Chapter 8: Don’t Waste Recipients’ Time: How to Save and Give Time in Cash Transfer Programs

Colin West and Ashley Whillans

While poverty alleviation programs provide critical goods, services, and resources, they often simultaneously impose burdensome time-costs on their recipients. For instance, many cash transfer programs require people to travel long distances, wait in lines, and fill-out complex paperwork. Using the cash often requires further time and effort due to restrictions designed to prevent misappropriation. And to maintain eligibility, people must undergo frequent, onerous means-testing and renewal processes. As a result, many cash transfer programs provide one resource at the expense of another: recipients’ time.

A critical, overlooked benefit of cash transfers, relative to other forms of economic assistance, is that they can be provided without imposing significant time-costs. Innovations in financial technology have made it possible to provide cash transfers to even the poorest and most remote recipients with minimal time-costs. However, cash transfer programs must be carefully designed in order to realize these time-saving benefits. In this chapter, we analyze the role of time in cash transfer programs. First, we examine how cash transfers programs can be designed, implemented, and evaluated to maximize the time-saving benefits for recipients. Second, we propose a new model for poverty alleviation programs that involves combining cash transfers and time transfers.

Time Constraints are Ignored in Economic Aid Allocation Decisions

Cash transfers have the potential to be save recipients a substantial amount of time relative to other forms of economic assistance.¹ In-kind aid programs – providing goods such as food, livestock, fertilizer, and services like job training – are still the most common forms of economic assistance in developing countries, and they usually impose large time-costs on
their recipients. Yet, these time-costs are rarely considered when selecting and designing poverty alleviation programs. Rather, policymakers focus on programs that provide a compelling and empathetic narrative, partly because they are well aware that voters, donors, and lobbyists are unmoved by appeals to cost-efficiency and time-efficiency. Indeed, decades of research have shown that charitable giving is motivated more by stories that provoke our empathy, than by evidence on impact.

Furthermore, there is a widespread assumption that people living in material poverty have an abundance of time. So, policymakers are rarely concerned about imposing time-costs on recipients of economic aid, for instance during means-testing and in how aid is disbursed. As a result, many poverty alleviation programs impose large time-costs on their recipients and few programs invest substantial resources to save time for their recipients. Spending money just to save recipients time or to make aid disbursement more convenient is viewed as a frivolous waste of charitable or taxpayer dollars. However, these attitudes are based on inaccurate assumptions – time-use survey data shows that people living in poverty usually do not have an abundance of time. Rather, financial poverty and time poverty often coincide, especially for working women in developing countries. For instance, working women in Kibera, an urban informal settlement in Nairobi, earn an average of $14 USD per week while doing 44 hours of paid labor and 41 hours of unpaid labor.

Policymakers should be aware of the time constraints facing their constituents and account for these constraints in how they design economic aid programs. This begins with measuring the time-costs that policymakers themselves are imposing on recipients of economic aid, and then making specific changes and investments to reduce these time burdens. We argue that the extent to which a poverty alleviation program costs or saves recipients time will have a significant on its ultimate impact.
In this chapter, we review how time-costs accumulate in the ways that cash transfer programs (1) target, means-test, and enroll recipients, (2) disburse cash, and (3) evaluate their impact. Furthermore, we propose changes to the design of cash transfer programs to reduce time-costs and maximize their potential to save time for people living in poverty.

**Time-costs in Targeting and Means-testing Cash Transfer Programs**

Who should receive economic assistance, and who should be excluded? This is a fundamental question facing cash transfer programs, and it often provokes strong reactions to any perceived unfairness. Indeed, policymakers, voters, and donors will frequently reject programs that would produce greater benefits for all stakeholders out of a concern for fairness. This has led to an intense focus on targeting in the design of cash transfer programs. *Targeting* is defined as the process of determining which individuals are eligible for a given economic assistance program, how these individuals will be identified, and how they will be enrolled. Cash transfers programs usually target recipients using one of five methods: 1) formal income data targeting, 2) categorical targeting, 3) proxy-means testing, 4) community-based targeting, or 5) self-targeting (i.e., ‘ordeal targeting’).
### Table 8.1 Time-costs in each targeting method

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<th>Targeting method</th>
<th>Pros</th>
<th>Cons</th>
<th>Time-costs</th>
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<td><strong>Income data targeting</strong>&lt;br&gt;Eligibility is determined using formal income data from taxes or bank accounts. This is the most common targeting method in advanced economies</td>
<td>This is a straightforward method that measures income directly. It is transparent and usually quite accurate.</td>
<td>This method does not account for monthly income fluctuations, which are becoming increasingly common. Recipients can be excluded if they experience temporary income spikes.</td>
<td>Recipients usually undergo frequent, time-consuming renewal processes in which they must re-verify their income</td>
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<td><strong>Categorical targeting</strong>&lt;br&gt;Eligibility is determined based on category membership (e.g., age, parenthood, health, employment status, etc.)</td>
<td>This method allows programs to select for groups of people that are especially vulnerable or most likely to benefit from a given program</td>
<td>Administrators often use a complex combination of categorical requirements, making it difficult for people to know if they are eligible.</td>
<td>Application processes are usually long and require a lot of paperwork to ensure that recipients meet all categorical requirements</td>
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<td><strong>Proxy-means testing (PMT)</strong>&lt;br&gt;Eligibility is determined using ‘proxy’ measures that are indicative of household wealth (e.g., assets, housing material). This method is common in developing countries where formal income data is unattainable.</td>
<td>Proxy indicators can often accurately predict wealth in remote communities and among households without formal bank accounts</td>
<td>Measuring proxies can be costly as enumerators must go door-to-door observing potential recipients’ homes and assets, and conducting surveys</td>
<td>Proxy-means testing often involves long, time-consuming household surveys</td>
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<td><strong>Community-based targeting (CBT)</strong>&lt;br&gt;Eligibility is determined by an elected committee of community members. The committee either decides who should receive cash transfers or they decide on the targeting criteria to be used.</td>
<td>Committee members often have insight into economic constraints and disadvantages that are difficult or costly to measure. For instance, the selection process can consider estimates of earning potential, rather than just static wealth.</td>
<td>This method is susceptible to corruption among committee members. Also, it creates an incentive for people to hide their wealth so as to increase their chances of being selected, which could have negative ancillary effects on the local economy.</td>
<td>There are time burdens that fall on the small number of committee members, but the recipients themselves need not face any substantial time-costs.</td>
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<td><strong>Self-targeting</strong>&lt;br&gt;Programs impose ‘ordeal costs’ to discourage wealthier recipients from applying. Ordeals include complex application processes and long wait-times.</td>
<td>Shown to be effective at screening out richer individuals.</td>
<td>Ordeal costs may also screen-out people who are especially time-poor, such as working mothers or those with inflexible working schedules.</td>
<td>In this method, imposing time-costs is intentional. The aim is to impose time-costs that are just high enough to discourage richer individuals.</td>
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Most of these targeting methods impose substantial time-costs that could inadvertently lead to the exclusion of individuals who are especially time-poor (e.g., due to high burdens of unpaid labor) and undermine the overall impact of the program. Yet, little attention is given to time-costs when designing targeting strategies in cash transfer programs.

Major cash assistance programs in the United States use a combination of formal income data targeting and categorical targeting – these programs include SSI (Supplemental Security Income), SNAP (Supplemental Nutrition Assistance Program), WIC (Special Supplemental Nutrition Program for Women, Infants, and Children), TANF (Temporary Assistance for Needy Families), and GA (General Assistance). There are combinations of categorical eligibility requirements at the federal, state, and county-levels, which makes it difficult for people to know if they meet the eligibility criteria. Furthermore, most jurisdictions do not offer a simple centralized mechanism to check eligibility, so people must determine for themselves if they meet the criteria, and then complete an arduous application involving complex paperwork as well as frequent renewal processes to prove their continued eligibility. For example, the TANF eligibility process takes 45 days, on average, and applicants must submit documentation on their income, expenses, other benefits they are receiving, and employment status (if they are unemployed, they must demonstrate that they have been actively seeking work). These time-costs likely contribute to the fact that only 23% of families living in poverty in the United States receive cash assistance via the TANF program. Indeed, TANF participation among eligible recipients has been declining since the program’s inception in 1996, largely due to increasingly complex eligibility criteria and paperwork burdens. In contrast, SNAP participation rates have been improving since 2002: the share of eligible low-income households participating in SNAP rose from 42% in 2002 to 75% by 2016. This improvement has been largely attributed to concerted efforts to reduce the time-costs associated with applying to and renewing SNAP.
Proxy-means testing (PMT) can also impose significant time-costs on recipients depending on the proxies that are chosen and how they are measured. Time-costs tend to accumulate when policymakers are overly focused on minimizing inclusion errors (defined as providing economic assistance to an individual or household that is not poor). Voters and donors are outraged anytime cash transfers are given to people who are not especially poor and, as a result, policymakers will often use highly complex and administratively burdensome proxy-means testing procedures to reduce inclusion errors. For instance, cash transfer programs often collect and weight a large number of proxy indicators to more accurately predict household wealth. Such proxies include: the education level of the household head, literacy, number of children, asset ownership, housing materials, number and type of livestock owned, and land ownership as well as community-level indicators such as the quality of the roads, access to clean water, access to electricity, and cost of electricity. Using a larger number of proxy variables in the PMT formula will improve its performance in predicting household wealth and reducing inclusion errors, but it is also costly on recipients’ time. This trade-off between predictive performance and time-costs is rarely considered when choosing the ‘best’ set of proxies. Proxy-means testing methods have been so focused on increasing targeting accuracy that time-costs can accumulate, unrecognized or unchecked, despite the potential negative downstream consequences for the overall impact of the program.

Community-based targeting (CBT) imposes minimal time-costs. This method takes advantage of local knowledge about which individuals are most in need of cash assistance and, therefore, program administrators do not need to impose time-costs collecting formal income data, determining categorical eligibility, or measuring proxy indicators of wealth. Furthermore, surveys have found that community-based targeting tends to be very popular among recipients themselves – people report that they mostly trust locally-elected committees
to allocate cash transfer fairly and appreciate the transparency of this process. However, in practice, CBT is rarely used and there is little empirical research comparing the targeting accuracy of CBT against more common methods like proxy-means testing. It is also susceptible to corruption among committee members, and there are challenges in scaling this approach for national and international cash transfer programs. However, the time-efficiencies relative to other targeting methods should not be under-valued – more research should examine the targeting accuracy of CBT and best practices for scaling this approach.

*Self-targeting* is a method in which time-costs are not a by-product, but a deliberate tactic to influence the behavior of program applicants. Program administrators intentionally impose time-costs such as long travel times, wait-times, and paperwork to discourage richer individuals from applying. The rationale is that richer individuals will self-select out of the program due to the time and effort involved. The initial evidence suggests that this tactic is effective. For example, a conditional cash transfer program in Indonesia tested the effects of self-targeting in a randomized controlled trial. In collaboration with the Indonesian government, researchers randomized 400 villages to have either an “automatic” application or a “self-targeting” application. For villages assigned to the automatic application, enumerators travelled to all households and conducted a proxy-means test (observing household material and assets). If a household passed the test, they were automatically enrolled in the program and sent $130 per year for 6 years. In the “self-targeting” villages, in order to enrol in the program, people were required to travel to a central registration site, wait in line, and complete an eligibility form. When researchers reviewed who ultimately enrolled, they found a substantially poorer group of beneficiaries in the self-targeting villages, indicating that these additional time-costs did effectively discourage relatively wealthier individuals from applying. However, these time-costs might lead to other unintended
selection effects, such as screening out people who have inflexible working schedules, a lot of dependents, or heavy burdens of unpaid labor (i.e. people who are especially time-poor).

Targeting and mean-testing: design insights to reduce time-costs

There are several ways to reduce the time-costs associated with targeting in cash transfer programs. The first, most obvious, and most disruptive approach is to remove targeting altogether. Such universal cash transfer programs – those that provide a fixed amount of money to everyone regardless of income level, assets, or socio-economic characteristics – are rare, but there have been an increasing number of experimental trials in recent years and there are some early indications that doing away with means-testing altogether may be the best option, in some cases. A second option is to simply means-test recipients less frequently. That is, to have longer eligibility periods so that recipients are subjected to fewer time-consuming renewal processes. Less frequent means-tests would inevitably lead to more inclusion errors as it would allow some individuals to continue receiving benefits even after they have escaped poverty, but the benefits may outweigh these costs. And a third option is to account for recipients’ time-costs when selecting a targeting method. We will explore this third option in more detail here.

Among the targeting methods outlined earlier, community-based targeting usually involves the lowest time-costs for recipients. More cash transfer programs should consider using community-based targeting as a primary or secondary targeting technique. For instance, programs could use a hybrid targeting approach, selecting villages that are known to have a high rates of poverty (e.g., using past census data or satellite imaging; see below), and then rely on community-based targeting to select households within these villages.

When using proxy-means testing, policymakers should consider not only the predictive accuracy of a given proxy, but also the time-costs associated with its measurement.
This could be done quantitatively, for instance, using stepwise regression techniques that select the ‘best’ set of proxies based on predictive accuracy, administrative costs, and estimated time-costs.

Policymakers should also consider new targeting methods that can reduce or eliminate time-costs. For example, some cash transfer programs have experimented with geographic targeting: providing cash transfers to entire regions or villages that are assessed to be poor, on average, without doing any individual-level or household-level targeting. An experiment in Siaya County, in rural Kenya, provided USD $1,000 cash transfers to over 10,500 households across 653 villages in which there are high levels of poverty. In aggregate, these cash transfers amounted to a 15-percentage-point increase in the local GDP, and the results showed significant benefits for households in the villages that received cash as well as spillover benefits for households in nearby villages, due to the boost in the local economy.

There are also potential time-efficiencies in novel targeting methods using satellite imaging and mobile phone data in machine learning models. In some regions, satellite and mobile phone data can be used to create geospatial maps of poverty without imposing any time-costs on recipients. For example, an emergency cash transfer program in Togo (Novissi) relied on a contactless targeting method to quickly identify recipients using satellite data in a machine learning model trained on past census data. The model learned which types of geographic patterns are indicative of poverty, tracing indicators like building density, the size of farm plots, paved versus unpaved roads, and roofing materials. After applying this approach to identify the poorest villages in Togo, mobile phone data was used to target the poorest individuals within these villages. Even the poorest people in rural Togo have access to a cellphone, so researchers could capture cellphone metadata that are correlated with poverty, such as the duration of phone calls, total volume of mobile data used, and mobile money transactions. By combining satellite geospatial data with mobile phone metadata, the
Novissi program was able to accurately target poor individuals who were then prompted via text message to enroll and immediately receive cash via a mobile money transfer.\(^1\) Similar targeting methods using mobile phone metadata are being planned in cash transfer programs in Uganda and Bangladesh.\(^2\)

It is important to note that many of the time-saving ideas that we have proposed would inevitably result in more inclusion errors. When designing a targeting strategy, there is often an unavoidable trade-off between minimizing inclusion errors and minimizing time-costs on recipients. To date, many cash transfer programs have been so focused on reducing inclusion errors that they have failed to explicitly address this trade-off. We must keep in mind that the central goal of cash transfer programs is to reduce poverty, and improving targeting accuracy is only beneficial insofar as it contributes to this goal. Therefore, it is critical to measure the costs of targeting – including time-costs – so that cash transfer programs can evaluate whether these costs are justified by greater reductions in poverty.

**Time-costs in Cash Disbursement: How Cash is Sent and Received**

In principle, cash transfer programs are very straightforward: send money to those who need it. However, the details matter. For instance, cash transfer programs must make critical design choices related to their cash disbursement method, the conditions they will impose (if any) on how the cash can be used, and how they will communicate with their recipients. Currently, these design choices are made with little attention to recipients’ time constraints. Cash transfer programs tend to focus narrowly on their recipients’ financial constraints, which is understandable but ultimately a mistake since people living in financial poverty often face simultaneous deficits of time. In this section, we review the current practices in the design of cash transfer programs and propose specific design insights to save time.
Cash disbursement: current practices

Payment mechanisms. Sending money to those who need it is not always as simple as it seems, especially in developing economies and in rural areas with little financial infrastructure. Currently, there are three over-arching methods for sending cash transfers: 1) direct transfers, 2) paypoint transfers, and 3) mobile money transfers. Here, we examine the time-costs involved in each of these methods and explore specific changes to save time.
### Table 8.2 Time-costs in each cash disbursement method

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<th>Cash disbursement method</th>
<th>Example programs</th>
<th>Time-costs</th>
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<tr>
<td><strong>Direct transfers</strong></td>
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<td>In advanced economies, cash transfer programs typically send money via direct transfer methods such as checks in the mail, bank transfers, or prepaid debit cards.</td>
<td>Direct bank deposit is a common method for large-scale social welfare programs in the United States (Social Security Income), Canada, the UK, and in many advanced economies around the world. Other programs, such as the SNAP and TANF in the United States (Supplemental Nutrition Assistance Program; Temporary Assistance for Needy Families) typically provide cash transfers via prepaid cards.</td>
<td>Direct bank transfers and checks involve minimal time-costs. However, prepaid cards can impose time-costs when they are restricted to specific merchants and ATMs.</td>
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<td><strong>Paypoint transfers</strong></td>
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<td>Recipients travel to a specific location (i.e., paypoint) to pick up physical cash. Paypoints include local program offices, bank branches, or networks of designated ATMs.</td>
<td>In regions with limited financial technology infrastructure or low rates of financial inclusion, paypoint methods are the most common payment mechanism. Examples include programs in Ethiopia (Productive Safety Net Program), Eritrea (Results-based Financing Conditional Cash Transfer Program), Kenya (Cash Transfer for Orphans and Vulnerable Children Program), Malawi (Social Cash Transfer Programme), and Ghana (Livelihood Empowerment Against Poverty Programme). Typically, recipients receive notice of the paypoint location 1-2 days in advance, and they must show up at a designated time to check-in with administrators, complete paperwork, and receive their cash.</td>
<td>Paypoint methods are administratively burdensome and extremely time-consuming. Recipients often must travel long distances, wait in line, and sometimes even spend the night at the paypoint due to limited transportation options.</td>
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<td><strong>Mobile money transfers</strong></td>
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<td>Payments are sent and received via mobile phone applications.</td>
<td>Kenya is the leader in mobile money: 90% of adults have a mobile money account, it is accepted at most local shops, and there is a wide network of over 300,000 mobile money agents that facilitate conversion to cash. This reach has made it possible for several large-scale cash transfer programs in Kenya to reach extremely poor recipients via mobile money. In most other countries, mobile money adoption remains quite low and, therefore, providing cash transfers via this mechanism would likely exclude people at the bottom of the income spectrum.</td>
<td>Mobile money transfers are usually highly time-efficient as the money is received instantly. However, there are some small, one-off time-costs required to setup an account. And, when local merchants do not accept mobile money, people must go to local agents to convert to physical cash.</td>
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Direct transfer methods are used in large-scale social welfare programs around the world, and they are usually quite efficient with respect to recipients’ time. Direct deposits are received immediately, and they impose virtually no time-costs. Checks are similarly efficient except for the small time-costs and delays involved with sending physical mail. Prepaid debit cards can impose some time-costs when their use is restricted to specific ATMs and merchants. For example, in California, TANF cash transfers are distributed via prepaid cards, but money can only be withdrawn (without a fee) at specific bank branches and ATMs. Many recipients do not live close to any of these designated branches or ATMs and therefore they must either waste time travelling or incur a withdrawal fee (which can be substantial).26

Paypoint transfer methods are used in places where it is not possible to send money via direct transfer methods. Paypoint cash disbursement often imposes large time-costs. For instance, Ethiopia’s PSNP (Productive Safety Net Program) provides monthly cash transfers for 6-months of the year via paypoints across Tigray, Amhara, Oromia, and SNNP. This program measured the amount of time recipients spent collecting cash transfers (one of the few programs to do so) and found that 97% of recipients travelled to the paypoints on foot, which took between 60-120 minutes, and 19% of recipients had to spend the night at the paypoint.27

Some alternative paypoint methods can reduce these time costs. For instance, Kenya’s Hunger Safety Net Programme (HSNP) provides cash transfers of 2,700 KSH ($24 USD) every two months to poor households via a network of ATMs. During the enrolment process, recipients register a bank account and receive a designated bank card that can be used to withdraw the cash transfers at any branch, ATM, or with program agents based at local shops. An evaluation of the HSNP found that most people can travel to their closest paypoint on foot in less than an hour, and they typically wait for less than 30 minutes at the paypoint to collect their cash.28 By providing a broader network of paypoints and allowing recipients to come at
a time of their choosing, Kenya’s HSNP imposes much lower time-costs on recipients compared to Ethiopia’s PSNP.

However, by far the most time-efficient cash disbursement method in developing economies is mobile money. These SMS-based applications allow cash transfers to be sent with minimal transaction fees and minimal time-costs. As mobile money systems continue to develop and proliferate, time-costs will decrease even further. For instance, when mobile money was first introduced in Kenya, it had very limited functionality and could only be used for simple peer-to-peer transfers. If people wanted to use their mobile money at local merchants, they first had to convert it into physical cash at local bank branches, ATMs, or with mobile money ‘agents’ in their community. All of these conversion options involved time-costs, to a greater or lesser extent, depending on their accessibility in the local area. However, mobile money has developed rapidly in Kenya, such that it can now be used for a wide range of financial transactions without ever having to convert to cash. Mobile money is now accepted at most merchants (especially in urban areas), it can be deposited into directly into digital savings accounts, and it can be used as collateral to take loans. As other countries follow these developments in Kenya, mobile money will become an increasingly time-efficient and frictionless method of sending cash transfers.

Conditions on cash transfers. As cash transfers have become increasingly popular as a tool for poverty alleviation, there has been a growing debate about the ethics and effectiveness of enforcing conditions.\textsuperscript{29} Conditional cash transfer (CCTs) require recipients to comply with certain conditions to maintain their eligibility, such as keeping their children in school, ensuring that they receive regular health checkups, or participating in job training programs. Unconditional cash transfers (UCTs), on the other hand, provide money with no stipulations whatsoever. There is an ongoing debate about the relative impact and ideology of CCTs versus UCTs that we will not address here, except to note that enforcing conditions
almost always requires imposing time-costs. These time-costs must be justified increased welfare benefits. Currently, most conditional cash transfer programs do not even measure the time-costs associated with monitoring conditions. The financial and administrative costs of monitoring conditions are often rigorously evaluated, but the time-costs are often unmeasured and unaccounted for in cost-benefit analyses. Therefore, while imposing conditions might be effective in motivating important behaviors, such as school attendance and health check-ups, it is unclear whether the associated time-costs undercut these benefits. As a first step, CCT programs should rigorously measure the time-costs they impose as well as the overall effects of the program on recipients’ time-use.

*Communicating with recipients.* Another important element of cash disbursement is the communications with recipients. Cash transfer programs must explain to recipients why they are receiving the transfer, how to register, the payment mechanism, amounts and timing, and conditions. Miscommunication and confusion are common, often leading to wasted time and distortionary effects. Many cash transfer programs do not invest sufficient resources into improving their communication procedures, perhaps under-estimating the importance of effective messaging, or failing to appreciate the diversity of attitudes, perspectives, and obstacles facing their target population. Recently, some cash transfer programs have started to think more carefully about their communication strategy, conducting research using qualitative methods from human-centered design and quantitative methods from behavioral economics to better understand the psychological, social, and cultural dynamics that might influence how recipients respond to cash transfers.
Cash disbursement: design insights to reduce time-costs

Cash transfer programs can save time for their recipients in the design of their payment mechanism, conditions, communications, and by providing planning and budgeting tools.

First, in developing countries, cash transfer programs should consider switching from paypoint cash disbursement to mobile money. There are often infrastructure constraints that make it difficult or costly to make this switch. For instance, mobile money adoption might be low in the target region or there might not be accessible bank branches, ATMs, or a sufficient network of mobile money agents to facilitate conversion to physical cash. However, the benefits of switching to mobile money might justify up-front capital expenditures to overcome some of these barriers. Such expenditures might include providing cellphones, placing more ATMs, or hiring mobile money agents. Typically, cash transfer programs do not consider such infrastructure expenditures as within their scope, but the returns could be substantial. Not only will the switch to mobile money save recipients time, but it is also safer (digital money is much more difficult to steal), more transparent (transaction records make mobile money transfers less susceptible to corruption), and it can accelerate financial inclusion (access to credit, insurance, and other financial products). To date, few studies have empirically tested the effects of switching from paypoint disbursement to mobile money.\(^{32}\) Future research should investigate whether the benefits outweigh the up-front capital costs, including estimating the total time-savings that can be realized over the duration of the program.

When it is not possible to use a mobile money payment method, cash transfer programs should measure and account for recipients’ time-costs when designing alternative payment mechanisms. For instance, when using a paypoint mechanism, they could create more paypoints and provide more flexible pick-up hours, which give recipients more control
over their time. Again, the welfare benefits of such time-saving investments should be evaluated in randomized controlled trials to determine whether the costs are justified.

Second, conditional cash transfer programs should account for recipients’ time when selecting their conditions and how they are monitored. In some cases, ‘soft conditions’ or ‘nudges’ could be used in place of traditional conditions, which usually involve time-intensive enforcement and monitoring.\(^{33}\) The core purpose of conditions is to force recipients to invest more money into human capital, usually on children’s schooling or healthcare. However, it may be possible to encourage similar human capital expenditures using non-coercive methods.\(^{34}\) As an example, a cash transfer program in Morocco tested the effects of ‘labeled’ cash transfers in a randomized controlled trial. Parents of school-age children received either a standard conditional cash transfer (CCT; conditional on their children’s school attendance), a labeled cash transfer (LCT; labeled as “designed to facilitate education investment”; there were no conditions of any kind on this cash transfer), or neither (control). The results showed that the labeled cash transfer was the most effective in increasing school attendance. Among children of parents who received the LCT, school attendance was 7.3 percentage points higher than the control group, and 2 percentage points higher than the CCT group.\(^{35}\) In addition to increasing school attendance, LCTs may have psychological and economic benefits for parents because of the time-savings relative to the burdensome monitoring of CCTs.

Future research should go beyond labeled cash transfers to investigate non-coercive interventions such as *earmarking* and *partitioning* cash transfers. For instance, past research suggests that partitioning cash transfers into multiple payments or depositing them into separate labeled ‘accounts’ could further increase the likelihood that they are spent as intended.\(^{36}\) Some mobile money systems now have the option to create labeled savings accounts.\(^{37}\) Cash transfer programs aiming to increase human capital investment could
deposit payments directly into ‘education’ or ‘health’ savings accounts with commitment elements, such as self-imposed fees for early withdrawal. Alternatively, cash transfer programs could provide people with budgeting tools to help them stick to their intentions. For example, beneficiaries could indicate how they intend to spend the money ahead of time and then administrators could deposit cash transfers into multiple accounts earmarked with their chosen goals, recognizing that once money has been earmarked for a specific purpose, people are less likely to spend it on temptations or other goods. These types of nudges take advantage of both the flexibility of unconditional cash transfers – for instance, funds can still be redirected in the event of an emergency – as well as recent innovations in fintech that can help people to pursue their financial goals, stick to their commitments, and save time.

**Time-costs in the Evaluation of Cash Transfer Programs**

*Measuring time-costs in cash transfer programs*

We argue that evaluations of cash transfer programs need to be revamped, beginning with more rigorous measurement of time-use. Most impact evaluations do not collect any measurements of recipients’ time, partly because resources of time undervalued by policymakers, and partly because time is a difficult resource to measure, both practically and conceptually. From a practical standpoint, measuring time-use typically requires in-depth surveys in which respondents are provided with a list of activities and asked to estimate the amount of time they spent on each activity over the past week. This method is costly to administer, time-consuming, and subject to memory biases. Alternative methods capture ‘snapshots’ of time-use that serve as a proxy for time-use more generally. For example, the Day Reconstruction Method (DRM) asks respondents to fill out a structured time-diary for the previous day, and the Experience Sampling Method (ESM) asks respondents what they are doing and feeling in the moment (respondents receive multiple timed ‘pings’ to complete
a one-minute survey). By implementing DRM or ESM time-tracking, it is possible to estimate the effects of a given economic assistance program on recipients’ time-use. At the very least, cash transfer programs should measure time-costs associated with the program itself, including the time it takes to enroll, receive each cash transfer, and maintain eligibility.

We also recommend cash transfer programs measure subjective time poverty, defined as the extent to which people have a chronic feeling of having too many things to do and not enough time to do them. Subjective time poverty can be measured in surveys or incorporated into DRM or ESM time-tracking, using items such as “I feel pressed for time today” (0 = do not agree at all, 6 = completely agree), “I often feel rushed” (1 = every day, 6 = never), and “I never seem to have enough time to get everything done” (0 = do not agree at all, 6 = completely agree). These measures are only moderately correlated with total hours of paid and unpaid labor (in the authors’ own time-use survey conducted among working mothers in Kibera, Kenya, we found a correlation between subjective and objective time poverty equal to $r = .33$). That is, the extent to which someone feels time-poor can be influenced by factors other than simply how much work they must do, including the type of work they do, their working schedule (e.g., predictability and volatility of working hours), autonomy over their time, and local norms related to busyness, leisure, and status.

It is useful to measure both objective and subjective time poverty as they are both important leading indicators of downstream psychological and economic wellbeing. For instance, subjective time poverty has been linked to future risk of depression, decreased productivity and performance at work, less creativity, and lower overall life satisfaction. Given that most cash transfer programs are only run for a period of months or a few years, it is difficult to measure the effects on these types of long-term life outcomes. Leading indicators, like measures of time poverty, can help researchers to estimate the future effects of a cash transfer program.
**How to analyze time-use and time poverty data in evaluations of cash transfers**

There are several methods to incorporate time-use and time poverty data into empirical evaluations of cash transfer programs. We suggest incorporating this data in four ways: 1) analyze heterogeneous treatment effects, 2) analyze causal pathways, 3) evaluate specific time-saving design features, and 4) conduct cost-benefit analyses.

First, baseline time-use and time poverty may be important variables to consider when analyzing the heterogeneity of treatment effects. These analyses can help to address the question: how effective are cash transfers among people who are especially time-poor? While some people living in material poverty are simultaneously time-poor (e.g., working mothers in urban areas in developing countries), others suffer from too much idle time (a problem that has been documented among some agricultural workers during lean seasons). Cash transfers may have differential effects depending on the pre-existing time constraints of the target population.

Second, cash transfer programs should conduct causal pathway analyses to examine the extent to which time-savings or changes in time-use led to any observed downstream benefits. Cash transfers may help to free-up resources of time or change how people choose to spend their time. For instance, cash transfers may enable people to outsource certain tasks, take on additional paid work, or spend more time socializing. When cash transfers are evaluated in a randomized controlled trial, collecting longitudinal data on time-use (before, during, and after the intervention) will allow researchers to conduct causal pathway analyses (e.g., using structural equation modeling) that can help determine whether recipients’ time-use plays an important role in explaining treatment effects.

Third, specific time-saving design features should be evaluated in randomized controlled trials. To date, there have been many RCTs testing the overall impact of cash transfer programs, but there is comparatively little evidence on the welfare effects of specific
design features that cost or save time. For instance, RCTs should test the effects of switching to more time-efficient targeting methods (see Premand & Schnitzer, 2021 for example of such an experiment), reducing mean-testing (e.g., longer eligibility periods, shorter means-testing processes), and changing cash disbursement method (e.g., increasing the number of paypoints, or switching from paypoint methods to mobile money). To run these RCTs, programs could independently manipulate one of these design features to examine treatment effects on poverty reduction, and then follow-up with causal pathway analyses to investigate whether time-savings were, in fact, the cause of any observed improvements in psychological or economic wellbeing.

Fourth, policymakers should incorporate time-costs and time-savings into cost-benefit analyses of cash transfer programs. Many social welfare programs conduct rigorous cost-benefit analyses, but beneficiaries’ time is rarely factored into their models. To do so, policymakers first need to determine how to value beneficiaries’ time. This is a complex endeavor that raises several critical questions. Should all individuals’ time be valued at the same rate? Should we factor-in individual differences in earning potential, or differences in value to the local community? And how can we account for differences in the value that individuals place on their own time? Fortunately, there is a useful precedent for addressing these complex questions. Since the 1970s, policymakers have calculated measures such the value of a statistical life (VSL) and the value of a quality-adjusted life-year (QALY) in order to assess the costs and benefits of policies such as environmental and health regulations. For example, the Environmental Protection Agency values a human life at $7.4 million (in 2006 USD), and therefore the benefits of a new environmental policy that reduces the risk of mortality by 1% can be valued at $74,000 per person affected. Similarly, cash transfer programs could calculate a value of a statistical hour (VSH) to account for time-costs or savings realized by beneficiaries of a given program. Establishing a VSH could help to
empirically evaluate whether the time-costs involved in targeting methods, means-testing, or conditions in cash transfer programs are justified.

**Cash Transfers Plus Time Transfers**

We have proposed that time-costs may be an important factor in determining whether cash transfer programs are effective in lifting people out of poverty. When people are extremely time-constrained, they may not be able to take full advantage of cash transfers. For instance, they might not be able to spend the cash productively on building new income streams. More generally, they may be less likely to make substantial changes to their regular earning, spending, and saving habits if they have extremely limited time.

There are two over-arching approaches that cash transfer programs can take to save time for their recipients. First, they can reduce the time-costs that they themselves impose. Thus far, we have focused on this first approach. We have proposed several specific changes to the design of cash transfer programs to reduce time-costs. A second approach is to provide people with direct ‘time transfers.’ Next, we outline a new model for economic assistance that combines cash transfers with simultaneous time transfers to help overcome poverty traps and generate more sustainable improvements to economic wellbeing. Time transfers can include investing in infrastructure that saves people time, providing labor-saving goods or appliances, or providing access to services that save time on chores. In this section, we provide the rationale and evidence supporting this proposal and offer some insights into how to design a program that provides cash transfer plus time transfers.

*Rationale for cash transfers + time transfers*

Evaluations of cash transfers have shown that they have a reliable positive impact on short-term, proximate outcomes such as asset accumulation, income, consumption, and food
security, but the evidence is mixed with respect to the effects on long-term, second-order outcomes such as new income-generation, nutrition, children’s education attainment, and health. In some impact evaluations, researchers found that the economic, psychological, and health benefits of cash transfers diminished quite quickly after people stopped receiving payments, leading some critics to argue that cash transfers do not have “transformative” effects.

What might prevent cash transfers from having more lasting, transformative effects? It may be because people living in poverty are not only cash-poor, but they are also constrained by psychological and structural barriers that make it difficult to use cash injections productively. Some psychological barriers might include chronic stress and increased risk of depression. There are also a myriad of structural barriers that might undermine the effectiveness of cash transfers including inadequate infrastructure, market failures, crime and corruption, risk exposure, and heavy burdens of unpaid labor.

Recognizing some of these constraints, policymakers and researchers have tested several variations of ‘cash plus’ programs, which provide cash transfers in combination with other goods, services, information, or nudges in an effort to ‘unlock’ the full benefits of the cash. For example, to address psychological barriers, some cash transfer programs have combined cash payments with mental health services. The results of cash + mental health services have been mixed. In Liberia, a program combining cash and cognitive behavioral therapy (CBT) led to a more lasting decrease in violence and criminal behavior among young men, compared to cash-alone and CBT-alone. In contrast, a program in Kenya found no such complementarity effects. This program found that both cash and therapy were beneficial for economic and psychological well-being, but there were no extra benefits when they were combined.
‘Cash plus’ programs have also sought to address structural barriers. For example, several programs have tested ‘cash + nutritionally fortified foods’ (that are not available in local markets).\textsuperscript{55} Other have tested ‘cash + management training’ (in Senegal),\textsuperscript{56} and ‘cash + health insurance’ (in Rwanda, Burundi, and South Korea), with mixed results.\textsuperscript{57}

To date, no poverty alleviation program has tested an intervention that provides ‘cash + time.’ We have made the case that deficits of time may play an important role the effectiveness of cash transfer programs. Specifically, people may be unable to start a new job or generate new income streams without both discretionary money and time. For instance, people might need spare money and spare time to move locations, undergo formal or informal job training, and incur a temporary income loss. Similarly, micro-entrepreneurs and agricultural workers may not be able to take advantage of productive new technologies if they cannot incur up-front financial and temporal costs. In addition, having more discretionary time to invest in social relationships, community, leisure, and rest may help people to extract greater benefit from cash transfers. Furthermore, in many developing countries, it is difficult to buy time. Therefore, cash transfers alone may not be able to address recipients’ time constraints. For instance, time-poor individuals cannot use cash transfers to remove time constraints caused by poor infrastructure. Also, time-saving goods and services are often unavailable or exorbitantly expensive in local markets. As an example, in the Kibera informal settlement in Nairobi, outsourcing a single load of laundry costs 500 KSH, on average – three times the average daily wage for local working women. This represents a market failure that cannot be solved by cash transfers alone.

While ‘cash + time’ has never been directly tested, there is some preliminary evidence that suggests it could be especially effective. Firstly, a large-scale multi-faceted poverty alleviation program combined cash transfers with three other elements: 1) a productive asset grant (e.g., livestock), 2) job training, 3) access to a savings account, and 4) health services.
This program was tested in Ethiopia, Ghana, Honduras, India, Pakistan, and Peru. The impact evaluation showed significant welfare improvements that lasted up to 36 months. These lasting benefits may have been produced, in part, by the fact that this program enabled beneficiaries to spend more time working. Compared to the control group, beneficiaries spent an average of 17.5 additional minutes per day working (primarily on agricultural activities). A drawback of this program was the cost per household. However, it was designed to be temporary: “a big push over a limited period of time, with the hope of unlocking a poverty trap.”

To the best of our knowledge, only one study has experimentally tested a poverty alleviation program directly aimed at saving time. This study was a longitudinal field experiment in Nairobi with a sample of 1550 working mothers, a population that is especially likely to be time-poor. Participants were randomly assigned to receive weekly ‘time transfers’ (laundry or prepared meal services) that reduced their burden of unpaid labor by 4-6 hours per week for three consecutive weeks. The effect of these time transfers was compared against equivalently valued unconditional cash transfers that increased their income by 33% relative to baseline earning, and a survey-compensation-only control condition that increased incomes by 14%. Surprisingly, the results showed similar increases in psychological well-being (reduced stress, increased net affect, and lower relationship conflict) across all three conditions. Pathway analyses revealed that the cash transfers and time-saving services produced these benefits via distinct mechanisms. For instance, people who received UCTs had more ‘cash on hand’ (i.e., liquid resources) and felt a sense of financial safety that led to a subsequent decrease in perceived stress. In contrast, time transfers reduced stress by lessening recipients’ burden of unpaid labor, indicating that freeing-up resources of time may provide an alternative pathway towards poverty alleviation. Furthermore, this study found that time transfers were especially beneficial for micro-entrepreneurs. By the end of this
program, micro-entrepreneurs who received time transfers generated more revenue than those in the cash transfers condition and the control condition.

This preliminary evidence suggests that time transfers may be an effective compliment to cash transfers. Providing a temporary boost of both money and time may help people to gain more control over their lives, make more meaningful changes to their economic circumstances, and escape poverty traps.

How to design a program that combines cash transfers and time transfers

The first critical question in designing such a program is: how to transfer time? There are three approaches: 1) investing in time-saving infrastructure, 2) providing time-saving technologies, and 3) providing time-saving services.

Infrastructure improvements are an expensive, but highly impactful method of transferring time. For instance, improving roads and public transportation can drastically reduce commute times, which fall disproportionately on the poor as they tend to live farther away from work compared to weather individuals. A study of 40 million households in the United States found that upward economic mobility was negatively correlated with commute times. Specifically, poor people living around cities with greater urban sprawl, and therefore longer commutes, were less likely to move up a wealth quintile.60

Time-saving technologies are a more immediate method of providing time transfers to people living in poverty. Such technologies include more efficient cookstoves and other household appliances, water collection technologies, and agricultural tools. For example, an NGO in rural India, OneProsper, builds rainwater harvesting tanks to reduce the number of trips that people take to their nearest water source. These tanks cost $520 USD and can save up to 5 hours per day for a person living in remote villages north of Jodhpur.61 Another example includes agri-tech designed to save time for farmers and help them increase their
yield. In Kenya, a machine-sharing company called Hello Tractor allows farmers to share or rent expensive agricultural equipment with their neighbors, saving time and money. Another Kenyan company, Digifarm, saves time for farmers through a mobile phone application that provides immediate access to financial services (e.g., credit and crop insurance), educational content (e.g., peer-to-peer knowledge sharing about best practices in planting and cultivation), and a digital marketplace to sell their produce.

Finally, a direct way to transfer time is to provide services that allow people to outsource routine unpaid labor. In the experiment with working mothers in Kibera, those who received laundry vouchers were able to eliminate an arduous chore (saving 5-7 hours per week), and those who received meal vouchers were able to take a night or two off from cooking (saving 2-4 hours per week). Future research should evaluate the viability of other time-saving services such as grocery delivery, water delivery, cleaning services, and subsidized childcare.

Policymakers should also consider time transfers specifically designed for micro-entrepreneurs – a subset of the working poor who may be able to use additional time most productively. For instance, economic assistance programs could provide cash transfers combined with time transfers in the form of business services, such as outsourced bookkeeping. Past research has shown that cash transfers for micro-entrepreneurs are effective in increasing revenues, but other forms of business assistance, such as management training, have been largely unsuccessful. Perhaps cash transfers plus time transfer would enable micro-entrepreneurs to accelerate the growth of their businesses.

Overall, when selecting a time transfer method, there are a few guiding principles that we think policymakers should follow. First, time transfers should be evaluated on cost-efficiency. This includes estimating how much time is saved per dollar spent and evaluating the downstream welfare benefits in randomized controlled trials comparing different time
transfer methods and benchmarking against equivalently-valued unconditional cash transfers. Second, policymakers should be careful not to remove chores that have important ancillary benefits. For instance, in some communities, walking to collect water is an important opportunity for socializing. Policymakers should be aware of these social and psychological dimensions before removing particular chores. Third, cash transfers and time transfers should be provided simultaneously and consistently so that recipients can take advantage of complementarity effects and make plans for how they will allocate upcoming transfers. These plans could then be supported by providing budgeting tools, time planners, and commitment devices to help people follow-through on their intentions.

**Conclusion**

Cash transfer programs cannot ignore their recipients’ time. How we spend our time, the control we feel over time, and our ability to plan for the future – these are central to our wellbeing and our aspirations for the future. It is difficult to imagine a better future and take the first steps towards realizing this future when daily life is filled with excessive unpaid labor, commuting, and waiting. For cash transfers to have a lasting impact, we need to better understand the effects they are having on their recipients’ time-use and take steps to reduce the time constraints that often coincide with financial constraints. Avoiding exacerbating these time constraints should be a first principle in the design of cash transfer programs.

We have outlined several steps that cash transfer programs can take to save time for their recipients. Start by identifying the time-costs that you are imposing in the targeting and enrolment process. How many hours of travel and administrative work are you imposing on the people you are seeking to help? Consider sacrificing some degree of targeting accuracy to reduce these time burdens. Also, take advantage of novel data sources for targeting, such as satellite imaging and cellphone metadata.
Change the way you deliver cash to your recipients. How can you make the cash more accessible so that you disrupt your recipients’ lives as little as possible? Be careful in assuming that the cash is so valuable to your beneficiaries that it justifies any inconvenience. Keep in mind that small time-costs in cash disbursement can accumulate into a large burden over the duration of the program.

Consider soft conditionality, nudges, and budgeting tools instead of strict conditions and monitoring. For instance, if you want to ensure that your recipients are investing in their children’s education and health, consider labelled cash transfers, reminders, and commitment devices, rather than top-down enforcement.

Perhaps most importantly, measure your recipients’ time-use and feelings of time poverty using techniques such as the Day Reconstruction Method (DRM) or the Experience Sampling Method (ESM). You may find that your program is having a profound effect on how people spend their time and how time-poor they are feel. Furthermore, these metrics will allow you to rigorously evaluate the cost-effectiveness of time-saving interventions.

Lastly, consider investing in time transfers alongside cash transfers. Time and money are two fundamental resources that people need to escape poverty. A program that provides a temporary boost in both of these resources may empower people to overcome barriers towards economic mobility and make lasting improvements to their personal and working lives.


18 Universal cash transfer programs have been implemented or tested in a temporary trial in Alaska, California, Brazil, Finland, Spain, Canada, and Kenya, among other places.


