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Rethinking Delivery Modalities in Conflict-Affected Settings

Why Beneficiaries in Sudan Prefer Digital Transfers

Kibrom A. Abay, Hala Abushama, Shima Mohamed, and Khalid Siddig

Introduction

The recent surge in armed conflicts across Africa is increasing demand for humanitarian and social assistance, creating significant pressure on humanitarian actors to deliver life-saving support amid insecurity and constrained resources. The conflict that erupted in Sudan in April 2023 between the Sudanese Armed Forces (SAF) and the Rapid Support Forces (RSF) has resulted in the world's largest displacement crisis, triggering an acute and multidimensional humanitarian emergency requiring urgent and substantial international support. These armed conflicts in Africa are threatening important gains in poverty reduction made in the last few decades.¹

While armed conflicts and associated crises increase the need for assistance, they simultaneously undermine the capacity to deliver it. In conflict-affected settings, the operational environment is often marked by damaged infrastructure, disrupted markets, weakened institutions, and limited humanitarian access. These challenges hinder the effectiveness, targeting, and coverage of social protection and humanitarian aid programs (Ghorpade, 2017; 2020; Lind et al., 2022). Moreover, the proliferation of armed groups—including both state and non-state actors—can obstruct aid delivery or divert assistance, further

¹ Armed conflicts in Africa increasingly pose major obstacles to achieving the Sustainable Development Goals (SDGs), particularly SDG 2 (Zero Hunger), SDG 3 (Good Health and Well-Being), and SDG 16 (Peace, Justice, and Strong Institutions). The cumulative setbacks threaten hard-won development gains across the continent (Corral et al., 2020; World Bank, 2020).

limiting program reach and impact.² Compounding these challenges is a widening humanitarian financing gap, driven by escalating needs and declining donor contributions. In response, development and humanitarian actors are increasingly exploring cost-effective delivery mechanisms to improve efficiency, transparency, and reach of humanitarian aid to vulnerable populations. Among these, digital transfers, including mobile money, offer promising avenues for delivering assistance in fragile settings where conventional approaches may be impractical or insecure.

This brief draws on evidence from Sudan to assess the feasibility and demand for digital transfers in humanitarian response. It explores emerging practices and offers insights for policymakers, donors, and implementing agencies aiming to adapt assistance modalities to meet the challenges of protracted crises.

Surge in demand for digital transfers over cash or in-kind transfers

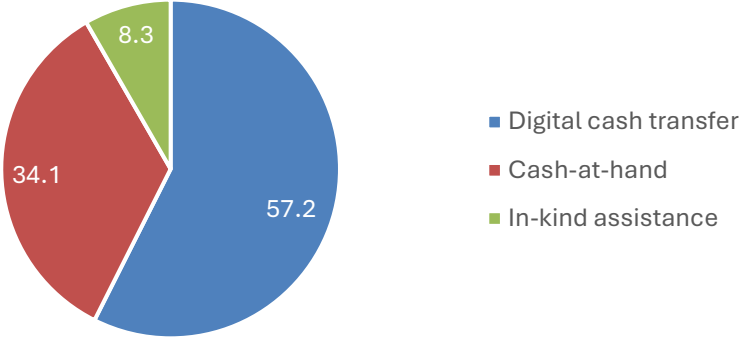
To better understand preferences for aid delivery modalities, this study examines the demand for digital transfers relative to traditional forms of assistance—namely in-kind support and direct cash disbursements. The analysis elicits the preferences of potential beneficiaries regarding how they would like to receive humanitarian and social assistance. The study focuses on urban households in Sudan, where ongoing armed conflict between the SAF and RSF has displaced millions and severely disrupted daily life. The findings are based on a forthcoming IFPRI book chapter.

As of 2025, more than 30 million people—over 60 percent of Sudan’s population of 47.5 million—require humanitarian assistance (UNOCHA, 2025). The conflict has devastated infrastructure, public services, and urban markets (Abushama et al., 2023; Kirui et al., 2023; Siddig et al., 2023; Guo et al., 2024; Ahmed et al., 2025). In such fluid and fragile environments, program designers often operate with incomplete or outdated data and infrastructure, while beneficiaries themselves hold private insights on local conditions, risks, and preferences. Capturing these preferences, including their preferences for transfer modality, is therefore critical to improving the effectiveness and efficiency of humanitarian assistance programs in conflict-affected settings.

We find that nearly two-thirds of potential beneficiaries express a preference for digital transfers, while the remaining one-third favor either cash-at-hand or in-kind assistance (Figure 1). This marked preference for digital transfer—even in settings with limited digital infrastructure—signals a significant shift in how assistance is perceived and valued by potential recipients. The growing appeal of digital transfers in conflict-affected urban areas suggests that beneficiaries are prioritizing attributes such as safety, flexibility, and ease of access. Moreover, this trend underscores the potential of digital delivery mechanisms to overcome key logistical and security challenges that typically constrain the distribution of physical cash or in-kind goods amid active conflicts (Figure 1).

² In active conflict settings, armed state and non-state actors often exert territorial control and may restrict humanitarian access or divert aid for strategic or political purposes. Cases of aid diversion by military groups have been documented across several African countries in recent years (Kurtzer, 2019; Devex, 2023; Igoe, 2023).

Figure 1: Overall preference for modality of transfer



Explaining demand for digital transfers in conflict-affected settings

Armed conflict and widespread insecurity create complex barriers to the delivery of humanitarian and social assistance. In active conflict zones, populations may become inaccessible due to territorial control by armed actors or the destruction of critical infrastructure such as roads, markets, and public services. These constraints make traditional aid modalities—such as in-kind or cash-at-hand transfers—logistically challenging and, in many cases, infeasible. As a result, digital transfers are emerging as a practical alternative, particularly when physical movement and direct engagement are restricted.

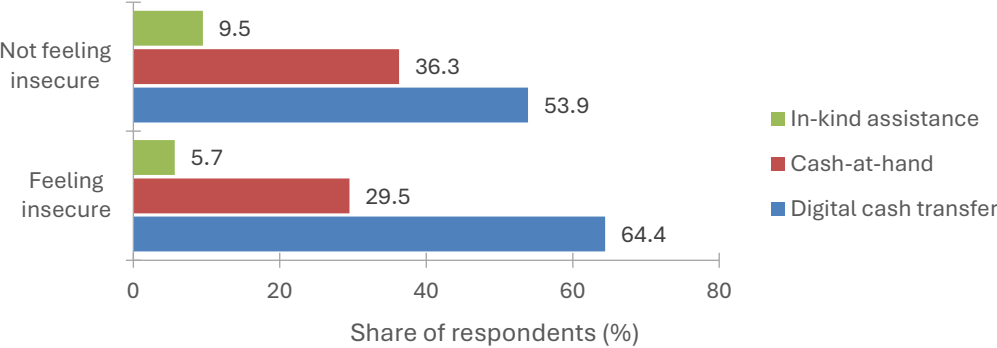
However, conflict also undermines the functioning of the very systems digital transfers rely on, including financial institutions, mobile networks, and regulatory frameworks. In Sudan, the ongoing conflict has significantly disrupted the banking sector and weakened regulatory capacity (Idris, 2024; Mercy Corps, 2023). Despite these systemic challenges, many potential beneficiaries continue to express a preference for digital transfers. This seemingly paradoxical trend highlights that demand for digital transfers is shaped not only by delivery feasibility but also by perceived safety and risk management.

Households in conflict-affected areas face an additional layer of risk: pervasive violence, asset destruction, and theft. In Sudan, widespread looting and vandalism have been well-documented (Kirui et al., 2023; Amin, 2023). In this context, beneficiaries may view physical forms of assistance—cash-at-hand or in-kind goods—as liabilities that increase their exposure to theft and violence. Digital transfers, by contrast, offer a form of assistance that can be received and managed with greater discretion and reduced physical risk.

To explore these dynamics, we analyzed respondents’ recent exposure to insecurity—including incidents of (i) street violence, theft, or robbery; (ii) armed conflict associated with the recent SAF-RSF conflict; and (iii) general insecurity associated with conflict. The findings reveal a clear pattern: respondents who report experiencing insecurity are significantly more likely to prefer digital transfers.

- ▶ Figure 2 shows that 64 percent of households who report feeling insecure prefer digital transfers, compared to 54 percent among those who do not report feeling insecure.
- ▶ Conversely, 6 percent of those who feel insecure prefer in-kind assistance, but the share among those who do not report feeling secure rises to nearly 10 percent.

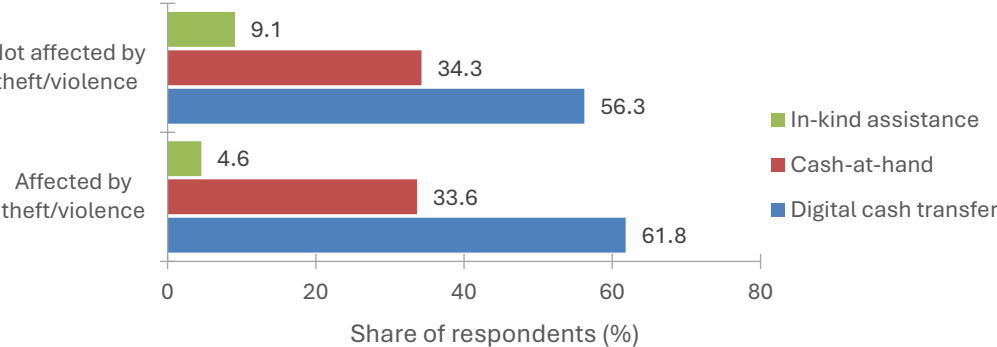
Figure 2: General insecurity and preference for transfer modalities



Likewise, Figure 3 demonstrates that exposure to theft or street violence is associated with a decline in preference for in-kind transfers: about 9 percent of respondents not affected by theft prefer in-kind assistance, compared to roughly 5 percent among those affected.

These findings underscore that preferences for digital transfers in conflict-affected environments are not solely driven by convenience or innovation but also by security considerations, perceived risks, and a rational assessment of delivery feasibility under extreme conditions.

Figure 3: Exposure to theft/violence and preference for transfer modality



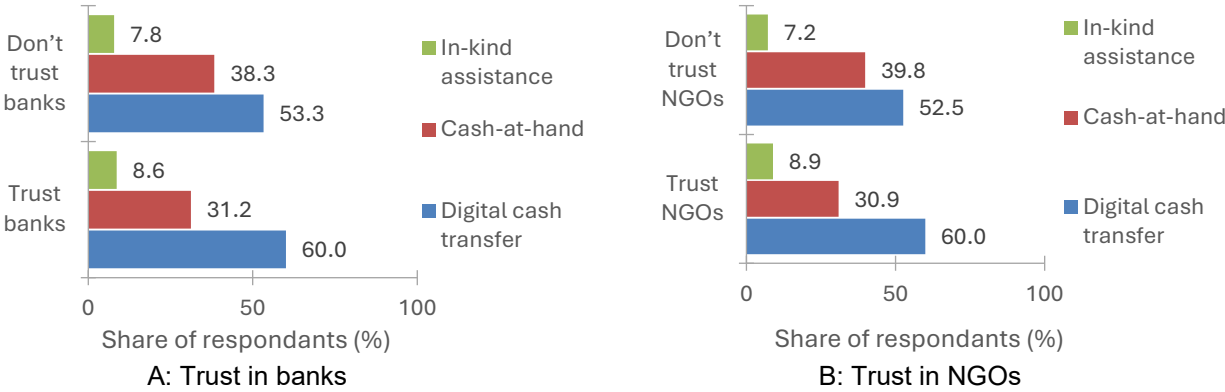
Trust in financial institutions and demand for digital transfers

Trust in financial institutions and implementing actors can shape beneficiaries’ preferences for digital transfers over cash-at-hand or in-kind assistance—especially in fragile settings like Sudan, where institutional trust remains generally low. Even in stable environments, trust in banks and other formal institutions is a key factor affecting individuals’ willingness to use financial services and their integration into the formal financial system (Guiso et al., 2004; Demirguç-Kunt et al., 2015; van der Crujisen et al., 2021).

Building on this literature, we assess whether respondents trust in financial and other local institutions explains their preference for digital transfer. We elicited respondents’ trust on financial institutions, mainly banks, community-based organizations (CBOs), and nongovernmental organizations (NGOs), who are usually active in delivering humanitarian services. As shown in Figure 4(A), 60 percent of respondents who report trusting banks prefer to receive assistance digitally. In contrast, individuals who express low trust in banks are more likely to prefer cash-at-hand, reflecting concerns about the security or reliability of digital financial systems.

Figure 4(B) extends this analysis to community-based organizations and NGOs. Respondents who report trust in NGOs similarly show greater willingness to receive assistance through digital channels. These patterns are consistent with evidence from more stable contexts, where mistrust in formal financial institutions is often associated with the preference to store savings in physical cash and operate outside of formal financial systems (Stix, 2013; Demirguç-Kunt et al., 2015; Shy, 2023).

Figure 4: Trust in banks and NGOs and preference for transfer modalities



These results underscore the importance of rebuilding trust in financial and intermediary institutions to support the adoption of digital transfers. Strengthening the perceived legitimacy, reliability, and accountability of actors involved in digital delivery can enhance uptake and effectiveness of digital transfer programs, especially in conflict-affected contexts where trust is low and financial ecosystems are fragile.

Closing remarks

This analysis reveals a clear preference for digital transfers among potential beneficiaries of social and humanitarian assistance, with approximately two-thirds favoring digital modalities over cash-at-hand or in-kind assistance. The preference for digital transfers is strongly associated with recent experiences of violence, theft, and general insecurity, underscoring how conflict-related risks shape household choices regarding how they wish to receive support. Moreover, trust in key institutions such as banks, community-based organizations, NGOs, and local government emerges as a significant predictor of demand for digital transfer. These findings have direct implications for designing effective and context-sensitive humanitarian interventions in conflict-affected settings like Sudan. Despite the operational challenges associated with digital transfers, particularly in environments with limited infrastructure and regulatory capacity, the preference for such modalities signal both urgency and opportunity. Beneficiaries' trust in digital mechanisms, even in fragile settings, suggests that with the right enabling conditions, digital transfers can become a critical tool for safe, efficient, and dignified assistance delivery. A recent evaluation in Afghanistan suggests that digital transfers lower delivery costs (Callen et al., 2025).³

Importantly, delivering social protection through digital channels may not only increase program reach and efficiency but also help reduce beneficiaries' exposure to theft and violence. Rebuilding trust in financial and local institutions will be essential to unlocking the full potential of digital ecosystems and strengthening the resilience of affected populations. These insights should guide humanitarian actors,

³ Callen et al. (2025) show that delivery costs associated with digital transfers are below 7 cents per dollar, which is much lower than the 17 cents per dollar cost associated with World Food Programme's cash-based transfers.

development partners, and donors in tailoring assistance strategies that align with the realities and preferences of those most in need.

ABOUT THE AUTHORS

Kibrom A. Abay is a Senior Research Fellow in the Development Strategies and Governance Unit, IFPRI, based in Washington, DC. **Hala Abushama** is a Research Analyst with the Development Strategies and Governance Unit, IFPRI, temporarily based in Cairo, Egypt. **Shima Mohamed** is a Research Analyst with the Development Strategies and Governance Unit, IFPRI, based temporarily in Saudi Arabia. **Khalid Siddig** is a Senior Research Fellow in the Development Strategies and Governance Unit and Program Leader for the Sudan Strategy Support Program, IFPRI, temporarily based in Nairobi, Kenya.

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1201 Eye Street, NW, Washington, DC 20005 USA | T. +1-202-862-5600 | F. +1-202-862-5606 | Email: ifpri@cgiar.org | www.ifpri.org | www.ifpri.info

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