

Digital Humanitarian Payments to Vulnerable Afghans

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Introduction

Afghanistan's economy collapsed after the Taliban takeover in August 2021. Beforehand, foreign aid represented 75% of government spending and 40% of the country's GDP.² The remaining flows of assistance are almost exclusively humanitarian, and GDP likely contracted by 30-35% by the end of 2022.³ Humanitarians aim to avoid a "winter of famine"; the World Food Program estimates 18.9 million Afghans, about half the population, face acute food insecurity.⁴ The Afghan central bank's reserves remain frozen, requiring the U.S. and United Nations agencies to fly tens of millions of U.S. dollars into Kabul each week to support humanitarian operations.⁵

We evaluated an aid program by Uplift Afghanistan, a U.S.-based nonprofit, and its local partners to use digital transfers to address the humanitarian needs of highly vulnerable women. Beneficiaries were selected by the Community Driven Development Organization (CDDO), an Afghan NGO, working with local Community Development Councils (CDCs), non-governmental and democratically-elected participatory institutions established to manage local development projects. The CDDO and CDCs selected 2409 highly vulnerable Afghan women – mainly female heads of households – living in the cities of Kabul, Herat, and Mazar-i-Sharif.⁶ The CDDO and CDCs informed local authorities of their activities to ensure the safety of staff and beneficiaries, but did not allow external interference in the selection process. Engagement by local partners with strong community ties was thus essential for program operations.

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² [One Year in Review-Afghanistan since August 2021 | United Nations Development Programme](#).

³ [Afghanistan's Economy Faces Critical Challenges as it Adjusts to New Realities | World Bank](#).

⁴ [World Food Programme Afghanistan: Situation Report 13 October 2022](#).

⁵ [The Taliban Are Abusing Western Aid to Afghanistan | Foreign Policy Magazine December 2022](#).

⁶ Including pilot participants, a total of 2512 women received digital aid payments, each with an average household size of between 6-7 members, for approximately 15,000 total intended beneficiaries.

Next, the women set up accounts on HesabPay, a commercial digital payments platform.⁷ CDDO and HesabPay organized in-person onboarding sessions in groups of approximately 50 women.⁸ HesabPay staff used smartphones to record each woman's identity cards, register her phone number for payment SMS notifications, and issue a unique QR code for transactions.⁹ After registration, each woman received a 350 AFN transfer to ensure the HesabPay account was operational and then immediately conducted a test transaction with a local merchant. Along with efforts to ensure SMS notifications were easy to comprehend, these mobilization efforts helped address the specific needs of illiterate, innumerate and tech-constrained users.¹⁰

A randomly-assigned treatment group of 1208 women received four biweekly payments of 4000 AFN starting on November 6, 2022, while a control group with the remaining women started receiving these payments on January 1, 2023. The women received SMS notifications when a transfer was received, and then visited local merchants also registered on HesabPay to exchange the digital funds directly for essential goods. This approach contrasts with other digital aid programs that offer users a physical cash-out service by the platform's agents; while merchants themselves could cash-out from HesabPay, beneficiaries did not have this option.

We have four main results: first, **providing direct digital aid addresses humanitarian needs**. In monthly survey data, beneficiaries report fewer skipped meals and less reliance on bread and tea meals, among other improvements in meeting needs. Second, **local authorities do not tax digital aid beneficiaries**. Less than 2% of beneficiaries report that government authorities or community leaders asked them for any support. Third, **it is possible to deliver assistance without a cash out option**. Over 98% of total assistance is spent digitally with local purchases in the first eight weeks after launch. Fourth, **the costs of delivery for digital aid are highly competitive**. Including the costs of recruiting/onboarding beneficiaries, the cost of transferring a single dollar is 6 cents.

Design and Implementation

Piloting

Prior to starting the experiment with our sample of 2,409 women, we ran three small pilots (N<50) to i) refine our survey instruments, ii) work out logistical processes including how to enroll beneficiaries and iii) identify patterns that needed to be taken into account before the full scale up of the intervention.

⁷ Launched in 2019, HesabPay is owned by Moore Afghanistan and is regulated as a financial service provider by Afghanistan's central bank. HesabPay's technology operates using the Algorand blockchain.

⁸ Given movement restrictions, some women were accompanied to the onboarding sessions by male relatives, though only the women themselves were registered for HesabPay accounts. Smartphone users can self-enroll for HesabPay without the need for in-person id checks or QR codes.

⁹ Each woman needed a unique phone number to register for a HesabPay account, but this could belong to a family member. Given the high penetration rate of feature phones, this was not a constraint. Unlike mobile money services in Afghanistan, HesabPay is interoperable across all mobile network operators.

¹⁰ A third of women report having some education and only 1% report having a bank account before.

The first pilot was conducted with around 30 women in Kabul. The initial idea was to conduct the experiment without any face-to-face interaction. Thus, participants were contacted over the phone, invited to participate and instructed how to open HesabPay accounts. They received smaller payments than in the actual intervention (800 AFA instead of 4000 AFA). A second, similar pilot was conducted a few weeks after the first one. These two initial pilots were intended to evaluate the survey instruments and sort out the logistics for the eventual scale up. From these pilots, it became clear that participants were struggling to create HesabPay accounts and use their funds, as the vast majority of participants had never used mobile money services or apps similar to HesabPay, had never been part of the formal banking system and mostly had feature phones. While HesabPay can be used with a feature phone, the process of creating an account is more complicated than when having a smartphone.

Because of these pilots, we decided to organize in-person registration sessions with around 50 women each, where potential participants would be introduced to the program. Convened by CDDO, a team from HesabPay attended each registration session to help women open their accounts, explain how HesabPay works, and answer any questions the women might have regarding HesabPay. Importantly, during these registration sessions, participants would conduct a test purchase with a local merchant using HesabPay so that they could see how it worked, and were given a brochure with basic information about how to use HesabPay and the phone numbers of some local merchants that accept HesabPay as a payment method. With these steps, we expected familiarity with the app and thus usage, which had been low during our first two pilots, to increase.

All women identified by the CDDO were invited to these registration sessions. They were first asked for their consent to participate in the study and then completed the baseline survey and opened their HesabPay accounts. They were told that all of them would eventually receive the aid payments, with some of them receiving the payments earlier and some later. Randomization took place after all women completed the registration sessions, opened their HesabPay accounts and completed the baseline survey (as the baseline data are used for the stratification of the assignment).

We conducted a third, final pilot with 52 women in Kabul to test the logistics of the full scale up and revise the last versions of the survey instruments before conducting the registration sessions with the remaining participants.¹¹ This included conducting the in-person registration session and several rounds of phone follow-up surveys. This also helped us see whether there were going to be any problems with congregating women in a given place. We observed much higher rates of usage of the funds sent to women and no meaningful problems in this pilot. We also analyzed baseline and follow up data from this pilot of 52 women to assess the quality of our survey questions.

Sample Details

Our intervention took in three large cities of Afghanistan: Kabul, Herat and Mazar. We recruited 2,409 vulnerable women to participate in our study. Potential participants were recruited with the

¹¹ The full study aimed to recruit around 2400 participants because we had funding for 2500 beneficiaries but 52 were part of the last pilot. The women in this pilot are excluded from any analysis.

help of our local partner, Uplift, working with CDDO. The CDDO aimed to recruit 2,422 women. Due to some logistical problems, 2,409 could be matched to accounts in the digital payment platform.¹² Thus, our final evaluation sample has 2,409 women. This sample was randomized into an early group (“treatment”) that received the payments first and a late group (“control”) that received the payments after the early group. The groups were balanced based on multiple (pre-specified) baseline characteristics.

Survey Timing

Figure 1. Project’s Timeline (2022)

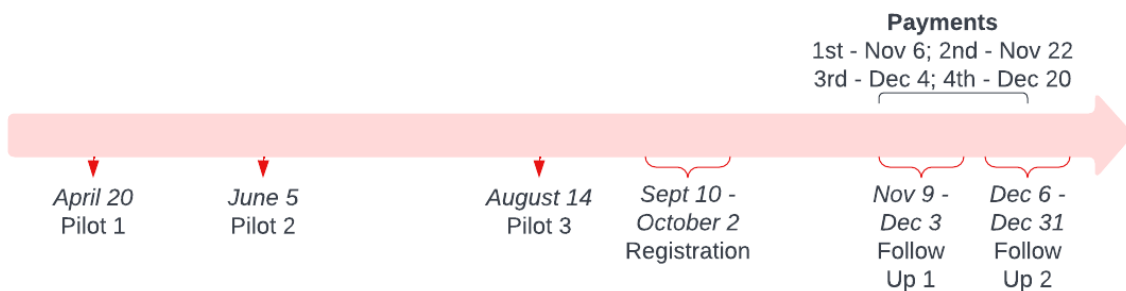


Figure 1 shows the project’s timeline. The three different pilots were conducted between April and August. The sessions to register beneficiaries started across Kabul, Herat and Balkh on September 10 and lasted until October 2. There was a delay between finishing the onboarding sessions and the start of the project as the data from the onboarding sessions had to be manually entered before randomizing participants into treatment (early payment) and control groups (late payment). On November 6, the first round of payments went out to the treatment group. The first round of follow-up data was collected between the first and the third payment (November 9 to December 3), while the second round was collected after the third payment and before the control group started receiving their payments (December 6 to December 31). All payments went out as scheduled on the Sunday every other week except for the second payment on November 22 that was delayed a couple of days due to logistical issues approving the transfer.

Analysis and Results

Account Usage

A distinguishing feature of this modality is that beneficiaries could not exchange their digital payment for cash. This reflects a design choice by the program team and not a technical requirement of the HesabPay system. A concern with restricting cash out is this limits the ability to convert the aid into purchases, particularly if few merchants accept digital payments. On average, 94% of beneficiaries debited their payments within a two week period, and this ranged from a low of 88.8%

¹² Some women could not be matched because 1) they completed the baseline survey but did not open an account or 2) they completed the baseline survey with a different phone number to the one used to open their account. While excluded from the analysis, all the women who were recruited but experienced problems received their payments with the late group, after solving their problems.

after the second payment to a high of 97.4% after the first payment. At the end of the eight week period, nearly 80% of beneficiaries had a zero balance remaining. Only three of the 1208 women (.25%) never redeemed any digital payments – all three cases appear to involve migrating to live elsewhere. Aggregating across all beneficiaries, over 98% of the total value transferred in the four payments was spent in the first eight weeks.¹³

Baseline Results

In terms of outcome variables, we were interested in analysing three different sets of outcomes. First, outcomes related to participants’ needs, mostly focused on nutritional outcomes and their ability to afford medicine. Second, outcomes related to informal taxation by local officials. Lastly, outcomes related to participants’ psychological and economic wellbeing. We pre-registered the analysis we planned to conduct before the start of the follow-up data collection. The Pre-Analysis Plan (PAP) can be found at the American Economic Association’s registry for randomized controlled trials (ID AEARCTR-0010189).

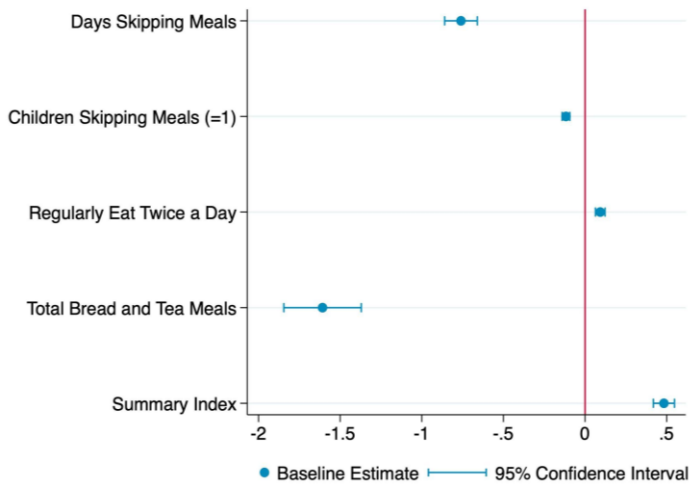
The analysis shown in this report comes from estimating the following linear regression

$$y_{itn} = \beta_0 + \beta_1 I[Early]_{in} + \beta_2 X_{i0n} + \beta_3 y_{i0n} + \beta_4 I[t = 2] + \varepsilon_{itn} \quad (1)$$

Where y_{itn} is the outcome of woman i in nahia n at time t . Note that t can be either 0 (baseline survey), 1 (first round of follow-up survey, after the treated have received 1 or 2 aid payments) or 2 (second round of follow-up survey, after the treated have received 3 or 4 aid payments). Thus, we are only using the first two months of intervention for all primary analyses, as those are the months in which we have clear experimental variation. X_{i0n} are the stratification variables (nahia fixed effects and baseline needs). $I[t = 2]$ is a dummy for the second survey round period (round fixed effect). The coefficient of interest is β_1 , which measures the causal effect of the intervention for those in the early group relative to those in the late group, after the early group starts receiving the aid payments. For variables for which we have values at baseline, we control for the baseline values y_{i0n} . Standard errors are clustered at the individual level.

Figure 2. Baseline Treatment Effects

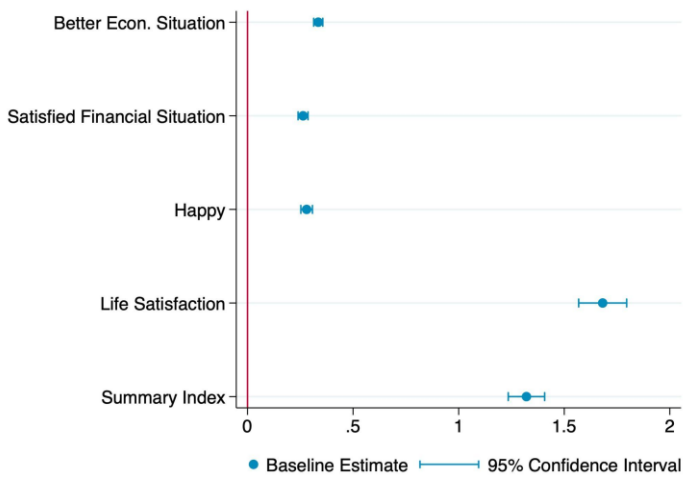
¹³ Recipients were not restricted to purchasing in this 8-week period and can spend funds at any time.



A) Nutritional Needs



B) Informal Taxation



C) Wellbeing

In Figure 2, we show the results from estimating Equation (1) for the pre-registered primary outcomes as pre-registered. Each row corresponds to the estimate of β_I from estimating Equation (1) for a different outcome variable. For each of the three families of outcomes, we also report the effects using a summary variable created following Anderson (2008).¹⁴

There are several takeaways from Figure 2. First, we find a consistent, sizable improvement in beneficiaries' ability to meet their basic needs. Looking at Panel A, the intervention led to a decrease in the number of days participants and their kids skip meals, allowing them to eat twice a day more

¹⁴ The index created following Anderson (2008) is the average of the standardized component variables, where the weight of each variable is proportional to the inverse of the variance covariance matrix of the standardized component variables. This way, highly correlated component variables are given relatively less weight, as they carry less "new" information.

regularly and decreasing the number of meals consisting of only bread and tea consumed in the previous week. We also find an improvement in participants' diets, with participants increasing their consumption of rice, beans, chicken and dairy significantly, and the likelihood of buying medicine (not reported here). When comparing the effects over time, the impacts become larger in the second month of surveying relative to the first one. Overall, while some needs still persist, the intervention had large and significant impacts in participants' nutrition.

A common concern when delivering aid in areas under the control of hostile regimes is that some of this aid will leak to the regimes, effectively reducing the amount of aid delivered and helping prop up these regimes. Panel B shows that leakage to government officials or community leaders is very rare and did not increase after the start of the payments, suggesting that the digital delivery of aid could be an effective channel to distribute aid. While self-reported taxation by these actors is low (only 24 treated participants reported some sort of taxation), there are concerns that participants might not accurately report this type of situation for fear of repercussions. However, there are several reasons to believe that this is not the case. First, when asked whether *others* in their communities have been asked for assistance (rather than the participant herself), the results are the same. Second, from the transaction data we know that over 85% of the aid was used at the test merchants the participants visited during their onboarding sessions. Third, qualitative surveys suggest that participants are not asked for any kind of assistance because they are too poor and government officials know this.

Finally, looking at Panel C, we also observe an improvement in participants' psychological and economic wellbeing. Treated women report large increases in the probability of saying that they are happy, in their self-assessed life satisfaction, are more likely to be satisfied with their financial situation and feel more optimistic about the economic situation. We do not observe increases in income, the probability of the head of the household being employed, or the participant's probability of being involved in the household's financial decision-making process, as we expected in our PAP. This is unsurprising given the latest developments in Afghanistan.

Experimenter Demand Effects

Our primary outcomes are self-reported survey data. Moreover, subjects cannot be blinded to their treatment status. As such, there is potential for experimenter demand effects (i.e. the participants answering what they believed we wanted to hear, not their true answers)

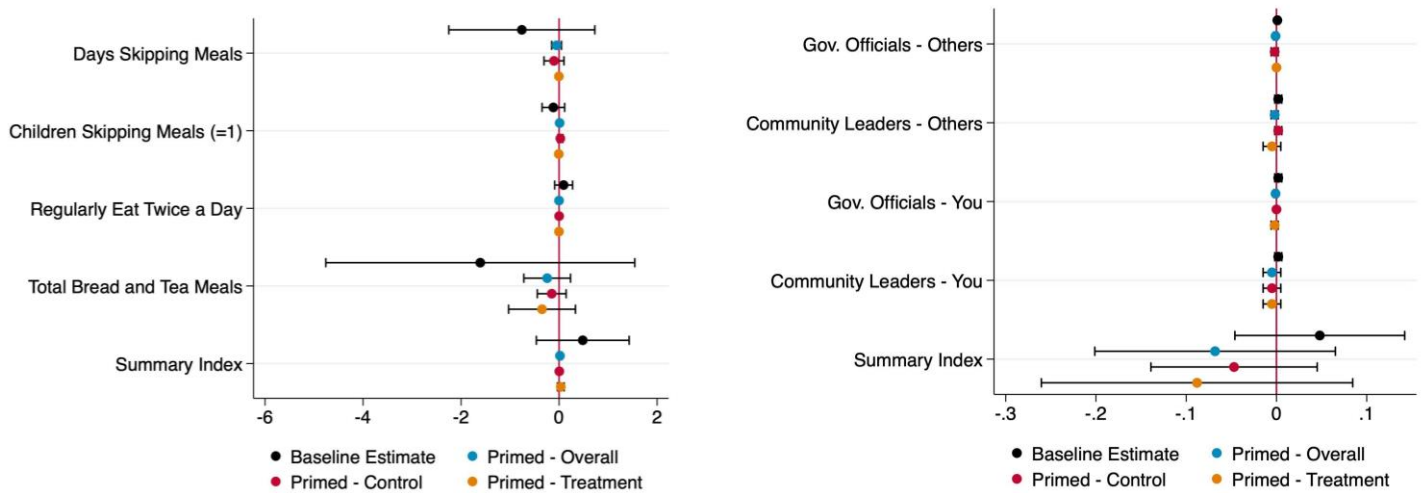
To assess whether this is a problem in this setting, in the last round of follow-up surveys ($t = 2$) we "primed" participants by telling them what we are expecting to find to see how that affects their responses. This exercise is similar in spirit to the work by de Quidt et al. (2018). More specifically, we randomly assigned individuals into two groups: a "primed" group hears the following statement just before the questions related to needs: "I would now like to ask you a few questions about how you and your family are doing. The goal of the CDDO and HesabPay program is to help you and your family meet basic needs, such as buying food, and we would like to see how you are doing in this regard. We will share what we learn from interviewing participants like yourself, with international organizations who are trying to help Afghans deal with these difficult times." Thus,

this group is explicitly told what we are expecting to find. The “not primed” group hears this placebo statement instead: “I would now like to ask you a few questions about how you and your family are doing.”

We tested whether i) primed individuals give different answers than not primed individuals and ii) whether individuals in the different treatment groups react differently to the “prime” intervention. To do this, we estimated regressions like Equation (1), adding a “prime” dummy only and a “prime” dummy interacted with the treatment dummy, respectively.

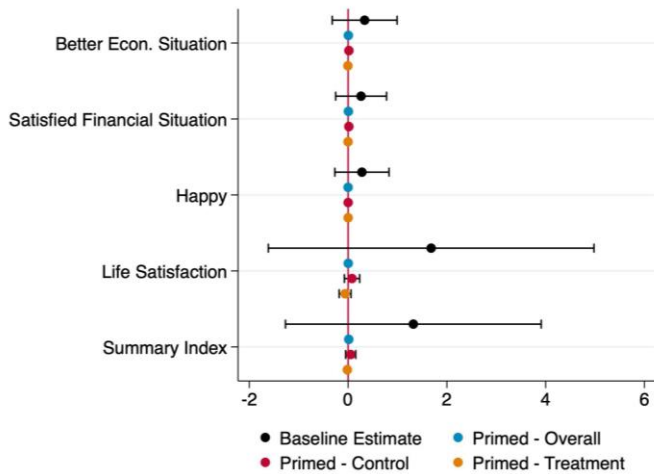
Figure 3 shows the different estimates. In black, the baseline estimates $\hat{\beta}_I$ from regression (1) are shown. The blue coefficients show the estimates of the overall effect of the “prime” intervention. The red coefficients show the estimates of the “prime” effect for the late group, and the orange coefficients show the estimates of the “prime” effect for the early group. There are two takeaways from these figures: i) the overall effect of the prime intervention is small in magnitude compared to the baseline results (black vs. blue) and mostly insignificant, suggesting that experimenter demand effects play a small role in this setting; ii) the same pattern holds broadly when analyzing the effects by treatment status in red and orange, with the effects insignificant and similar across treatment groups.

Figure 3. Experimenter Demand Effects



A) Nutritional Needs

B) Informal Taxation



C) Wellbeing

Costs of Delivering Aid

The cost of delivery for this direct aid approach is very low. To compute these estimates, each partner (HesabPay, Uplift, & CDDO) provided raw cost figures for their operations, which were refined to exclude fixed costs of operations and to identify the variable costs of providing direct humanitarian assistance. When including the one-time costs of recruiting/onboarding beneficiaries, the cost of transferring a single dollar is 6.0 cents (CTR), in turn making 212.00 dollars the total cost per beneficiary in the program.¹⁵ When excluding the costs of recruiting/onboarding activities by Uplift and CDDO, the cost of delivery is only 1.2 cents per dollar. Focusing only on the HesabPay mobile transfer platform, the total cost per beneficiary in the program is 202.47 dollars.

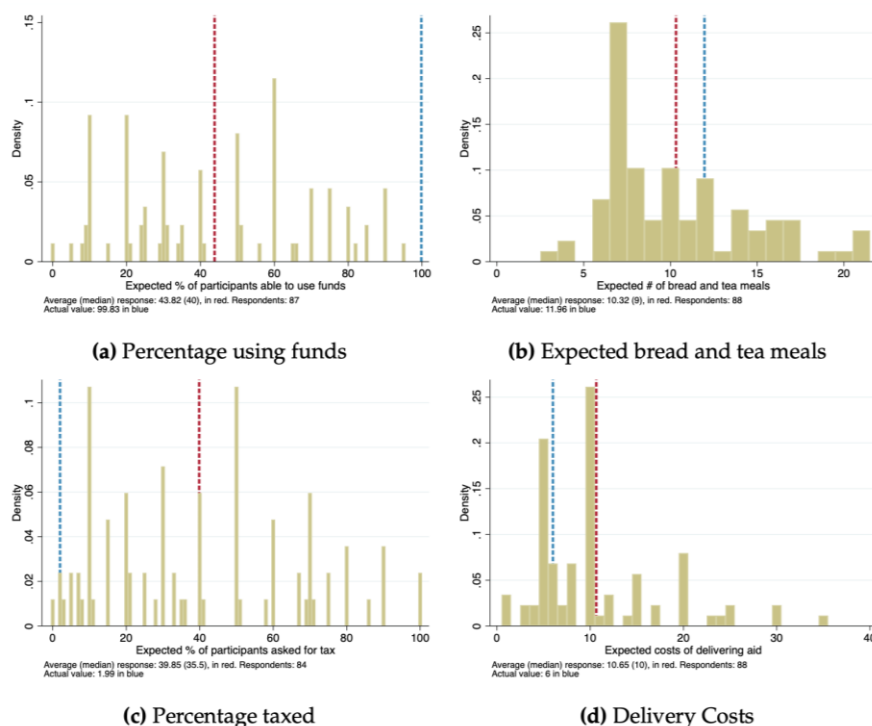
Expert Survey

Before completing the data collection, we conducted an expert survey of academics and practitioners in which we summarized this aid pilot program and asked them to predict the most likely outcomes. To do this, the Research Team and our implementation partners contacted their networks of academic and practitioners active in this area. Specifically, we focused on the four insights we believe are at the core of our project: the intervention's impact on basic needs, the leakage of funds to government officials/community leaders, the usage of the digital funds, and the cost of delivering these funds to an extremely vulnerable population. Overall, 91 academics and practitioners completed the survey.

¹⁵ Technically, these estimates are the cost-transfer-ratio (CTR), which is the ratio of administrative costs to transfer costs (6.0 cents) and the total-cost-transfer-ratio (TCTR), which is the ratio of the total program costs to that of the transfers (1.06 USD), and the cost-per-beneficiary (CPB) including the transfer value (212.00 USD), which is the total cost for a unit of output (a household). See White et al (2012) and Puett et al. (2018) for DFID guidance and an application to a cash transfer program.

Figure 2 shows the results of this exercise. Each panel shows, for each of the four different insights, i) the distribution of the experts' predictions (in yellow), ii) the average value of the experts' responses (in red), and iii) the actual value in our project (in blue). In terms of the percentage of participants expected to use their funds, experts predicted that, on average, only 44% would be able to use them. In reality, 99.75% of beneficiaries conducted at least one outgoing transaction in the 8-week period since receiving their first payment, a higher proportion than the most optimistic prediction. Panel B shows the responses for the predicted amount of bread and tea meals in the past seven days. While on average experts predicted 10.32 bread and tea meals, beneficiaries reported an average of 11.96 bread and tea meals since starting to receive payments. When focusing only on the second month of payments (when the previous week for all women is one where they have received funds), the values are much closer, with the total number of bread and tea meals at around 11. Panel C shows the results for the percentage of beneficiaries expected to be taxed in some way by community leaders/government officials. While on average experts predicted that 40% of beneficiaries would be informally taxed, in reality only 1.99% of beneficiaries reported being asked for any kind of assistance by government officials or community leaders, lower than the all but one predictions. Finally, Panel D shows the expected delivery costs of the program. While experts predicted that it would cost 10.65 cents to digitally transfer one dollar to a beneficiary on average, in reality the cost was 6 cents on the dollar.

Figure 4. Experts' Predictions vs. Actual Values



Implications of going to scale

Several considerations affect the potential efficacy of direct digital transfers as an at-scale modality for providing assistance. For reference, in October 2022, the World Food Program (WFP) disbursed 69,000 metric tons of food aid and \$23.7 million in cash transfers, serving 9 million beneficiaries with a split of 74% in-kind assistance and 26% cash transfers.¹⁶ If WFP channeled one-quarter of its monthly cash transfers via digital payments, this would entail a monthly outlay of over \$5.5 million and approximately 585,000 total beneficiaries. As the cost of delivery via digital aid is likely substantially lower than physical cash, this could substantially reduce facilitation costs and opportunities for diversion.

A major scale-up would necessarily entail potential challenges. First, pilot beneficiaries lived in urban settings where HesabPay's merchant acceptance network was robust; while the platform can function in peri-urban areas and smaller towns, this requires investment in expanding the acceptance network. If humanitarian agencies sought to identify new beneficiaries for this type of aid program, they might need to consider the role of local partners such as CDDO in assisting efforts to reach communities and facilitate targeting. Also, while digital aid payments do not require centralized distribution, illiterate and innumerate beneficiaries clearly benefited from an introductory training which included being accompanied through a test transaction with a merchant. This pilot involved onboarding sessions of around 50 women, but less visible methods, such as home visits or training over the phone, would potentially work.

It is important to note that this approach to delivering aid digitally relied on specific design choices that would also be important considerations to scaling up the program. First, HesabPay is an interoperable platform, meaning that it works across all five Afghan mobile telephone providers so does not require either beneficiaries or merchants to change SIM cards. Second, aid recipients were selected in geographies where HesabPay's merchant network was active and growing. This proximity ensured beneficiaries were able to exercise choice when deciding where to make their purchases; it also enabled the money to stay digital, thus reducing overall operational costs and creating a sustainable business case for merchant participation. Third, the inclusion of a test transaction during the onboarding process proved critical to giving the women the confidence to continue making purchases with their digital funds. Previous attempts to leverage mobile payments for aid delivery in Afghanistan failed to scale because of a lack of interoperability and a lack of investment in an acceptance network that delivered value to consumers and merchants alike.

How do the results of this trial compare with expert predictions?

To explore why digital aid payments are not widespread in challenging humanitarian contexts like Afghanistan, we conducted a survey of 91 academics and practitioners where we described this pilot program and asked them to predict the most likely outcomes. While this survey could not describe every detail of the digital aid project, the responses are still illuminating. Experts generally underpredicted the ability of beneficiaries to use digital funds and overpredicted the incidence of

¹⁶ [World Food Programme Afghanistan: Situation Report 13 October 2022.](#)

diversion or taxation of digital aid payments. Even if weakly held, such beliefs can support a risk aversion to adopting new aid approaches.

Conclusion

Direct digital financial transfers can support the basic needs of vulnerable Afghans while reducing the challenges associated with physical cash or commodity distribution. While building on the success of this pilot program could entail potential challenges, it offers an attractive complement to the current primary channels for humanitarian assistance.

As with any new technology, the successful adoption of digital aid payments requires focus on the human-centered design principles needed to ensure accessibility for vulnerable users and to the local network that can help identify, on-board and facilitate user transactions. While this pilot made noteworthy progress addressing both issues, they will require continued attention.

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