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A framework to evaluate payment systems for cash transfer programmes: examples from Kenya[1]

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Cash transfers are increasingly being piloted and scaled up in sub-Saharan Africa, where current evidence suggests that they have positive impacts both as emergency and long-term social protection programmes. As with any programme, the operations of cash transfers strongly influence their impact, but analyses of cash transfers have paid much more attention to targeting than to payment systems. This briefing note argues that payment systems are important in terms of programme impact, provides a framework with which to analyse them, and considers three different payment systems from three cash transfer programmes evaluated between 2010-2013 by Oxford Policy Management (OPM) in Kenya.

The three programmes—which have now been either terminated or scaled-up—are:

- the **Hunger Safety Net Programme** (HSNP) pilot, which distributed cash for three years (2008-2012) using smartcards to 60,000 food-insecure households, operating in the drought- and conflict-prone north of the country—an area with low incomes, pastoralist livelihoods and very limited infrastructure (few roads, little or no mobile phone coverage or electricity, and extremely low levels of financial access). Cash is transferred electronically to the smartcard and can be redeemed at any time at participating shops (known as *dukas*) using fingerprint scanning;

- the **Cash Transfer Programme for Orphans and Vulnerable Children** (CT-OVC), which distributes cash on a permanent basis to households (30,000 in May 2009) containing orphans or vulnerable children (OVCs). In 2010, when the OPM evaluation was completed, cash was delivered to post offices, and recipients collected it at specified times; and

- the **Post-Election Violence Recovery** (PEVR) cash transfer programme, run by Concern Kenya between 2008 and 2009, which provided short-term cash transfers using mobile phone technology (known as M-PESA) to food-insecure households in rural and urban areas affected by violence after the 2007 election. Using M-PESA, money was transferred electronically to (or between) mobile phones and could be retained or redeemed at any time at registered M-PESA agents.

We suggest that payment systems could be analysed in terms of their implications for programming and for recipients, and compare the programmes using this framework.

Programme-level considerations

When designing a payment system, programme implementers have two main considerations to take into account: how to make the system meet programme objectives and how to make use of available delivery options at a reasonable cost.

- **Programme objectives** define the scope and required speed of the payment system. For example, emergency relief requires a flexible and reliable system that allows money to be transferred immediately and avoids unnecessary delays in providing relief support as well as burdensome 'start-up' costs.

- **Practical constraints and opportunities** determine available delivery options in a given context. Remote areas with no access to power, fixed or mobile telephone networks, or formal institutions such as post offices and banks, and with low liquidity may require the creation of *ad hoc* systems or the improvement of infrastructure (if programme scale permits). Highly serviced urban areas could take advantage of existing financial institutions and other money transfer arrangements (such as mobile phones).

Programme-level considerations for the three projects OPM evaluated in Kenya are presented in Table 1.

1. This Policy Research Brief is based on research performed before 2013; the programmes that were the subject of this study have since evolved.

TABLE 1
Programme-level considerations

Issue	Explanation	HSNP (smartcards)	CT-OVC (post offices)	PEVR (mobile phone technology)
Programme objectives	These define the scope and required speed of the payment system. For example, emergency relief requires a flexible system that allows money to be transferred immediately	Designed to reflect large scale and long duration, so could invest in innovative solutions and complex Management Information System (MIS)	Large scale and long duration, but operating in a context with better infrastructure than HSNP, so less need for innovation. Also invested in complex MIS	*Ad hoc*, short-term emergency programme, set up quickly with limited funding. Programme transferred varying amounts of money
Available delivery options and cost	Operating within existing infrastructure constraints (electricity, phone network, roads) or investing to change the infrastructural context	Overcame limited infrastructure by using *dukas*, investing in solar panels, point-of-sale devices, and smartcards with fingerprint technology (high cost)	Used existing post office network, which had reasonable coverage at low cost (areas covered not as remote as HSNP)	Most areas covered had access to electricity, mobile phone network and M-PESA agents, allowing delivery at relatively low cost

Beneficiary-level considerations

Payment systems affect the ease, cost and dignity with which recipients engage with programmes. Recipients' experience of payment systems is largely driven by whether the system uses a 'pull' or 'push' mechanism. 'Pull' mechanisms require recipients to report to a specified location at a specified date and time. 'Push' mechanisms make transfers to recipients, usually electronically, which can be collected at any time (Bankable Frontier Associates 2006, 2008; Devereux and Vincent 2010). In light of this distinction, Table 2 sets out some of these key issues, organised along four major themes: physical barriers, administrative barriers, financial barriers and issues of ownership.

TABLE 2
Beneficiary-level considerations

Issue	Explanation	HSNP (smartcards)	CT-OVC (post offices)	PEVR (mobile phone technology)
		Physical barriers		
Distance to the paypoint	Targeted households may live in remote and marginalised areas with little access to cheap transportation. Physical inaccessibility is particularly severe for those most vulnerable: people with disabilities, elderly people, mothers with children	Average walking time to the paypoint was 92 minutes. Considering the remoteness of these pastoralist areas, this is relatively low (thanks to usage of rural *duka* shops and solar panel technology)	The large network of post offices in OVC areas meant that walking distance was minimal (except in the remote district of Garissa where post offices are limited and walking could take a whole day)	Minimal due to network of 19,000 M-PESA agents. Some difficulty in rural areas
Congestion at the paypoint	When payments are made on the same date, recipients may be required to wait for their turn—possibly exposed to harsh weather conditions (heat) or without sustenance	Average waiting time was 79 minutes. Congestion reduced by implementing a sticker system (allocating beneficiaries to specific days), which reduced flexibility	Waiting time was also minimal, except for Garissa	Through M-PESA, money can be collected at any time and easily stored. This and the large network of agents helped to avoid queues
Security threats to recipients	Recipients can become targets for thieves, especially when information on payment dates is made publicly available	Respondents reported fear of security threats, but only one major attack was reported in the first year of implementation	Walking, waiting and public announcement of transfers generated security risks	Minimal security threats due to the secrecy allowed by M-PESA (no one knows when money is stored on the phone)

Issue	Explanation	HSNP (smartcards)	CT-OVC (post offices)	PEVR (mobile phone technology)
		Administrative barriers		
Need for national ID card	This requirement complicates access for households without ID cards, which are often among the poorest and most vulnerable	ID required by law (as smartcard allows value to be stored). To solve this, HSNP allows an alternate recipient, but this introduces potential difficulties with nominees	ID required by programme (part of a broader government drive to improve civil registration). OVC allows an alternate recipient, but same problem as HSNP	ID required by law (M-PESA stores value). Programme allows alternate recipient, but substantial difficulties with nominees as amount varies, so fraud is easier
Technological demands	More hi-tech solutions may make greater demands on recipients and the technology (break-down etc.)	Technological challenges overcome through large investments (solar panels, fingerprint-verified smartcards etc.). Few reports of technology not working	Limited use of technology	Solar phone chargers distributed in rural areas
Link between programme staff and recipients	Communication with programme staff allows them to: a) solve problems and complaints; b) spread awareness about the payment mechanism, including details of when/where/how to collect the transfer	Reliance on voluntary staff ('Rights Committees') for communication: limited recipient knowledge and ability to complain (though varying in different areas)	Reliance on voluntary staff for communication: limited recipient ability to complain	Typically implemented by community organisations: good community relations and communication
Predictability and flexibility of transfers	Balance between having predictable transfers and allowing recipients flexibility in when and how much they access	Trade-off: sticker system (collecting cash allowed on one day only) improved predictability but reduced flexibility. Also, theoretically cash could be stored on card, but did not happen in practice	Trade-off as post offices offered predictability but little flexibility: cash could only be collected in a two-week 'payment window' (accumulated if not collected)	Predictable and flexible. However, flexibility caused some challenges for recipients' understanding of the transfer
		Financial barriers		
Cost to beneficiary	Includes: a) transport to collect the transfer; b) accommodation; c) (un)official payments to agent/ alternate recipient/other; d) cost of acquiring documents etc. to access the system (national ID cards, mobile phones)	Average total cost of collecting transfer was Ksh12. About 1.5% of households paid a fee to the agent, and 4.5% to the person who collected the money. Low transport cost, as almost everyone walked (despite long distances)	High in Garissa district only, where transport and accommodation costs were up to 50% of the transfer. In response, a Ksh1,000 'top-up' was added to each payment in Garissa	Financial barriers were minimal, principally because M-PESA agents were easily available in urban areas (and rural areas were far less remote than in HSNP or CT-OVC)
		Psychological barriers		
Ownership	This includes: a) the degree of control recipients exercise over the collection of transfers; b) the secrecy with which they can collect transfers; c) the dignity afforded to them by different payment systems	Low secrecy: transfers have to be collected at specified times and places. Sticker system and alternate recipients reduced control, and store of value did not work as expected	The post office system exposed recipients to public scrutiny and required them to report at a particular time and place to collect payments	With M-PESA, transfers made directly and secretly to recipients, who could collect them when and where they chose (no exposure to stigma or abuse etc.)

Conclusion

No payment system is perfect, and programmers need to consider trade-offs between different objectives, such as the flexibility of when and how recipients can collect transfers, and the predictability of those transfers. If large investments in infrastructure can be made, there is the potential for payment systems to overcome many challenges and contribute to the extension of financial services or mobile networks, which have additional benefits. Flexibility and innovation in the choice of payment system is essential to take advantage of recent technological advances. The advantages and disadvantages of each of the three payment systems described (smartcards, post offices, M-PESA) are summarised in Table 3.

TABLE 3
Advantages and disadvantages of the three systems

System	Advantages	Disadvantages
Smartcard	Easy to use: no specific knowledge or know-how Technology is appropriate for local conditions in remote areas with no access to electricity or network coverage Designed to have flexible collection points and amounts paid to recipients (however, not true in pilot) Allows for the provision of a predictable transfer, aiding households in their monthly budgeting Fundamental step in providing financial services to previously excluded sections of the population	Requires large initial set-up costs that may be prohibitive for a short-term relief programme Risk of technological failure, including possible problems linked to the fingerprint verification system Smartcards can quite easily be lost or damaged, and may take time to replace The use of the network of *duka* agents did not overcome a significant problem of illiquidity in northern Kenya The requirement of smartcard owners to have national ID cards increases the risk of exploitation by nominees
Post office	Minimal investment in developing infrastructure and administering training is required The use of post offices to disburse cash transfers may have positive implications for the programme's sustainability in the long term Allows for the provision of a predictable transfer, aiding households in their monthly budgeting No technology involved, so no risk of technological failure	Coverage of the post office network may not be adequate across all programme areas, leading to significant barriers to access, as is the case in Garissa district As the programme grows, queues and congestion are inevitable unless a more complex and flexible system of 'payment windows' is set up The use of a post office, a public space, to disburse cash can lead to the explicit identification of programme recipients, with serious implications for safety and security as well as stigma within a community
M-PESA	Rapid strategy to get money to individuals (ideal for emergency relief) The flexibility of the system and the wide availability of M-PESA agents (there are currently over 19,000 in Kenya) means that individuals are free to collect their money when and where they wish without having to travel long distances Higher security and secrecy Possibility to store money safely Transfers are indexed to local market prices (to counteract inflation)	Programme can only be rolled out in areas with electricity, phone network and frequent M-PESA agents (not ideal for rural areas) Pilot phase had to distribute phones to over 60% of households and solar chargers to those without electricity, leading to high set-up costs Transfer fees can be as high as 55% depending on amount transferred MPESA may be difficult to use by illiterate households, especially as varying amounts increase confusion The requirement of smartcard owners to have national ID cards increases the risk of exploitation by nominees

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