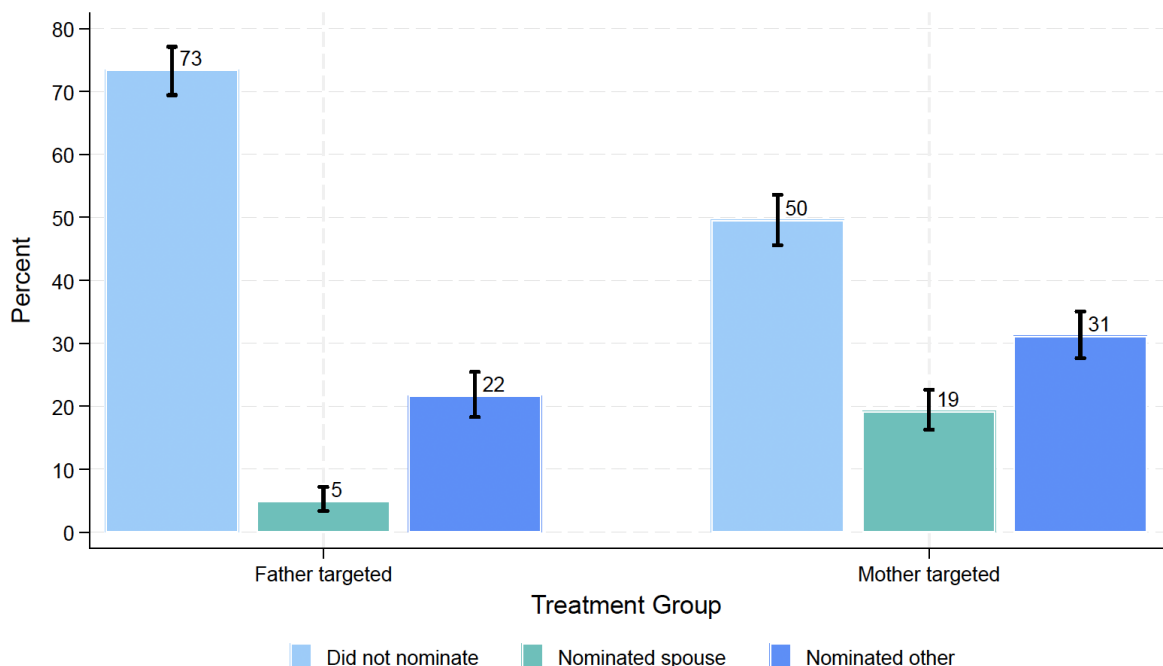
Beyond digital empowerment, we examine several standardised measures of women's autonomy and household circumstances as potential correlates of nomination. These include restrictions on independent mobility (whether the mother can go to the market alone or visit others in the neighbourhood), and measures of household decision-making power, social network characteristics, and demographic factors, such as age and education. We describe the construction of these measures in detail in the 'Results' section.

# 4 Results

## Who nominates, and whom do they nominate?

We begin by examining unadjusted differences between the treatment and control groups. Figure 2 and Figure 3 reveal stark asymmetries in nomination behaviour by gender. Among father-targeted households, 73% do not nominate anyone, while only 5% nominate their spouse and 22% nominate others outside the household. When we examine the subset of fathers who do nominate someone (Figure 3), nominations are concentrated heavily outside the household: 40% of fathers who nominate someone choose neighbours, 24% select siblings, and 7% nominate other relatives. Spousal nominations remain rare; among those who nominate someone, only 18% of father nominators select their wives. Mother-targeted households exhibit fundamentally different patterns. Figure 2 shows that 50% of mothers do not nominate someone, 19% nominate their spouse, and 31% nominate others outside the household. Figure 3 demonstrates that among mothers who nominate someone, the fact that roughly 40% nominate their spouses makes husbands the single most common recipient category. Neighbours remain important (28%) and siblings account for 11% of nominations.

Figure 2: Share of respondents who nominated someone else to receive the transfer



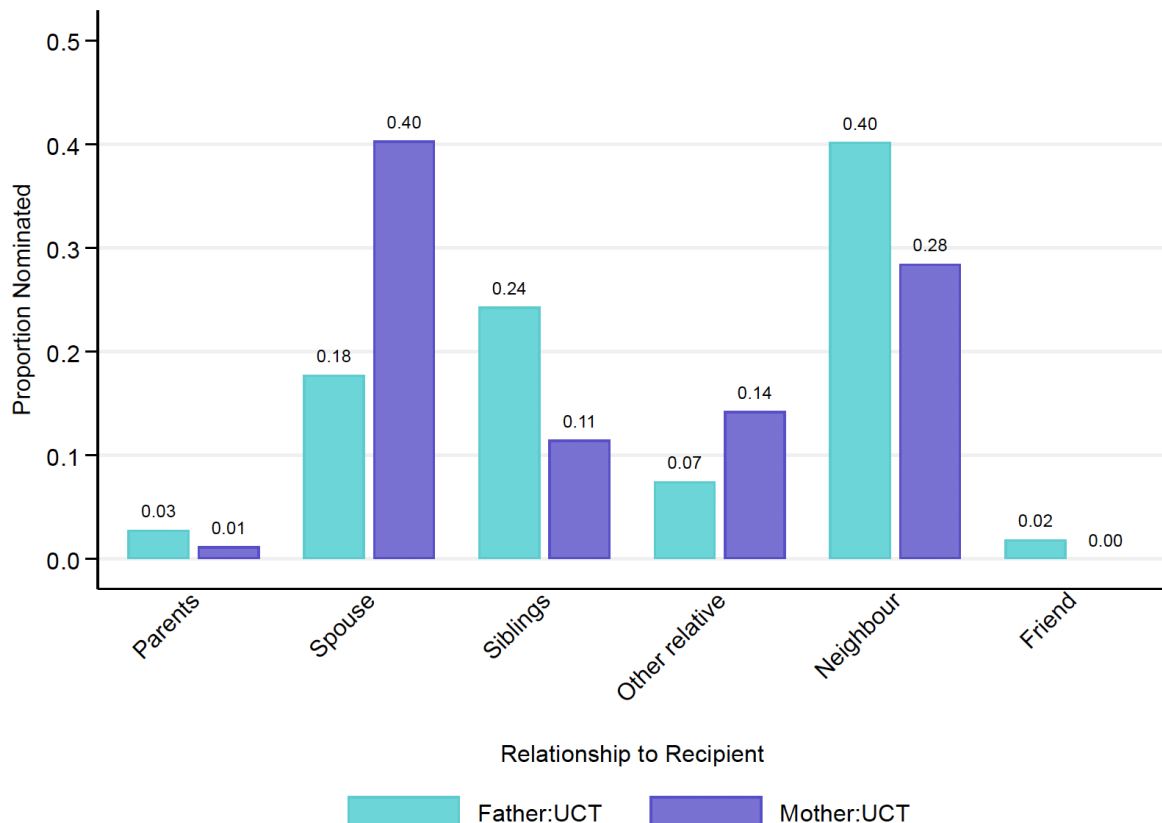
Notes: Sample restricted to registered UCT beneficiaries. Bars show percentage of respondents in each nomination category by targeting group. Error bars represent 95% confidence intervals. Statistical significance tested using two-sample t-tests with standard errors clustered at community level.

Mother-targeted households exhibit fundamentally different patterns. Figure 2 shows that 50% of mothers do not nominate someone, 19% nominate their spouse, and 31% nominate others outside the household. Figure 3 demonstrates that among mothers who nominate someone, the fact that roughly 40% nominate their spouses makes husbands the single most common recipient category. Neighbours remain important (28%) and siblings account for 11% of nominations.

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The dominance of spousal nominations reveals a qualitatively different process. Mothers who nominate, delegate control of transfers inward to their households rather than outward to their social networks. This inward delegation is consequential: in the mobile money system used here, the nominated individual receives the transfer directly into their own account, becoming the immediate controller of the funds. When mothers nominate their husbands, they effectively shift not just the transaction logistics but also the locus of financial control.

Figure 3: Relationship of the nominated person to target respondent



Notes: Sample restricted to registered UCT beneficiaries who nominated someone (N=434). Bars show proportion of nominees by relationship type for father-targeted (turquoise) and mother-targeted (purple) groups.

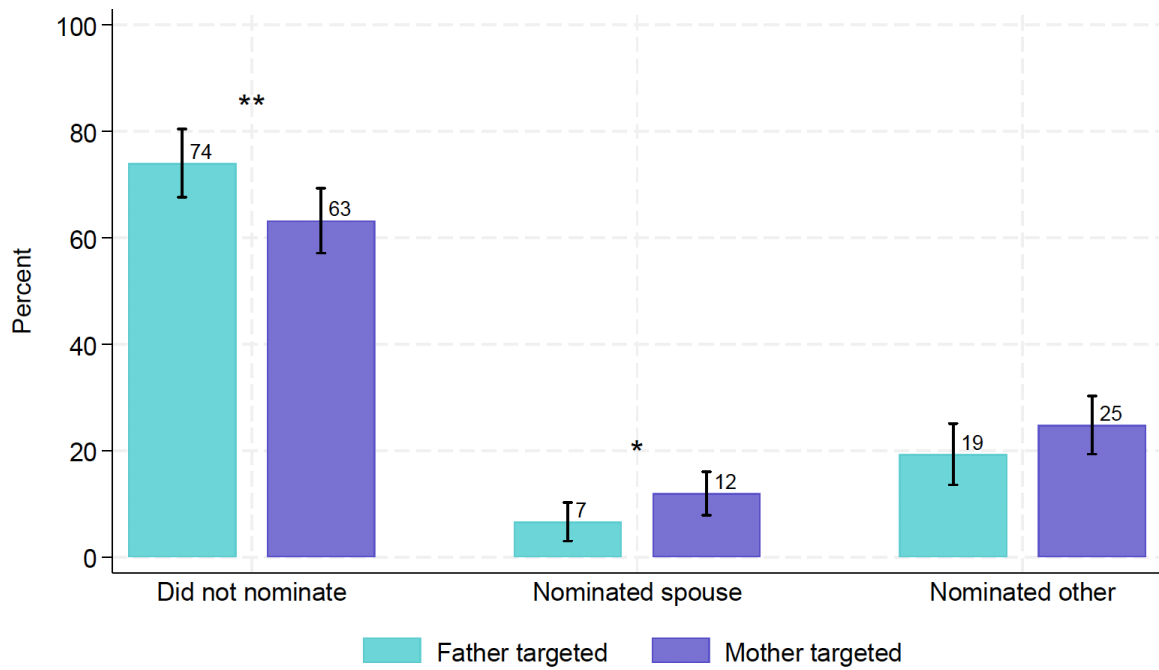
Figure 4 reinforces these gendered patterns by conditioning on mothers' digital access. Even when mothers own both a phone and mobile money account – circumstances that should eliminate purely logistical barriers – gendered nomination patterns persist. Among households where the mother has full digital access, targeting matters substantially: when mothers themselves are targeted, 63% do not nominate someone to receive the transfers, 12% nominate their spouse, and 25% nominate others. In contrast, when fathers are targeted but their wives have digital access, 74% of fathers do not nominate someone, only 7% nominate their spouse, and 19% nominate others.

The difference is statistically significant for both non-nomination ( $p < 0.05$ ) and spousal nomination ( $p < 0.10$ ). Despite mothers having full digital capability, they are significantly more likely to nominate someone (37%) compared to fathers (26%). Moreover, conditional on nominating someone, mothers are more likely to nominate their husbands: among those who nominate someone, approximately 32% of mothers nominate their spouse (12 out of 37), compared to approximately

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27% of fathers who nominate their wife (7 out of 26). This persistence of gendered nomination patterns even when mothers possess full digital capability points towards normative rather than purely practical determinants of nomination behaviour.<sup>5</sup>

Figure 4: Nomination behaviour when mother has phone and mobile money access



Notes: Sample restricted to households where the mother owns a phone and mobile money account (N=423). For the mother-targeted group, bars show nomination behaviour when the targeted mother has phone and mobile money access. For the father-targeted group, bars show nomination behaviour when the father's spouse has phone and mobile money access. Bars display percentage of respondents in each nomination category. Error bars represent 95% confidence intervals. Statistical significance tested using two-sample t-tests with standard errors clustered at the community level: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

## Characteristics of target mothers who nominate someone

We focus the analysis on mother-targeted households to understand what drives women's nomination decisions. The column headed '3-2' in

<sup>5</sup> Among women who have both mobile phone and mobile money account access and who nominate someone, 32% nominate their spouses, 32.7% nominate their family members or relatives, and 35.29% nominate their neighbours.

Table 2 compares the characteristics of mothers who keep transfers in their own accounts (column 2) against those who nominate others (column 3). For the sample that nominates someone,

Table 2 further distinguishes between mothers who nominate their spouses (column 4) and those who nominate others (5) – with the difference and its significance shown in the last column.

Table 2: Descriptive statistics for target mothers

	(1)	(2)	(3)	(4)	(5)	(3-2)	(4-5)
Variable	Overall	No nomination	Nominated someone	Nominated spouse	Other	Difference	
Age	27.45	28.21	26.70	26.66	26.72	-1.51***	-0.07
Education: Primary+	0.32	0.37	0.27	0.25	0.28	-0.10	-0.03
Comfortable with numbers	0.83	0.82	0.83	0.86	0.81	0.01	0.05
Comfortable with reading	0.78	0.77	0.80	0.82	0.78	0.02	0.03
Christian	0.66	0.69	0.64	0.54	0.69	-0.05	-0.15
Monogamous marriage	0.80	0.78	0.82	0.88	0.78	0.04	0.09
Ever employed	0.55	0.55	0.55	0.53	0.56	-0.00	-0.03
First pregnancy	0.18	0.15	0.20	0.15	0.23	0.05	-0.08***
Good physical health	0.21	0.21	0.21	0.16	0.24	-0.00	-0.08
Owns savings	0.33	0.29	0.36	0.34	0.38	0.07	-0.04
Owns mobile phone	0.62	0.72	0.51	0.49	0.52	-0.21***	-0.03
Has mobile money account	0.45	0.56	0.34	0.30	0.37	-0.22***	-0.07**
Has bank account	0.02	0.03	0.00	0.01	0.00	-0.02	0.01
Ever undertaken mobile money transaction	0.24	0.28	0.20	0.20	0.19	-0.08	0.01
Primary user of mobile phone	0.41	0.55	0.27	0.25	0.29	-0.28***	-0.05*
Prefers to receive money digitally	0.42	0.41	0.42	0.44	0.41	0.01	0.03
Distance from nearest mobile money agent (km)	0.81	0.64	0.98	0.80	1.09	0.34*	-0.30
Walks to the nearest mobile money agent	0.94	0.95	0.94	0.96	0.93	-0.00	0.04
Ever used computer	0.04	0.05	0.03	0.02	0.04	-0.02	-0.02
Ever used internet	0.08	0.09	0.08	0.09	0.07	-0.01	0.02
Depression (Z-score)	0.03	0.13	-0.06	-0.20	0.02	-0.19**	-0.23
Household decision-making (Z-score)	0.79	0.80	0.79	0.78	0.79	-0.02	-0.02
Financial rumination (Z-score)	0.04	0.04	0.04	0.03	0.04	-0.00	-0.00
Allowed to buy clothing for self	0.12	0.15	0.10	0.09	0.11	-0.05	-0.02
Not allowed to buy from market	0.16	0.12	0.19	0.26	0.15	0.07*	0.12**

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Not allowed to visit others in neighbourhood	0.13	0.11	0.16	0.18	0.15	0.05	0.03
Time spent on caregiving activities	0.30	0.30	0.29	0.29	0.30	-0.00	-0.00
Time spent working/studying	0.07	0.07	0.07	0.08	0.06	-0.01	0.01
Can count on neighbour for childcare	0.80	0.81	0.79	0.78	0.80	-0.02	-0.02
Mother Raven's (Z-score)	0.02	0.01	0.04	0.04	0.03	0.03	0.01
Household size	5.37	5.30	5.45	5.50	5.41	0.15	0.10
Total household consumption per capita (per TZS 1,000)	838.23	840.83	835.68	891.00	801.59	-5.15	89.41
Member of a social organisation	0.35	0.30	0.40	0.45	0.38	0.10	0.07
Has blood relatives in village	0.66	0.67	0.64	0.56	0.69	-0.03*	-0.13
# of close friends	1.77	1.90	1.63	1.63	1.63	-0.28**	0.00
# of days met people in public place in the past month	0.75	0.80	0.70	0.61	0.75	-0.11	-0.13
# of days others visited home in the past month	3.38	3.44	3.33	3.64	3.14	-0.10	0.50
# of days have visited others in the past month	2.75	2.91	2.59	2.80	2.45	-0.33	0.34
Could turn to someone for help	0.78	0.79	0.77	0.76	0.77	-0.02	-0.00
Could ask for childcare help	-0.84	0.15	-1.82	-1.25	-2.17	-1.97**	0.93
Could ask for financial help	0.80	0.81	0.78	0.74	0.81	-0.03	-0.07
# of people who asked for help from respondent	0.50	0.50	0.51	0.44	0.55	0.01	-0.11
Observations	593	294	299	114	185		

Notes: All values are percentages rounded to 1 decimal place. Continuous variables have been winsorised at 99%. Sample restricted to targeted mothers. Differences estimated using regressions with household fixed effects and standard errors clustered at the community level. \*\*\* p<0.01, \*\* p<0.05, \* p<0.10. Observations: N= 593.

Several patterns emerge. Mothers who nominate someone to receive the transfers are significantly younger than those who do not – averaging 26.7 years compared to 28.2 years for non-nominators ( $p < 0.01$ ). Younger women may face stronger normative pressures to defer financial management to their husbands. Education shows no significant differences: 32% of all targeted mothers completed secondary education or beyond, with no variation across nomination categories.

The strongest predictor of nomination is digital empowerment. Mothers who do not nominate someone are substantially more likely to own a mobile phone (72% versus 51%,  $p < 0.001$ ), hold a mobile money account (56% versus 34%,  $p < 0.001$ ), and report being the primary user of their phones (55% versus 27%,  $p < 0.001$ ). These differences persist when comparing spouse nominators to other nominators, though the gaps narrow: 49% of spouse nominators own a phone compared to 52% of other nominators. The critical distinction lies between those who can manage the transfers themselves and those who nominate someone to receive the transfers.

Overall, household decision-making measures reveal limited associations with nomination behaviour. The standardised household decision-making index shows no significant relationship with either the probability of nominating anyone or the choice of nominating a spouse (coefficients of -0.021 and 0.063 respectively, both statistically insignificant). Similarly, most individual autonomy indicators show no significant effects: whether mothers are allowed to buy clothing for themselves or visit others in the neighbourhood, or their time allocation to caregiving and work activities, bear no significant relationship to nomination decisions.

One notable exception emerges: mothers who are not allowed to buy from the market are significantly (24 percentage points) more likely to nominate their spouse conditional on nominating anyone ( $p < 0.01$ ). This restriction on market access may reflect broader constraints on mothers' independent financial transactions. Women who face barriers to autonomous market participation may view their husbands as necessary intermediaries for all financial activities, including receiving mobile money transfers. This pattern suggests that nomination of spouses among mothers reflects not general household decision-making dynamics but specific constraints on women's independent engagement with financial systems and market transactions.

Financial characteristics show limited differentiation. Ownership of savings accounts is slightly higher among nominators (36% versus 29%). Household consumption per capita shows no meaningful variation across groups.

Social network measures paint an interesting picture. Nominators report having fewer close friends (1.63 versus 1.90,  $p < 0.01$ ), yet they seem to be more likely to be members of social organisations, although this is less precisely estimated (40% versus 30%,  $p < 0.10$ ). They also report being less able to ask for childcare help from others (z-score of -1.82 versus 0.15,  $p < 0.01$ ). These patterns suggest that women who nominate someone to receive the transfers lack strong friendship networks but maintain formal group memberships.

The characteristics of spouses can be seen in

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Table 3, which reveals one notable pattern: husbands who are nominated by their wives to receive the transfers are significantly more likely to be comfortable with numbers (97%) compared to husbands whose wives nominate others (83%,  $p < 0.001$ ). This suggests that mothers may nominate their husbands because these men have better skills for managing mobile money transactions.

Table 3: Descriptive statistics of spouse of target mother

	(1)	(2)	(3)	(4)	(5)	(3-2)	(4-5)
Variable	Overall	No nomination	Nominated someone	Nominated spouse	Other	Difference	
Age	35.27	35.69	34.90	36.31	33.94	-0.79**	2.37
Education: Primary+	0.11	0.12	0.11	0.14	0.09	-0.02	0.05
Comfortable with numbers	0.89	0.88	0.89	0.97	0.83	0.00	0.14***
Comfortable with reading	0.85	0.83	0.87	0.97	0.80	0.04	0.17***
Christian	0.71	0.76	0.67	0.56	0.75	-0.08	-0.19
Monogamous marriage	0.88	0.88	0.88	0.90	0.87	-0.00	0.03
Formal/self-employment in past year	0.65	0.68	0.62	0.62	0.63	-0.05	-0.01
Good physical health	0.27	0.33	0.22	0.18	0.25	-0.11	-0.07
Owns mobile phone	0.90	0.92	0.89	0.94	0.86	-0.02	0.08
Used phone to make financial transactions	0.47	0.50	0.44	0.45	0.43	-0.06	0.02
Has bank account	0.07	0.08	0.06	0.09	0.05	-0.02	0.04
Ever used computer	0.07	0.07	0.07	0.10	0.05	0.00	0.05
Ever used internet	0.24	0.26	0.22	0.24	0.21	-0.04	0.03
Observations	479	226	253	102	151		

Notes: All values are percentages rounded to 1 decimal place. Sample restricted to spouses of targeted mothers. Differences estimated using regressions with household fixed effects and standard errors clustered at the community level. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ . Observations: N= 479.

## Predictors of nomination decisions

We now investigate adjusted differences conditional on baseline controls and other covariates. Table 4 presents regressions that control for all characteristics simultaneously, revealing which factors predict nomination behaviour among target mothers also when other observed – possibly confounding – factors are controlled for. Two findings stand out.

First, digital empowerment emerges as the strongest predictor of whether mothers nominate someone at all. A 1 standard deviation increase in digital empowerment reduces the probability of nomination by 12.4 percentage points ( $p < 0.001$ ). This effect persists after controlling for education, household decision-making, and social networks, confirming that technical capacity to manage mobile money accounts directly determines whether women can receive transfers themselves. Age also predicts nomination: each additional year reduces nomination probability by 1.4 percentage points ( $p < 0.001$ ). Notably, education, employment status, and household decision-making scores do not predict nomination behaviour once we account for digital empowerment and age.

Second, among mothers who nominate someone, lack of permission to buy from the market predicts nominating the spouse rather than someone else. Mothers who are not allowed to make market purchases are more likely to nominate their husbands (coefficient = 0.235,  $p < 0.001$ ). This pattern holds even after controlling for spouse characteristics, including numerical literacy.

Table 4: Target mother nomination decisions

	Nominated anyone	Nominated spouse
Age	-0.014*** (0.005)	-0.011 (0.008)
Christian	-0.108 (0.090)	-0.108 (0.148)
Education: Primary+	-0.086 (0.053)	-0.054 (0.092)
Monogamous marriage	0.117 (0.127)	0.024 (0.193)
Ever employed	0.029 (0.057)	0.068 (0.117)
First pregnancy	-0.126* (0.072)	-0.241* (0.122)
Good physical health	0.080 (0.059)	-0.139 (0.092)
Distance from nearest mobile money agent (km)	0.021 (0.020)	0.025 (0.025)
Walks to the nearest mobile money agent	0.107 (0.091)	0.132 (0.118)
Digital empowerment (Z-score)	-0.124*** (0.029)	-0.147*** (0.052)
Depression (Z-score)	-0.033	-0.034

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	(0.026)	(0.051)
Member of a social organisation	0.091**	0.120
	(0.046)	(0.084)
Has close friends (other than relatives) in village	-0.076	0.013
	(0.059)	(0.118)
Household decision-making (Z-score)	-0.021	0.063
	(0.064)	(0.098)
Financial rumination (Z-score)	0.035	0.005
	(0.024)	(0.038)
Allowed to buy clothing for self	-0.054	-0.068
	(0.074)	(0.143)
Not allowed to buy from market	0.102	0.235***
	(0.068)	(0.084)
Not allowed to visit others in neighbourhood	-0.047	-0.033
	(0.068)	(0.139)
Time spent on caregiving activities	-0.302	-0.331
	(0.248)	(0.496)
Time spent working/studying	0.002	-0.111
	(0.233)	(0.427)
Can count on neighbour for childcare	-0.016	0.016
	(0.053)	(0.102)
Mother Raven's (Z-score)	0.048*	-0.043
	(0.027)	(0.047)
Total household consumption per capita	-0.000	-0.000
	(0.000)	(0.000)
Constant	1.301***	-0.061
	(0.240)	(0.545)
Observations	479	253
R-squared	0.534	0.541

Notes: Health facility fixed effects and father controls included but not shown. Standard errors clustered at community level in parentheses. Column (1) shows nominated anyone. Column (2) shows nominated spouse conditional on nominating anyone. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Full specification includes all mother and father controls.

# 5 Discussion

This paper examines what happens at the point of payment when a programme targets women with digital cash transfers. In a system where transfers arrive through mobile money accounts but targeted individuals may nominate another person to receive the transfer, we document three patterns. A considerable share of targeted mothers nominate another person rather than receiving the transfer in their own account, while fathers rarely do so. When mothers nominate someone, they overwhelmingly choose their husbands. When fathers nominate someone, they primarily choose contacts outside the household. Women's digital access and mobility constraints are strongly associated with both whether they nominate someone and whom they nominate. This section situates these findings within the broader literature on intra-household allocation, gender-targeted transfers, and digital financial inclusion, and discusses what these patterns reveal about women's access to resources in digital transfer systems.

Programmes designed to empower women or target specific vulnerable populations often fail to deliver benefits to their intended recipients. Research across multiple contexts shows systematic gaps between programme design and implementation outcomes. In agricultural programmes, even when women are explicitly targeted for training or inputs, men frequently control technology adoption decisions or appropriate programme benefits, undermining gender equity objectives (Duflo, 2012). Conditional cash transfer schemes, even where they have sophisticated targeting mechanisms, exhibit substantial inclusion errors, with 20–50% of benefits reaching non-poor households in several Latin American contexts (Fiszbein *et al.*, 2009). India's Public Distribution System demonstrates even more severe leakage, with only 28% of subsidised grains actually reaching intended poor households (Das *et al.*, 2024). These studies typically attribute targeting failures to administrative capacity constraints, corruption, or elite capture. Our findings reveal a distinct mechanism operating in digital transfer systems: targeted women themselves choose to redirect transfers to their husbands through nominating them as recipients. Unlike traditional leakage through administrative failures, this occurs through beneficiaries' own revealed preferences, which are shaped by digital access constraints and mobility limitations. This suggests that digitisation alone cannot ensure that targeting women translates into women's control over resources, without addressing the underlying constraints that shape women's choices at the point of payment.

Digital empowerment plays a central role in determining whether women can receive and use digital transfers in their own accounts. Recent experimental evidence demonstrates the potential of mobile money to strengthen women's financial autonomy when they have direct access to accounts. In Tanzania, when women microfinance borrowers were randomly assigned to repay loans using mobile money rather than cash, they substantially increased their use of mobile money for other transactions, experienced greater control over their finances, and reported higher levels of household empowerment (Heath and Riley, 2024).

Similarly, research in Uganda shows that when microfinance loans are disbursed to digital accounts rather than as cash, female borrowers invest more in their businesses and experience higher profits, particularly among women who face pressure to share money within the household (Riley, 2024). These studies highlight that when women have their own digital accounts and use them actively, mobile money can serve as a tool for strengthening women's financial control.

Our findings confirm that digital empowerment is a strong predictor of whether targeted mothers receive transfers in their own accounts. Women who own a phone, hold a mobile money account, and can use them are far less likely to nominate anyone at all to receive transfers. This is consistent with the view that digital empowerment is a necessary condition for women to receive digital transfers directly in mobile money systems. Where women lack such access, nomination provides a mechanism to keep the household in the programme despite these barriers.

However, digital empowerment is not sufficient to eliminate gendered nomination patterns. Even among couples where mothers own both a phone and mobile money account, targeted mothers nominate someone more often than targeted fathers, and when they nominate someone, they disproportionately select their husbands. This suggests that some mothers rely on husbands for reasons that go beyond technical constraints, although our data cannot distinguish between convenience, perceived efficiency, trust in financial skills, and normative expectations about financial roles.

The relationship between nomination and agency could go both ways: women who have agency and live in a cooperative and collectively efficient household (Chiappori, 1992) could be more likely to nominate their spouse as they may benefit more from household resources even if it comes through the spouse. However, women without much power, who are not included in financial decision-making at all, may also be more likely to nominate their spouse as norms or a lack of power may make them unable to benefit from receiving money themselves.

In our setting, it seems that the latter is more prevalent: mothers who state that they cannot go to the market alone are more likely to nominate their husbands to receive the transfers, even after accounting for digital access, education, and spousal characteristics. This points to a channel that is narrower than 'general empowerment' but more directly linked to digital transactions. If a woman cannot travel independently to mobile money agents or cash-out points, transferring funds through her husband may be the only practical way to access them. This interpretation resonates with qualitative research on Tanzania's PSSN, which documents that women named as primary recipients often depend on husbands or male relatives to reach payment points and manage withdrawals, with men frequently positioning themselves as the main financial managers of transfer income (Myamba, 2020). Our quantitative evidence is consistent with these accounts but cannot definitively identify the underlying mechanisms. We observe nomination patterns and a limited set of correlates, but not the private negotiations or household-level expectations that shape these decisions.

These findings complicate the assumption that targeting women with digital transfers ensures that women receive and control the resources. In our setting, targeting women changes who is named as the recipient but does not guarantee that the transfer reaches the targeted woman.

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We emphasise that our analysis is descriptive and cannot determine final outcomes. Husbands who receive transfers may remit funds in full, couples may treat mobile money accounts as shared resources, or women may actively prefer that husbands manage certain transactions. It is equally possible that nomination reflects constrained choices in households where women face mobility barriers or lack the social legitimacy to manage external income. Our contribution is that we demonstrate the existence of this nomination margin and its systematic association with digital access and specific mobility constraints, without making strong claims about welfare implications.

This implementation margin has direct relevance for programme design. Allowing nomination expands coverage in settings where many targeted women do not own phones or mobile money accounts. In sub-Saharan Africa, mobile money has driven a rise in women's account ownership from 37% in 2017 to 49% in 2021, yet sizeable gender gaps remain. Women are still less likely than men to own mobile phones and less likely to use mobile money for savings or business transactions (GSMA, 2023b). Excluding women without digital access would conflict with the redistributive aims of social protection. At the same time, allowing nomination creates a channel through which transfers intended for women may be received by other household members, weakening the link between targeting and women's direct access to resources. The balance between coverage and control depends on the distribution of digital access, the ease of registering accounts, and the practical constraints women face in reaching mobile money agents and using digital services.

Our study has several limitations. We observe nomination at registration but not subsequent use of funds or informal arrangements within households. We do not observe whether transfers are remitted to the targeted woman, how spending decisions are made, or whether women share PIN codes or hand over phones after nominally receiving transfers themselves. Standard survey modules on decision-making may not capture norms specific to digital financial management. Furthermore, our results come from one region and one programme, and generalisation to other contexts with different levels of mobile money penetration, different cultural norms, or different programme designs remains an open question.

The broader literature offers limited guidance on the measurement challenges. While research has documented that mobile money can strengthen women's financial control when they actively use their own accounts (Riley, 2024; Heath and Riley, 2024), we know very little about how to measure financial empowerment in digital payment systems beyond account ownership. Standard survey modules on household decision-making may not capture practices specific to digital financial management, such as sharing phones, PIN codes, or informal arrangements around mobile money withdrawals (Aker and Mbiti, 2010). Schaner (2018) demonstrates that even formal account ownership may not reflect actual control when informal household arrangements intervene, but evidence on how these dynamics operate specifically in mobile money contexts remains scarce. Moreover, we do not know how financial empowerment in digital payment systems relates to household decision-making in other domains, such as mobility, healthcare choices, or children's education. Digital financial control

may operate differently from control over other household resources, but the relationship between these dimensions remains poorly understood.

These limitations point to productive directions for future research, some of which this research team plans to pursue. Linking administrative nomination records to detailed expenditure data will allow us to trace fund flows after initial receipt and assess whether nomination patterns affect final household allocations. Combining quantitative data with qualitative interviews on how couples decide whom to nominate will help clarify whether spousal nomination reflects cooperative specialisation, constrained choice, or normative compliance. Developing better measurement tools for digital financial empowerment – including questions about phone and PIN code sharing, mobile money withdrawal practices, and the relationship between digital financial control and decision-making in other household domains such as mobility or healthcare – will help provide us with a richer understanding of how women experience financial autonomy in digital payment systems. Experimental variation in access to phones, mobile money accounts, or digital training could in the future identify the causal effects of reducing digital empowerment barriers on nomination behaviour. Evidence from related interventions that increase women's private control over financial accounts, such as Field *et al.* (2021), suggests that strengthening women's control over financial instruments can shift labour supply and norms. Similar interventions in digital payment systems would help identify whether reducing digital friction changes nomination patterns and whether impacts on digital financial control spill over to other dimensions of household decision-making. Comparative evidence across different mobile money contexts would establish whether the patterns we document are specific to Tanzania or reflect broader dynamics in digital cash transfer systems.

In regard to policy, our findings highlight that monitoring systems that rely only on the identity of the nominal recipient may overstate the extent to which women actually receive digital transfers in their own accounts. Administrative data on account ownership, usage, and nominee relationships would allow programmes to track this gap more systematically. Interventions that expand women's digital capabilities – through subsidised handsets, simplified registration requirements, or hands-on training – are likely to reduce nomination and increase the probability that targeting translates into direct receipt, consistent with experimental evidence from Tanzania and Uganda showing that increased use of mobile money strengthens women's financial control (Riley, 2024). Programmes might also consider how to balance coverage and empowerment objectives, potentially by monitoring nominee relationships, providing information about women's right to receive transfers directly, or facilitating account registration at the point of enrolment.

## 6 Conclusion

This paper highlights a central tension in the digitisation of social protection: while digital transfers promise to deliver resources more efficiently and to empower women by targeting payments directly to them, these goals depend critically on women's ability to access and use digital financial tools, and their agency in this regard. We show that women with limited digital access are substantially more likely to nominate someone else to receive transfers, and thus less likely to directly receive the transfers intended for them. Among those who nominate someone, women with lower autonomy in the household are more likely to nominate their spouse. Thus, a programme intended to empower women through cash transfers may end up not reaching those that are arguably most in need of being empowered.

These findings suggest that digital delivery alone cannot substitute for broader investments in women's digital access and literacy. When women face structural barriers to phone ownership, account access, or digital confidence, programmes risk reinforcing, rather than reducing, existing inequalities by systematically excluding those who are least empowered. Strengthening digital inclusion – through improving handset access, easing account registration, offering training, and designing systems that account for women's constraints – is therefore essential if digital social protection is to advance gender equity objectives. More broadly, policy debates around 'sending money directly to women' must recognise that the point of payment is itself a site of inequality, and that successful empowerment requires both targeting women and enabling them to receive transfers in practice.

The fact that the least empowered and most marginalised are not directly reached is likely to be a more general challenge for social protection programmes and other policies that seek to alleviate poverty and empower marginalised groups. More generally, poor, marginalised, and disempowered groups may face more barriers to receiving support. We have discussed the lack of access to – and ability to operate – digital tools. Other potential barriers to receiving support for the poor include illiteracy, which means people are unable to understand their rights and instructions relating to receiving support; as well as language barriers for immigrant populations and indigenous people, and their agency in regard to speaking up for themselves. We believe that more research is needed to better understand how to reach those that are most in need. The fact that barriers exist may speak to the need for more holistic interventions. For cash transfer programmes, this may mean not only focusing on the cash but also on giving the targeted population the means to receive and benefit from transfers.

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# Appendix

Table 5: Nomination patterns among target respondents

Variable	Mother UCT mean	Father UCT mean	Difference (mother - father)	p-value
Reached/registered	0.883 (0.014)	0.914 (0.013)	-0.031* (0.016)	0.062
Issues in payment	0.007 (0.003)	0.006 (0.003)	0.001 (0.005)	0.883
Nominated anyone to receive UCT	0.504 (0.029)	0.266 (0.026)	0.240*** (0.029)	0.000
Nominated person lives in the same household	0.462 (0.033)	0.281 (0.041)	0.178*** (0.050)	0.001
Nominated spouse	0.381 (0.032)	0.185 (0.033)	0.209*** (0.041)	0.000
Nominated family member (other than spouse)	0.311 (0.033)	0.363 (0.044)	-0.080* (0.047)	0.093
Nominated friends/neighbours	0.619 (0.032)	0.815 (0.033)	-0.209*** (0.041)	0.000

Notes: Standard errors in parentheses beneath means/differences. Difference column shows mother UCT-father UCT. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Regressions include district fixed effects and cluster by community.

Table 6: Baseline balance on household characteristics

Variable	Mother UCT mean	Father UCT mean	Difference (mother-father)	p-value
Household size	4.472 (0.103)	4.472 (0.095)	0.020 (0.116)	0.861
Eligible for TASAF	0.086 (0.011)	0.087 (0.013)	0.001 (0.016)	0.960
Asset index	0.116 (0.173)	-0.033 (0.037)	0.159 (0.185)	0.391
Household adult equivalent unit	3.607 (0.082)	3.621 (0.078)	0.002 (0.095)	0.980
Owens land for dwelling	1.204 (0.019)	1.157 (0.018)	0.045** (0.020)	0.027
Owens agricultural land	0.668 (0.027)	0.719 (0.027)	-0.044 (0.028)	0.116
Owens non-agricultural land	0.185 (0.021)	0.185 (0.022)	0.002 (0.020)	0.913

Notes: Standard errors in parentheses beneath means/differences. Difference column shows mother UCT-father UCT. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Regressions include district fixed effects and cluster by community.



Table 8: Bivariate correlations with nominate spouse (target mother, if nominated any)

Age	0.005 (0.006)																								
sq_w_age	0.000 (0.000)																								
Christian	-0.155 (0.118)																								
Education: Primary+	-0.037 (0.084)																								
Monogamous marriage	0.043 (0.104)																								
Ever employed	-0.035 (0.092)																								
First pregnancy	-0.219** (0.103)																								
Good physical health	-0.117 (0.079)																								
Distance from nearest mobile money agent (km)	0.006 (0.021)																								
Walks to the nearest mobile money agent	0.206* (0.115)																								
Digital empowerment (Z-score)	-0.098** (0.041)																								
Depression (Z-score)	-0.042 (0.048)																								
Member of a social organisation	0.009 (0.080)																								
Has close friends (other than relatives) in village	-0.040 (0.085)																								
Household decision-making (Z-score)	-0.008 (0.092)																								
Financial Rumination (Z-score)	0.010 (0.039)																								
Allowed to buy clothing for self	-0.072 (0.141)																								
Not allowed to buy from market	0.191** (0.087)																								
Not allowed to visit others in neighbourhood	0.032 (0.107)																								
Time spent on caregiving activities	0.254 (0.400)																								
Time spent working/studying	-0.221 (0.432)																								
Can count on neighbour for childcare	0.050 (0.089)																								
Mother Raven's (Z-score)	-0.052 (0.045)																								
Total household consumption per capita	0.000 (0.000)																								
Observations	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253
R-squared	0.371	0.370	0.376	0.368	0.368	0.368	0.389	0.373	0.367	0.375	0.388	0.371	0.367	0.368	0.367	0.367	0.369	0.386	0.368	0.369	0.368	0.368	0.374	0.367	0.367

Notes: Each column shows results from a separate regression of nominate spouse on the row variable with household fixed effects. Sample restricted to those who nominated anyone. Standard errors clustered at community level in parentheses. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Table 9: Descriptive statistics for target father

	(1)	(2)	(3)	(4)	(5)	(3-2)	(4-5)
Variable	Overall	No nomination	Nominated someone	Nominated spouse	Other	Difference	
Age	35.20	35.13	35.42	41.68	33.80	0.30	7.88**
Education: Primary+	0.10	0.11	0.08	0.00	0.11	-0.02	-0.11
Comfortable with numbers	0.88	0.89	0.84	0.86	0.84	-0.05	0.03
Comfortable with reading	0.84	0.85	0.82	0.73	0.85	-0.03	-0.12*
Christian	0.72	0.74	0.66	0.59	0.68	-0.08	-0.09
Monogamous marriage	0.88	0.87	0.94	0.95	0.94	0.08***	0.01
Formal/self-employment in past year	0.67	0.68	0.63	0.64	0.62	-0.05	0.01
Good physical health	0.28	0.32	0.18	0.23	0.16	-0.14	0.06
Owns mobile phone	0.92	0.93	0.89	0.86	0.89	-0.04	-0.03
Has bank account	0.06	0.08	0.01	0.00	0.01	-0.07**	-0.01
Used phone to make financial transactions	0.47	0.48	0.43	0.62	0.39	-0.05	0.23*
Ever used computer	0.07	0.08	0.05	0.05	0.05	-0.03	-0.00
Ever used internet	0.24	0.27	0.15	0.20	0.14	-0.12	0.05
Total household consumption per capita	904.425	940.200	797.771	731.510	814.920	-1.42e+05	-834.102
Observations	426	319	107	22	85		

Notes: All values are percentages rounded to 1 decimal place. Sample restricted to targeted fathers. Differences estimated using regressions with household fixed effects and standard errors clustered at the community level. \*\*\* p<0.01, \*\* p<0.05, \* p<0.10. Observations: N= 426.

Table 10: Descriptive statistics of spouse of target father

	(1)	(2)	(3)	(4)	(5)	(3-2)	(4-5)
Variable	Overall	No nomination	Nominated someone	Nominated spouse	Other	Difference	
Age	27.00	26.75	27.72	31.84	26.78	0.97	5.06**
Education: Primary+	0.34	0.35	0.30	0.24	0.32	-0.05	-0.08
Comfortable with numbers	0.82	0.84	0.77	0.80	0.76	-0.07	0.04
Comfortable with reading	0.77	0.77	0.74	0.76	0.74	-0.03	0.02
Christian	0.71	0.72	0.67	0.56	0.70	-0.05	-0.14
Monogamous marriage	0.85	0.84	0.88	0.96	0.86	0.04	0.10
Ever employed	0.51	0.50	0.53	0.64	0.50	0.03	0.14
First pregnancy	0.18	0.20	0.12	0.00	0.15	-0.09*	-0.15
Good physical health	0.19	0.21	0.16	0.20	0.15	-0.05	0.05
Owns mobile phone	0.58	0.58	0.59	0.68	0.57	0.01	0.11
Has mobile money account	0.43	0.44	0.39	0.48	0.37	-0.05	0.11
Has bank account	0.02	0.03	0.01	0.00	0.01	-0.02	-0.01
Used mobile money account	0.85	0.91	0.70	0.68	0.71	-0.20	-0.03
Primary user of mobile phone	0.35	0.35	0.34	0.44	0.32	-0.01	0.12
Distance from nearest mobile money agent (km)	0.97	0.93	1.06	0.74	1.13	0.13	-0.39
Walks to the nearest mobile money agent	0.94	0.93	0.94	0.96	0.94	0.01	0.02
Ever used computer	0.04	0.05	0.01	0.00	0.02	-0.03*	-0.02
Ever used internet	0.08	0.11	0.02	0.00	0.03	-0.09***	-0.03
Depression (Z-score)	-0.04	0.02	-0.19	-0.09	-0.21	-0.20	0.12
Above median on household decision-making index	0.50	0.51	0.48	0.60	0.45	-0.03	0.15
Allowed to buy clothing for self	0.11	0.10	0.13	0.08	0.14	0.02	-0.06
Not allowed to buy from market	0.15	0.14	0.19	0.12	0.20	0.05	-0.08
Not allowed to visit others in neighbourhood	0.13	0.13	0.15	0.12	0.15	0.02	-0.03
Can count on neighbour for childcare	0.77	0.74	0.84	0.92	0.82	0.10	0.10**

Targeting meets constraints: Cash transfers, digital access, and women's empowerment

Total household consumption per capita (per TZS 1,000)	873.42	904.50	787.53	724.38	801.88	-116.98	-77.50
Household size	5.34	5.28	5.50	6.26	5.32	0.22	0.94
Member of a social organisation	0.38	0.37	0.42	0.56	0.39	0.05	0.17
Has blood relatives in village	0.68	0.68	0.70	0.68	0.70	0.02	-0.02
# of close friends	1.82	1.87	1.67	1.92	1.62	-0.20	0.30
# of days met people in public place in the past month	0.71	0.78	0.50	0.88	0.41	-0.29	0.47
# of days others visited home in the past month	3.18	3.20	3.14	3.76	3.00	-0.06	0.76
# of days have visited others in the past month	2.77	2.67	3.04	3.24	2.99	0.37	0.25
Could turn to someone for help	0.78	0.80	0.75	0.80	0.74	-0.05	0.06
Could ask for childcare help	-0.89	-1.08	-0.34	0.40	-0.51	0.74	0.91
Could ask for financial help	0.79	0.80	0.77	0.88	0.75	-0.03	0.13
Someone could ask for help from respondent	0.51	0.51	0.50	0.56	0.49	-0.00	0.07
Observations	508	373	135	25	110		

Notes: All values are percentages rounded to 1 decimal place. Sample restricted to spouses of targeted fathers. Differences estimated using regressions with household fixed effects and standard errors clustered at the community level. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ . Observations: N= 508.

# Thrive

Thrive is a multi-country research programme that aims to support countries to turn what we know about positive early childhood development into practical, scalable, low-cost programmes that are able to transform societies over multiple generations. Working closely with policymakers and other stakeholders, Thrive aims to build understanding of early childhood development service delivery models and how they can be provided cost effectively and at scale, and how these systems can innovate, improve, and better serve children and communities in low- and middle-income countries.

Our five focus countries are Bangladesh, Ghana, Kiribati, Sierra Leone, and Tanzania.

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