Cash transfers and women's economic inclusion
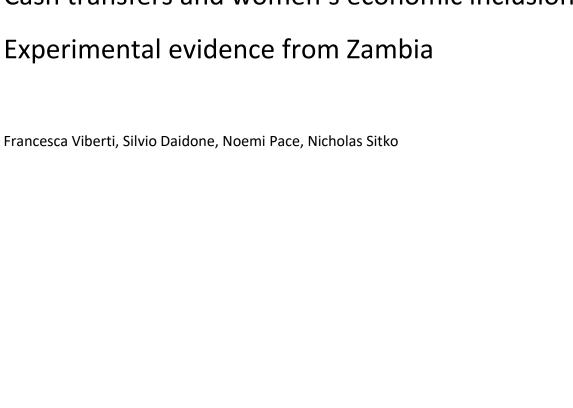
Experimental evidence from Zambia

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Abstract

This paper investigates whether an increase in exogenous income through the Child Grants model of the Social Cash Transfer programme in Zambia fosters economic inclusion among rural women. We conceptualize economic inclusion as a transformative process comprised of four pillars: productive capacity, financial inclusion, social power, and psychological assets. Using experimental data, we find strong evidence of direct impacts of the Child Grant on the productive capacity, financial inclusion, and psychological assets of rural women. In addition to these direct impacts, we implement a mediation analysis to explore the potential mediating role of psychological assets in affecting the other pillars of economic inclusion. Through this approach, we find indicative evidence of indirect and mutually reinforcing relationships between changes in psychological assets brought about through the Child Grant and improvements in the productive capacity and financial inclusion of beneficiaries. Such results suggest that cash transfers might be effective in promoting women's economic inclusion, both through the direct monetary effect and through the mediated effect of psychological assets.

Key words: *cash transfer, women's economic inclusion, time preferences, future expectations, randomized control trial, mediation analysis*

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Abbreviations and acronyms

AIR	American institute for research
CG	Child grant
CGP	Child grant programme
CWACs	Community welfare assistance committees
DFID	Department for international development
HFIAS	Household food insecurity access scale
ILO	International labour organization
IMF	International monetary fund
MCTG	Multiple category transfer grant
MEL	Money earlier or later model
NFE	Non-farm enterprise
ODI	Overseas development institute
OECD	Organisation for economic co-operation and development
RCT	Randomized control trial
RTP	Rate of time preference
SCT	Social cash transfers programme
UNICEF	United nations international children's emergency fund
UN Women	United nations entity for gender equality and empowerment of women
USD	United states dollar
ZKW	Zambian kwacha

1. Introduction

The principle of "leaving no one behind" places economic inclusion at the heart of the 2030 Agenda for Sustainable Development. While there are various definitions of economic inclusion (see for example FAO, 2020; World Bank, 2021; OECD, 2011), in general it is viewed as a transformative process that enhances "the ability of individuals to participate in, contribute to and benefit from growth processes" (OECD, 2011). The concept builds on the recognition that the factors that trap people and places in poverty are multidimensional, and therefore require flexible and multi-sectoral solutions (World Bank, 2021; Banerjee *et al.,* 2015; Daidone *et al.*, 2019; Barrientos, 2012; Pace *et al.*, 2018). These factors often revolve around the pervasive material and social constraints that limit the capacity of poor and vulnerable populations from engaging in and benefiting from economic processes (Lundberg and Pollak, 1996; Quisumbing and Maluccio, 1999; Duflo, 2012; Barrett and Carter, 2013; Balboni *et al.*, 2020). In addition, emerging evidence suggests that behavioural and psychological factors linked to poverty and vulnerability shape the economic choices and actions of the poor and, therefore, can play a deterministic role in economic inclusion processes (VeneKlasen and Miller 2002; Handa *et al.*, 2014; Dalton *et al.*, 2014; Appadurai, 2004).

Behavioural and psychological constraints to economic inclusion have only recently garnered attention in development discourse (Handa *et al.*, 2014; Banerjee *et al.*, 2011). Evidence on the "psychology of scarcity," for example, suggests that the mental stresses of poverty induce psychological shifts away from goal-oriented livelihood choices and toward habitual activities and decision-making that are biased toward immediate consumption (Molotsky and Handa, 2021; Handa *et al.*, 2020; Sheehy-Skeffington, 2018; Mani *et al.*, 2013; Mullainthan and Shaffir, 2013; Shah *et al.*, 2012; Schwabe and Wolf, 2009). This myopic focus on immediate consumption may shape peoples' economic decision-making capacity and agency within the economic sphere (Farah and Hook, 2017; Ericson and Laibson, 2018; Haushofer and Fehr, 2014; Tanaka *et al.*, 2010). As evidence shows, women are more likely than men to live in poverty and faces multiple hindrances in satisfying their needs (UN Women, 2018). For instance, they are more likely to suffer from food insecurity and malnutrition (FAO *et al.*, 2018), water and shelter deprivation (Gordon *et al.*, 2004), and sanitation deprivation (WaterAid, 2003). Due to such gender disparities, women's opportunities for education, employment and other daily activities, which might help them escape poverty, are significantly restricted (United Nations, 2018). Hence, women living in poverty have to deal with several gendered discriminations men are exempted from on top of the economic hardships, and such social discriminations reduce their opportunities of improving their life conditions. This explains why women are highly vulnerable to the phenomenon of cognitive scarcity, and its negative consequences when it comes to decision-making (Zhang and Gordon, 2020).

Fostering economic inclusion, therefore, requires more than simply addressing the material constraints that limit people's participation in economic life. It also requires strengthening the psychological capacity of marginalized or vulnerable people to engage in economic activities that are oriented beyond immediate consumption. Fundamentally, this entails a shift in intertemporal discount rates, which, in turn, is closely linked to changes in time preference for money and more optimistic expectations about the future (Handa *et al.*, 2020; Laajaj, 2017; Ifcher and Zarghamee, 2011).

Identifying programmatic interventions that simultaneously address the material constraints to economic inclusion while strengthening the psychological assets of the poor is critical for sustaining economic inclusion processes (Bertrand *et al.*, 2004; Anand and Lea, 2011). Cash transfer programmes offer a potential avenue for achieving these multiple objectives. There is a large and growing literature demonstrating that providing cash to poor and marginalized individuals triggers meaningful changes in economic choices. In rural contexts, these changes include greater investments in agricultural production (Todd *et al.*, 2010; Boone *et al.*, 2013; Daidone *et al.*, 2019; Ambler *et al.*, 2020); diversification in more commercialized agricultural production (Prifti *et al.*, 2020), and investment in rural non-farm enterprises, and accumulation of productive assets and savings (Covarrubias *et al.*, 2012; Handa *et al.*, 2015; Haushofer and Shapiro, 2016; Handa *et al.*, 2018). Drawing on economic theory, these studies posit that cash transfers foster productive investments by helping to reduce liquidity constraints (income effect) and consumption risks (insurance effect) that hinder investments in the context of pervasive market failures (Daidone *et al.*, 2019). Yet, the impacts of cash on recipients may extend beyond income and insurance effects. Experimental evidence from the pilot of the Zambia's Social Cash Transfer programme in Monze district suggests that cash transfers may influence recipient's intertemporal discount rates by altering their time preferences for money (Handa *et al.*, 2020). However, it is not clear if these behavioural and psychological changes contribute to measurable changes in economic behaviours.

In this article, we explore the complex dynamics between participation in cash transfer programmes and the multidimensional factors that characterize economic inclusion. We do this using experimental evidence from the Child Grant (CG) model of the Social Cash Transfer programme in Zambia, which provides unconditional cash transfers to women within extremely poor households who are mothers or caregivers of children under five years of age. Given the context of the CG data used in this study, our analysis focuses in particular on questions related to the economic inclusion of rural women. Policies and programmes to foster economic inclusion for rural women have both intrinsic and instrumental value (de Brauw *et al.*, 2014). On the one hand, increased economic inclusion of rural women is necessary to create a more just and equitable society. By fostering greater autonomy and independence in the productive sphere, rural women are able to exert greater social and political influence in their communities and society more broadly (OECD, 2011). On the

other hand, women's economic inclusion is linked to a broader set of desirable economic outcomes, such as decreased income inequality, increased economic diversification, and increased overall growth (World Bank, 2021; IMF, 2018).

We conceptualize women's economic inclusion as a transformative process that leads to greater income-generating capacity, while addressing the productive, financial, social, and psychological factors that hinder this process (FAO 2020; World Bank, 2021). We operationalize this by assessing the impacts of receiving cash on four pillars of economic inclusion. The first pillar is productive capacity, measured in terms of starting non-farm enterprises that are gendered as female in the study region—beer brewing, petty trading, and fish trading (Natali *et al.*, 2016)— as well as accumulating assets within these enterprises. The second pillar is financial inclusion, measured in terms of an ability of women to save and the quantity saved. The third pillar is social power, measured as increased decision-making power over personal and household economic choices. The final pillar assesses changes in psychological assets, measured in terms of changes in time preference— the subjective value attributed to present over future consumption (Balakrishnan, *et al.*, 2020; Cohen *et al.*, 2020) — and expectations about the future.

The paper makes several contributions to the literature on economic inclusion in general, and the impacts of cash transfer programmes on economic inclusion in particular. First, it assesses the impacts of an exogenous cash transfer on the multiple pillars of economic inclusion, thereby offering an approach for measuring progress on economic inclusion. Second, the article contributes to the small and growing literature on the impacts of cash transfers on behavioural and psychological parameters related to economic inclusion in rural spaces and extends this literature by focusing particularly on rural women. Finally, in addition to measuring the direct casual impacts of exogenous cash on economic inclusion outcomes, we employ a mediation analysis to explore whether observed impacts of cash on productive outcomes (productive capacity and financial inclusion) are influenced by improvements in recipients' psychological assets. Understanding the interrelationships between individuals' psychological assets and productive actions, and the role that policies and programmes play in strengthening these, is an important step toward developing effective economic inclusion and anti-poverty policies.

2. Conceptual framework: outcomes of interest and hypotheses

In this article, we bring together the distinct literature on women's economic inclusion and impacts of cash transfers to inform our empirical analysis and hypotheses. Our conceptual starting point is that the economic inclusion of rural women is a transformative process, involving a transition from a situation of limited power and lack of access and control over economic assets to a situation of advanced decision-making power and control over economic resources (Taylor and Pereznieto, 2014). VeneKlasen and Miller (2002) identified four specific directions in which this increase in power and agency occurs: *power to* make economic decision within households, communities and local economy; *power over* financial, physical and knowledge-based assets; *power with*, which is the ability to organize with other economic actors, and *power within,* meaning improved psychological assets, including self-esteem and sense of entitlement.

We map these dimensions of transformation onto four outcome variables to measure the impacts of cash transfers on women's economic inclusion in the context of the remote rural districts that are the focus of this study. The first outcome we call productive capacity, which is measured in terms of starting a non-farm enterprise and the value of assets owned for these enterprises. Participation in non-farm business activities is critical for economic inclusion of rural women, as it offers a pathway toward greater financial independence and exit from low-wage informal employment in which they are frequently trapped (Chant and Pedwell, 2008; Meagher, 2010; Malta *et al.*, 2019; Hunt and Samman, 2016; Kabeer *et al.*, 2012; Buvinic and Furst-Nichols, 2014; Grown, 2014).

To construct variables related to non-farm enterprises, we use responses from the business module of the survey, which was administered to the main female respondent only at follow-up. The first outcome measures the impact on the extensive margin as the share of households that run at least one of the typical female-led enterprises in the previous twelve months. In the three Zambian districts of Kalabo, Shangombo and Kaputa, which are the focus of this study, survey data shows that beer brewing, petty trading, and fish trading are the predominate female-led and account for 70 percent of the total active businesses of women (Natali *et al.*, 2016). Second, we construct a variable to measure the impact intensively in terms of the value of assets owned for those activities and their average monthly profit.

The second outcome we consider is financial inclusion, which we measure in terms of the ability of women to save and quantity saved. We compute these outcomes using responses from the saving module of the questionnaire, which was administered to the primary caregiver and recipient of the transfer. First, respondents were asked whether they were saving at the time of the interview. We use these binary responses to compute an outcome that is the share of women savers. For positive responses, the enumerator then asked about the amount saved in the last month, which we use to construct a continuous variable, with a value of 0 for those not saving at the time of the interview.[1]

Literature shows that the ability to save has a transformative effect on women's lives, since it allows them to manage risk, smooth consumption, improve their resilience to shocks and increase their agency (Hendricks, 2019). Indeed, one of the biggest obstacles for women's economic inclusion is the lack of access to economic resources and the lack of freedom to use them independently (Hunt and Samman, 2016; Taylor and Pereznieto, 2014; Klugman *et al.*, 2014). Personal savings for women are an important source of economic resources, as well as a tool to expand their economic choices and to increase their control over personal and household expenditures (ODI, 2016; Klugman *et al.*, 2014). Evidence also shows that improvements in savings of women generates a range of beneficial multipliers, including better outcomes for children (e.g., education and health), household nutrition, and community development (Duflo, 2003; Prina, 2015).

The third outcome we consider is social power, which we measure using variables that capture women's decision-making power over a range of personal and household economic activities. Gendered differences in economic decisions-making power within households reflects patriarchal social structures that segregate women's sphere of influence to domestic tasks and men's to productive one (Alesina *et al.,* 2013; Santos Silva and Klansen, 2021). However, evidence shows that intra-household decision-making power is influenced by changes in women's control over economic resources (Duflo, 2012; Lundberg and Pollak, 1996; Quisumbing and Maluccio, 1999). As suggested by the Nash cooperative bargaining models of household behaviour, increased control over resources by women implies an increased "threat point" for exiting the household, which gives women greater bargaining power within the household, and translates into greater decision-making power over household and personal choices (de Brauw *et al.*, 2014).

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[1] Ninety-four percent of respondents at both baseline and follow-up keep their savings at home and only around three percent keep their savings in official institutions, such as post offices or banks.

To measure women's decision-making power we make use of four decision-making questions in the women's empowerment module. Namely: 1) who decides how the money the respondent earns will be used; 2) who decides how the money the respondent's partner earns will be used; 3) who makes decision about major household purchases, and; 4) who makes decision about making purchasing for daily household's needs. Responses are coded as one if the respondent indicated that she is either sole or joint decision-maker. In addition, we construct an index using those binary variables following the summary index methodology of Anderson (2008), which is a weighted mean of the four responses.

Our final economic inclusion outcomes are psychological assets, measured in terms of changes in time preferences and expectations about the future. Theoretical models of decision-making ascribe a determinative role in economic decision-making to individuals' time preferences and expectations about the future (Balakrishnan, *et al.*, 2020 Cohen *et al.*, 2020; Handa *et al.*, 2014). In the context of the remote and poor regions that are the focus of this study, two phenomena shape the relationships between economic inclusion and individuals' subjective time preferences and future expectations. First, individuals prefer to smooth consumption evenly over time (Harrison *et al.*, 2007; Harrison *et al.*, 2005: Holt and Laury, 2002, 2005). Second, households that are eligible for the CG lack the resources and markets to allow them to separate their production from consumption decisions, since consumption choices directly depend on their production (Daidone *et al.*, 2019). In context of missing insurance and credit markets and in the absence of social safety nets, these two factors push individuals to rationally internalize the risk of negative shocks to consumption in their productive choices, favouring safer but less productive and profitable options (Prifti *et al.*, 2019; Boucher *et al.*, 2009; Lamb, 2003; Mendola, 2007; Dercon, 1996; Morduch, 1995). This behaviour is also known as the *Ramsey discount framework*, and helps to explain how households make logical inter-temporal consumption and investment decisions using a rate of time preference (RTP) to discount future consumption in order to maximise lifetime utility, based on their expectations about future life conditions (Di Falco *et al.*, 2011). As a result, pessimistic expectations and preferences for immediate utility may relegate households to subsistence oriented economic choices, and thus hinder processes of economic inclusion. [2]

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[2] All indicators of women's economic inclusion have been tested for statistical differences at baseline between treatment and control group, using t-test of means across groups and clustered errors[2], and no significant difference has been detected (see **Annex 1 and Annex 2**).

Women's time preferences are derived from a set of task choices, which ask respondents to choose between a smaller-sooner or larger-later pair of outcomes. [3] In the case of the Zambia CG impact evaluation survey, non-incentivized lotteries were administered to one woman per household, either the biological mother or the primary caregiver of a child aged 0-5 living in the household. Participants were asked about five different intertemporal tasks, each entailing two possible options: accepting an immediate gain of ZKW 200, which remains stable throughout the five tasks, or waiting one month to receive a larger sum. This larger sum increased throughout the tasks. More precisely, future gains amount to ZKW 200, [4] ZKW 300, ZKW 400, ZKW 600 and ZKW 800 respectively. To put these amounts into context, ZKW 200 is equivalent to about USD 40, which represents a substantial income increase considering that the average daily per-capita consumption pre-treatment is ZMW 1,05 (20 USD cents).

In order to estimate consistent time preferences, intertemporal choices must follow the *monetary monotonicity* property, which requires that subjects prefer more money to less given a fixed time horizon (Freeman *et al.*, 2016). We, therefore, excluded inconsistent responses, where participants were willing to wait for a certain amount, but not willing to wait for a higher gain. This allows us to identify one single switching point for each respondent, which is a proxy for their intertemporal discount rate. (Handa *et al.*, 2020; Andersen *et al.*, 2006; Harrison *et al.*, 2002). Moreover, as discussed in Laajaj (2017), future expectations influence discount rates, so that pessimistic individuals tend to be more myopic as a way to reduce anxiety about the uncertainty of the future. To estimate the impact on the Zambia CG on time discounting, we create five dummy variables, one for each task administered, and one for "impatient" respondents, defined as those who are never willing to wait in any task.

Future expectations are computed based on responses to a series of questions which ask if the respondent anticipates a better life in one, three or five years from the moment of the interview.[5] The specific question is: "Do you think your life will be better in one/three/five years?". The three options are asked separately, so that respondents have to answer to each of them. To estimate the impact on the Zambia CG on future expectations, one dummy variable for each of the three question is constructed, and one additional variable for "pessimistic" respondents who do not foresee life improvement in either one, three or five years.

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[3] These questions come from a "Money Earlier or Later" (MEL) model, and more precisely through the Multiple Price List variant (Cohen *et al.*, 2020; Freeman *et al.*, 2016)

[4] This response was included to test whether or not respondents understood the time preference questions. However, qualitative interviews show that people may rationally choose to wait for an equal amount of money if they are unsure how to spend it or have no place to keep it securely (Handa *et al.*, 2020).

[5] For the analysis, two set of indicators have been created, one including all the respondents, and one filtering-out respondents showing a double switching pattern of response. The aim is to compare the results and to assess whether inconsistent respondents represent a possible source of bias in the estimation.

We posit that exogenous income provided to rural women through a cash transfers could affect these economic inclusion variables through both direct and indirect channels (**Figure 1**). Directly, an influx of cash can reduce the liquidity constraints that limit the ability of people to make investments, generate savings, and exercise decision-making power within the economic sphere (Bastagli *et al.*, 2019; Barrientos, 2012; DFID, 2001; Hanlon *et al.*, 2010; Honorati *et al.*, 2015; ILO, 2014; Daidone *et al.*, 2019). Moreover, receiving regular transfers of cash may foster positive expectations about the future and alter individuals' time preferences (Handa *et al.*, 2019; Handa *et al.*, 2016; Haushofer *et al.*, 2013; Banerjee *et al.*, 2011). We, therefore, hypothesize that participation in CGP will be associated with improvements in all four dimensions of rural women's economic inclusion considered in this study (solid lines **Figure 1**).

Figure 1. Direct and Mediated Effect of Zambia Child Grant model of the Social Cash Transfer

Yet, the relationships between exogenous cash and economic inclusion are likely to be complex and interdependent. While receiving cash through the CGP may directly influence each of four pillars of economic inclusion, indirect and mutually reinforcing relationship likely also exist (dashed lines **Figure 1**). In particular, individuals' choices with respect to material dimensions of economic inclusion, namely productive capacity and financial inclusion, are closely tied to and driven by their psychological assets. As individuals' expectations about the future improve and time preferences shift away from immediate consumption, their propensity to engage in productive activities and to save are also likely to increase (Handa *et al.*, 2020; Laajaj, 2017; Tanaka *et al.*, 2010; Pender, 1996). If this is the case, we anticipate that changes in individuals' psychological assets due to participation in the CG will indirectly mediate individuals' productive capacity and

financial inclusion (Handa *et al.*, 2014; Banerjee *et al.*, 2011). Evidence of both direct and mediated impacts of CG on economic inclusion would be indicative of a transformational process of economic inclusion involving mutually reinforcing and self-sustaining feedback loops generated through the intervention.

3. Background and experimental design

3.1 The Zambia child grant model of the social cash transfer programme

Despite generally strong economic growth over the last two decades and reductions in overall poverty headcount rates, rural poverty rates remain persistently high in Zambia. Indeed, rural poverty rates are almost three times higher (77.9 percent) than the levels observed in urban areas (27.5 percent) according to the latest available statistics (World Bank, 2015). The challenge of entrenched rural poverty is particularly acute for rural women, who face a range of social, cultural, and economic constraints to engaging in remunerative income generating activities (Davis *et al.*, 2010).

In response to the challenges of persistent rural poverty, vulnerability and social exclusion, the Government of Zambia prioritized the development and expansion of social protection for rural people in the *Fifth National Strategic Development Plan* (Government of the Republic of Zambia, 2006). An important component of the country's social protection response is the Social Cash Transfer (SCT) programme. The SCT was initially piloted in the districts of Kalomo (2003), Kazungula (2005), Chipata (2006), Monze (2006) and Katete (2007), and mainly targeted destitute and incapacitated/labour-constrained households. Between 2010 and 2014, the programme increased its scale and institutional strength, while targeting was subdivided into two streams: i) the Child Grant (CG) model, reaching households with children under the age of five, and; ii) the Multiple Category Transfer Grant (MCTG) model, providing support to households with other forms of vulnerability.

This analysis focuses on the CG model, which was rolled out in the districts of Kalabo, Shangombo and Kaputa[6] between 2010 and 2012. The Government targeted these three districts because they had the highest rates of mortality, morbidity, stunting and wasting among children under five in the country. The CG targets all household with children under five years of age with an unconditional cash transfer. However, during the pilot, the CG model enrolled only households with children under three years of age to ensure that beneficiaries would receive the transfer for two years.

Through the CG, mothers or primary care givers of the children received ZMW 55 per month (USD 11), which was later increased to ZMW 60 (USD 12). The value of the transfer did not vary by the number of children, and payments occurred every two months through a local paypoint manager. Based on the average of five members per household in the sample, the benefit accounts for an additional ZMW 11 per capita per month, which represents a 27 percent increase to the household's monthly expenditure (the average monthly per capita expenditure in recipient households before the implementation of the CG was KMW 40.74).

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[6] In 2014 the Government of Zambia reformed its cash grants system and harmonized the existing models with one common set of eligibility criteria. Recipients of the CG and MCTG were gradually re-targeted for the new programme and phased out if they were no longer eligible. As of 2019, the approximate reach of the SCT is of 632 000 households (UNICEF, 2019).

To gauge the impact of the CG on recipient, a rigorous 24-months impact evaluation was embedded in the pilot. Studies based on these data show generally strong impacts on recipient livelihoods. Handa *et al.*, (2015), for example, find that the CG increased per capita consumption by ZMW 15.18, which is more than the per capita value of the transfer itself (ZMW 11). This contributed to a reduction in extreme poverty (headcount rate reduced by five percent and poverty gap and squared poverty gap by almost 11 percent); improvements in food security (especially for infant and child feeding); an increase crop and livestock production, inputs investment (land, seeds, fertilizer and hired labour); asset accumulation (tools and animal ownership, business assets), and non-farm business activities. Also, a shift from agricultural wage labour to family agricultural and non-agricultural business has been observed (Handa *et al.*, 2015; Daidone *et al.,* 2019).

The evidence on the CG model's impact on women is also compelling. After 24 months, the cash transfer increased the proportion of women savers by around 23 percentage points (Handa *et al.*, 2015), while small animal livestock holding, which typically fall under the control of women (Njuki and Sanginga, 2013) increased by between 3 percentage points (ducks) and 15.4 percentage points (chickens) (Handa *et al.*, 2015). The programme also contributed to an increase of 15 percentage points in women's participation in non-farm businesses relative to the control group (Natali *et al.*, 2016). Finally, Bonilla *et al.* (2017) find an increase in sole or joint decision-making in 5 out of 9 domains (children's schooling, own income, partner's income, children's clothes, family visits). Nevertheless, magnitude of change (0.34) is quite small, suggesting that patriarchal social structures continue to shape the capacity of rural women to exercise control over economic decisions within households.

3.2 Data and study sample

The data used for this study comes from a total of 2,515 households (14,565 individuals) from 90 Community Welfare Assistance Committees (CWACs) that were randomly selected and assigned to immediate or delayed participation in the CG in Kalabo, Shangombo and Kaputa districts, Zambia. The first stage of randomization involved selecting 30 CWACs within each district through a lottery, after which CWACs members and Ministry staff identified all eligible households with at least one child under 3 years old. This resulted in more than 100 eligible households in each CWAC. By flip of a coin, half of the CWAC were assigned to treatment and the other half to the control groups. Finally, 28 households were randomly sampled from each CWAC to be interviewed for the impact evaluation. Baseline data collection was conducted before the division into treatment and control group in order to avoid possible biasing of responses. Both baseline and follow-up data collection rounds occurred during the lean season (September through February), when households have the least amount of food left from the previous harvest, and thus hunger and poverty are more severe.

Because we are interested specifically in impacts on rural women, we exclude from the analysis households where the main respondent is male (47 households). In addition, 138 households where the main female respondent changes between baseline and follow-up are dropped, in order to allow perfect comparability of women's time preferences and expectations. Finally, households that dropped out of the programme are excluded from the analysis, even though AIR (2013) investigated in detail both differential and overall attrition, and did not find any differential attrition after twenty-four months. [7] The resulting final panel sample comprises a total of 4382 households (2191 for each wave).

3.3 Empirical strategy

In this section, we first present the estimation strategy adopted to investigate the direct impact of CG model of the Social Cash Transfer on women's economic inclusion (section 3.3.1). We then discuss the mediation analysis conducted to investigate the indirect impact of CG via the mediating role of time preferences and expectations (section 3.3.2).

3.3.1 Direct impact of the Child Grant on women's economic inclusion

To assess whether the cash transfers had an impact on women's economic inclusion, we took profit of the experimental design of program roll-out and we used the panel sample to conduct a Single Difference analysis at follow-up. This approach allowed us to overcome the potential issue of lack of baseline data on non-farm enterprises. For consistency reasons, the same methodology has been applied to all the indicators. Nevertheless, when data are also available at baseline, a difference-in-differences estimation is conducted for robustness check.

(Eq.1) $Y_h = \beta_0 + \beta_1 T_h + \beta_2 X_h + \varepsilon_h$

Y is one of the indicators for economic inclusion (productive capacity, financial inclusion, social power, for household h, T is the dummy variable identifying the treated households h for T equal 1, and X is a vector of exogenous characteristics including: socio-demographic characteristics of the main respondents and of the household (age, education, marital status, household members, roof and wall material, toilet conditions, water availability, consumption); negative income shocks (weather shocks, crop failure, death or illness of breadwinner), and; district of residence. Standard errors are clustered at CWAC level, and weights adjusted for attritions and the probability of selection were used to provide population-level estimates of the impact of the programme.

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[7] Differences in the overall attrition are mainly due to a lower rate of response at follow-up in Kaputa district. Daidone *et al.* (2014) expanded the analysis by assessing the randomness of attrition, and no significant determinant of attrition beside residing in Kaputa has been identified, including the treatment indicator. This confirms that attritors are balanced and randomly distributed across treatment and control group, hence they do not entail a source of bias.

3.3.2 Mediated impact of the child grant on women's economic inclusion

To assess whether the CG affects women's economic inclusion through changes in women's time preference and future expectations we apply a mediation analysis methodology, first introduced by Baron and Kenny (1986) and later developed by Imai *et al.* (2010; 2010b; 2011). The goal of mediation analysis is to assess the role of possible intermediate variables that explains alternative causal mechanisms between the independent and the outcome variable (Imai *et al.*, 2010; Keele *et al.*, 2015). The model proposed by Baron and Kenny (1986) is a linear structural equation that allows the decomposition of the total impact into the mediated effect of the treatment, which represents the hypothesized causal mechanism through which the mediator affect the outcome, and the direct effect of the treatment, representing all other channels through which the program impact the outcome (Imai *et al.*, 2011: 768). In other words, this approach allows us to disentangle if and to what extent the impact of the independent variable (treatment status) on the outcome variable (productive capacity, financial inclusion, and social power) is mediated by time preferences/future expectations (Baron and Kenny, 1986).

The validity of mediation analysis' causal interpretation relies on the so-called *sequential ignorability* assumption, which implies that two ignorability assumptions are made sequentially (Imai *et al.*, 2010; Imai *et al.*, 2010b).

Ignorability assumption: [8]

$$\{Y_h(t', m), M_h(t)\} \perp\!\!\!\perp T_h | X_h = x \qquad\qquad (Eq.\ 2)$$

$$Y_h(t', m) \perp\!\!\!\perp M_h(t) | T_h = t, X_h = x \qquad\qquad (Eq.\ 3)$$

where $0 < \Pr(T_h = t | X_h = x)$ and $0 < \Pr(M_h = m | T_h = t, X_h = x)$ for *t=0,1* and all *x* and *m* in the support for X_h and M_h, respectively. The first part, namely the *ignorability of treatment assignment* states that, given the observed pre-treatment confounders, treatment status is assumed to be statistically independent of potential outcome variables and mediators. In other words, treatment status must be exogenous from both women's economic inclusion and time preferences/future expectations. In the specific case of this research, the experimental design of the program, namely Randomized Control Trial (RCT), satisfies the first part of sequential ignorability. The second part is the *ignorability of the mediator*, given the treatment status and the observed pre-treatment confounders. For this part to hold, all the pre-treatment covariates that affect the relationship between the outcome variable and the mediator must be included in the model (Keele *et al.*, 2015). When both parts of the sequential ignorability assumption hold, the average causal direct effect and the mediated effect can be estimated with the following two linear equations:

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[8] Where T_h is the treatment indicator, M_h is the mediator and X_h is a vector of confounders for households h

$$Mediator_h = \alpha_0 + +\alpha_1 T_h + a_2 X_h + \varepsilon_h \qquad \text{(Eq. 4)}$$

$$Y_h = \gamma_0 + \gamma_2 T_h + y_2 X_{ht} + \gamma_3 Mediator_h + \varepsilon_h \qquad \text{(Eq. 5)}$$

According to this method, the total effect of the treatment is decomposed in a direct effect and a mediated effect. The direct effect ($\hat{\gamma}_2$ from Equation 5) is the impact of the cash transfer on women's economic inclusion, controlling for the mediator and a set of confounding factors that might influence the impact. The mediated effect ($\hat{\alpha}_1$ from Equation 4 multiplied by $\hat{\gamma}_3$ from Equation 5) is equal to the direct impact of the program on the mediator ($\hat{\alpha}_1$ from Equation 4) multiplied by the effect of the mediator on women's economic inclusion ($\hat{\gamma}_3$ from Equation 5). It represents the part of the impact on women's economic inclusion due to changes in the mediator, in this case changes in time preferences and future expectations separately, always controlling for the same set of confounding factors.

3.4 Baseline descriptive data

All control variables were tested for statistical differences between treatment and control group, using t-test of means across groups and clustered errors. Out of 24 variables, only 1 showed statistically significant differences, namely the average number of females per household, which is higher in the treatment group (see **Annex 3**).

Besides checking for statistical balance between the two groups, baseline descriptive statistics provide a snapshot of demography, wellbeing and lifestyle of the sample before the start of the cash transfer. Sample characteristics are presented with control and treatment group combined since they are similar and they both represent eligible candidates of the CG. First, the households included in the sample are evenly distributed among the three districts of implementation. The average household size is five, and overall female and male population are balanced. The average age is 15, denoting an extremely young sample, and the average age of the female main respondents is 29. Most female main respondents are married (73 percent), and the majority of them did not complete primary education (71 percent). Households' food insecurity is measured according to the Household Food Insecurity Access Scale Methodology (Coates *et al.*, 2007), and the average score is 15, on a scale from 0 to 24, where highest score indicates more severe food insecurity. [9] A total of 53 percent of the sample lies above the average food insecurity score. The average weekly per capita expenditure for food consumption is ZKW 8.9, which drops to ZKW 7.3 for the most food insecure households. Housing conditions of both treatment and control group are basic, with 95 percent of the sample lacking access to improved toilet facilities, 95 percent with thatched roof, 68 percent live in houses without burnt brick walls, and 78 percent without access to safe drinking water. In terms of negative shocks to income, 5.3 percent of the households were affected by flood in the previous year, 4.9 percent were affected by drought and six percent by chronic illnesses. Taken together, these data suggest that the population

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[9] The standard version of the HFIAS includes 9 questions, with a score ranging from 0 to 27. Nevertheless, in this specific case one question has been dropped from the analysis, namely eating limited variety of food, as it was asked only at follow-up.

in this study face considerable material hardship, and thus substantial barriers to actively engaging in and benefiting from economic growth opportunities.

These barriers are reflected in indicators of economic inclusion. Only 16.8 percent of female respondents indicated that they were saving at baseline, with an average quantity saved per month of ZKW 18.7 (approximately $3.50).[10] Most of the respondents declared to be involved in household economic-decisions together with their partners: 56 percent indicated that they are involved in decisions on how to spend their personal earnings; 50 percent are involved in the decisions about how to spend their partners' earnings; 59 percent participate in decisions on major household purchases, and; 65 percent participate in decisions on daily household purchases. These responses result in an average decision-making index of 0.59.

In terms of time preferences at baseline, 20.5 percent of respondents declared that they are not willing to wait one month for any of the amount of money offered in the time task. On the other hand, 15 percent of respondents are willing to wait for the sum of ZKW 200 (approximately $37.5), while the majority of interviewed (37 percent) switched from the immediate gain to the future prize at ZKW 300 (approximately $56.3). In terms of future expectations, 31 percent of respondents do not foresee any improvement in one, three or five years. The percentage of those positive about the future increases throughout the task, with 52 percent declaring to have better life expectations in one year, 55 percent in three years and over 60 percent in five years.

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[10] Baseline data for non-farm business are not available as data have been collected only at follow-up.

4. Results

We divide this section into two sub-sections. In the first, we present the results of the direct impacts of the CG on the four pillars of women's economic inclusion. In the second, we explore if the CG cash transfer generates indirect impacts on material dimensions of economic inclusion (productive capacity and financial inclusion) through changes in psychological outcomes (time preferences and expectations).

4.1 Direct impact of the Zambia child grant model of the social cash transfer programme

4.1.1 Productive capacity: non-farm businesses

After 24-months, the program was highly successful at fostering rural women's productive capacity by increasing new business investments and increased profitability and asset value in already existing ones (see **Table 1**). We find that the share of households running any type of non-farm business is 17 percent higher in the treatment group at follow-up. This result is consistent with Daidone *et al.* (2019) that document an increase of the share of households operating a non-farm business of 17 percentage points. Most of the increase in engagement in non-farm enterprises is caused by a significant growth in female-dominated enterprises of petty trade, beer brewing and fish trade. Indeed, the share of households running at least one of these enterprises in the treatment group is 11.8 percent higher compared to the control. Furthermore, not only was the program successful in increasing extensively female entrepreneurship, it also improved the economic value and performance of these businesses. Female-led non-farm business in the treatment group are more profitable, registering a higher average monthly profit compared to the control group (ZKW 43 more, approximately $8.1), and with more monthly investments in assets (ZKW 15 more, approximately $2.81). Results are robust also for non-linear estimations (see **Annex 4**). These results highlight the transformative impact a small but recurring cash transfer can have in alleviating the constraints that rural women face in engaging in and benefiting from productive economic activities.

Table 1. Direct Impact of Zambia Child Grant on female-leaded Non-Farm Enterprises

	NFE (all)		Female-led NFE		NFE asset value (female-led)		NFE profit (female-led)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.
T	**0.172*****	**0.171*****	**0.114****	**0.118*****	**14.79****	**15.03*****	**43.40****	**43.35****
	(0.0460)	(0.0380)	(0.0378)	(0.0320)	(4.562)	(4.358)	(16.07)	(13.79)
N	2191	2191	2191	2191	2191	2191	2191	2191
R^2	0.031	0.105	0.016	0.075	0.007	0.026	0.015	0.075

Linear weighted estimations models with robust standard errors clustered at CWAC level in parenthesis. Unadjusted models do not include control variables, while Adjusted models include control variables such as, information on the household's head (age, completed primary education, married), demographic characteristics of the household (n. of male and female members, n. of members per age group), housing conditions (toilet, wall, roof, water), household consumption and self-assessed poverty, shocks (drought, flood, illness, bread-earner death), district of residence.

$^+ p < 0.10,\ ^* p < 0.05,\ ^{**} p < 0.01,\ ^{***} p < 0.001$

4.1.2 Financial inclusion: women's savings

After 24-months, the Child Grant positively affected women's savings, increasing both their propensity to save and the amount of savings. Results show a 24.8 percent increase in women saving in the treatment group compared to the control at follow-up (158 percent increase from the baseline) (see **Table 2**). This result is consistent with Daidone *et al.* (2019) that find an increase of 24 percent in the share of households saving (both male and female headed households). Moreover, women in the treatment group save on average ZKW 52 more than the control group at follow-up (258 percent increase from the baseline) (see **Table 2**). Results are robust for non-linear and for difference-in-differences estimations (see **Annex 5** and **6**). This finding highlights the impact the CGP has on increasing the capacity of women to save and is indicative of broader improvements in their economic autonomy and capacity to maneuverer within the economic sphere. Savings also reflect changes in recipients' intertemporal discount rates and an improvement in their expectations about the future (Loewenstein and Prelec, 1992; Loayza *et al.,* 2000).

Table 2. Direct Impact of Zambia Child Grant on women's savings

	Currently Saving		Amount saved (last month)	
	(1)	(2)	(3)	(4)
	Unadj.	Adj.	Unadj.	Adj.
T	0.248***	0.248***	54.96***	52.29***
	(0.0334)	(0.0323)	(12.84)	(11.15)
N	2191	2191	2190	2190
R^2	0.068	0.090	0.013	0.055

Linear weighted estimations models with robust standard errors clustered at CWAC level in parenthesis. Unadjusted models do not include control variables, while Adjusted models include control variables such as, information on the household's head (age, completed primary education, married), demographic characteristics of the household (n. of male and female members, n. of members per age group), housing conditions (toilet, wall, roof, water), household consumption and self-assessed poverty, shocks (drought, flood, illness, bread-earner death), district of residence. For the variable "amount saved" one observation has been excluded as it was a source of bias being an outlier.

$^+ p < 0.10$, $^* p < 0.05$, $^{**} p < 0.01$, $^{***} p < 0.001$

4.1.3 Social power: women's decision-making power

After 24-months, no impacts are found on women's decision-making power, with no statistically significant difference between the treatment and the control group in any of the five indicators (see **Table 3**). Results are robust for both non-linear and difference-in-differences estimations (see **Annex 7** and **8**). Hence, despite being highly successful in influencing material dimensions of economic inclusion—productive capacity and financial inclusion— the CG did not have any meaningful impact on women's social power. These results are in line with findings of Bonilla *et al.* (2017), and they imply that gender norms around economic activities are strongly shaped by patriarchal structures within households and societies. Shifts in decision-making power within a household require broader structural shifts in gendered norms. Thus, women's economic inclusion will not be achieved simply by addressing material constraints but will also require concerted efforts to foster women's social power at multiple levels.

Table 3. Direct Impact of Zambia Child Grant on Women's Decision-Making Power

	Own Earnings		Partner Earnings		Major hh purchases		Daily hh purchases		Index	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.
T	-0.0278	-0.0191	0.0433	0.0429	-0.00895	-0.00130	0.00589	0.00942	0.00715	0.0112
	(0.0293)	(0.0284)	(0.0376)	(0.0356)	(0.0318)	(0.0251)	(0.0203)	(0.0191)	(0.0197)	(0.0193)
N	2191	2191	2191	2191	2191	2191	2191	2191	2191	2191
R^2	0.001	0.038	0.002	0.050	0.000	0.092	0.000	0.042	0.000	0.026

Linear weighted estimations models with robust standard errors clustered at CWAC level in parenthesis. Unadjusted models do not include control variables, while Adjusted models include control variables such as, information on the household's head (age, completed primary education, married), demographic characteristics of the household (n. of male and female members, n. of members per age group), housing conditions (toilet, wall, roof, water), household consumption and self-assessed poverty, shocks (drought, flood, illness, bread-earner death), district of residence
$^+ p < 0.10$, $^* p < 0.05$, $^{**} p < 0.01$, $^{***} p < 0.001$

4.1.4 Psychological assets: time preferences and future expectations

After 24-months, we find that the CG has a limited but positive impact on time preference. In particular, we find a decrease in the share of women in the "impatient" group by 4.8 percent (22 percent decrease from the baseline). However, the distribution of responses among those willing to wait stays unchanged (see **Table 4**). Results are robust for both non-linear and difference-in-differences estimations (see **Annex 4** and **5**).

These results suggest that for many of the respondents, the transfer was not sufficient in size or duration to significantly alter their time preferences. However, significant changes in time preferences among those with the highest rates of time discounting at baseline ("impatient") is promising. A preference for immediate low returns over higher future returns can trap people into a chronic cycle of low return, subsistence activities (Molotsky and Handa, 2021; Handa *et al.*, 2020; Sheehy-Skeffington, 2018; Mani *et al.*, 2013; Mullainthan and Shaffir, 2013; Shah *et al.*, 2012; Schwabe and Wolf, 2009). A modest change among those with the highest discount rates suggests improvements in their capacity to engage longer-term and remunerative economic activities, which is critical for achieving meaningful economic inclusion.

Table 4. Direct Impact of the Zambia Child Grant on Time Preferences

	Impatient		KW 200		KW 300		KW 400		KW 600		KW 800	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.
T	-0.048	**-0.0486**+	0.010	0.007	0.046	0.039	-0.003	0.003	-0.015	-0.012	0.000	-0.002
	(0.029)	(0.0266)	(0.016)	(0.014)	(0.037)	(0.033)	(0.028)	(0.024)	(0.019)	(0.017)	(0.008)	(0.007)
N	2191	2191	2191	2191	2191	2191	2191	2191	2191	2191	2191	2191
R^2	0.004	0.049	0.000	0.024	0.002	0.035	0.000	0.035	0.001	0.025	0.000	0.015

Linear weighted estimations models with robust standard errors clustered at CWAC level in parenthesis Unadjusted models do not include control variables, while Adjusted models include control variables such as, information on the household's head (age, completed primary education, married), demographic characteristics of the household (n. of male and female members, n. of members per age group), housing conditions (toilet, wall, roof, water), household consumption and self-assessed poverty, shocks (drought, flood, illness, bread-earner death), district of residence

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In terms of women's future expectations, we find that after 24-months of participation in the CG scheme the percentage of people who do not expect any improvement in their lives in one, three or five years decreased relative to the control group. In particular, cash transfer beneficiary women are 8.7 percent less likely than women in the control group to expect no improvements in the lives in the future. This represents a 26 percent decrease from the baseline levels. Moreover, women in the treatment group show a more positive attitude towards the future, being 9.9 percent more likely to expect life improvements in one year (19 percent increase from the baseline), 6.8 percent in three years (12.5 percent increase from the baseline) and by 9.4 percent in five years (15 percent increase from the baseline) compared to the control group at follow-up (see **Table 5**).[11] Hence, not only did the program diminish the overall rates of those who did not foresee any life improvement at all, it also shifted the people's expectation about livelihood improvement closer to the present. Results are robust for both non-linear and difference-in-differences estimations (see **Annex 14** and **15**).

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[11] Impacts on women's future expectations are measured both for all respondents and for the sub-sample of respondents who did not exhibit a double-switching pattern throughout the task. As results are robust for both groups, inconsistent respondents have been included in the analysis since they do not represent a source of bias. Results for only consistent respondents are available in the Annex section (see **Annex 6 and 7 and 8**).

Table 5. Direct Impact of Zambia Child Grant on women's future expectations

	Pessimist		1 Year		3 years		5 years	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.
T	-0.0874***	-0.0869***	0.102**	0.0997**	0.0679*	0.0688**	0.0949***	0.0942***
	(0.0183)	(0.0175)	(0.0338)	(0.0320)	(0.0262)	(0.0237)	(0.0211)	(0.0198)
N	2191	2191	2191	2191	2191	2191	2191	2191
R^2	0.025	0.044	0.013	0.031	0.007	0.035	0.020	0.041

Linear weighted estimations models with robust standard errors clustered at CWAC level in parenthesis. Unadjusted models do not include control variables, while Adjusted models include control variables such as, information on the household's head (age, completed primary education, married), demographic characteristics of the household (n. of male and female members, n. of members per age group), housing conditions (toilet, wall, roof, water), household consumption and self-assessed poverty, shocks (drought, flood, illness, bread-earner death), district of residence.

$^+ p < 0.10$, $^* p < 0.05$, $^{**} p < 0.01$, $^{***} p < 0.001$

4.2 Mediation analysis

As the preceding discussion suggests, participation in the Child Grant had significant direct impacts on women's economic inclusion outcomes, including generating measurable improvements in material outcomes (productive capacity and financial inclusion) and strengthening beneficiaries' psychological assets. While these pillars of economic inclusion can be considered separate outcomes, they are also interrelated and potentially mutually reinforcing. In this section, we use a mediation analysis to disentangle whether or not the observed changes in material dimensions of economic inclusion were due solely to the direct improvements in income brought about by the cash transfer, or if some of these changes are explained by the mediating role of changes in time preference and future expectations.

Table 6 reports the impact of the cash transfer on women's economic inclusion mediated by time preferences. We focus specifically on the mediating role of time preference changes in the "impatient" group, which was shown in the previous section to be directly influenced by participation in the Child Grant. Results indicate that while the primary impact channel for productive capacity and financial inclusion is directly through the income effect of the CG, changes in time preferences do have significant mediation effects. We find that the CG increased the propensity to run non-farm businesses by 11.7 percent, of which 2.5 percent of the increase is attributed to changes in time preferences. In term of assets, the total impact of participating in the CG is equivalent to an increase in value of ZKW 15.03 per month relative to the control, 2.9 percent if which is motivated by changes in women's time preferences. Finally, the cash transfer leads to an increase in the amount saved by ZKW 52.29 per month, 2.14 percent of which is due to changes in women's time preferences (ZKW 1.12). Results of the non-linear estimation model are robust.

Table 6. Impact of the Zambia Child Grant on women's economic inclusion mediated by time preferences

	Linear model					Non-linear model				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	impatient	fem_NFE	asset_fNFE	save	qty.save	impatient	fem_NFE	asset_fNFE	save	qty.save
T	-0.0486[+]	0.114***	14.59***	0.247***	51.17***	-0.0461[+]	0.110***	14.72***	0.239***	52.23***
	(0.0266)	(0.0315)	(4.192)	(0.0322)	(10.91)	(0.0254)	(0.0302)	(4.290)	(0.0289)	(10.96)
impatient		-0.0625*	-9.084*	-0.0181	-23.18**		-0.0616*	-9.661*	-0.0197	-26.47**
		(0.0294)	(4.412)	(0.0385)	(8.148)		(0.0293)	(4.469)	(0.0391)	(9.451)
Direct Impact		0.114***	14.59***	0.247***	51.17***		0.110***	14.72***	0.239***	52.23***
Mediated Impact		0.003[+]	0.44[+]	0.00	1.12**		0.003[+]	0.44[+]	0.00	1.21[+]
Total Impact		0.117***	15.03***	0.248***	52.29***		0.113***	15.16***	0.239***	53.45***
N	2191	2191	2191	2191	2190	2191	2191	2191	2191	2190
R^2	0.049	0.077	0.028	0.090	0.056					

Linear weighted estimations models with robust standard errors clustered at CWAC level in parenthesis. Control variables include information on the household's head (age, completed primary education, married), demographic characteristics of the household (n. of male and female members, n. of members per age group), housing conditions (toilet, wall, roof, water), household consumption and self-assessed poverty, shocks (drought, flood, illness, bread-earner death), district of residence. For the variable "quantity saved" one observation has been excluded as it was a source of bias being an outlier.
[+] $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

As shown in **Table 7**, mediated impacts of women's future expectations on productive capacity and financial inclusion are also found. Focusing on changes in expectation in the "pessimist" group, [12] we find that of the 11.7 percent increase in propensity to run non-farm businesses due to the CG, five percent of this due to a diminished rate of pessimism among women in the treatment group. Similarly, of the 24.8 percent increase in women who are currently saving due to the CG, 5.2 percent of the increase is the result of changes in women's future expectations. Focusing on the quantity saved, we find that the program increased the amount saved by ZKW 52.28, 5.26 percent of which is due to changes in women's future expectations (for a value of ZKW 3.07). Results of the non-linear estimation model are robust. Therefore, even though limited, future expectations seem to have played a role in the enhancement of women's economic inclusion.

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[12] All of the other indicators of future expectations have been used as mediators and estimations are available in the Annex section (see **Annex 16**, **17**, **18**).

While these mediated impacts of time preferences and future expectations on productive capacity and financial inclusion are not large in magnitude, the fact that these indirect impacts are discernible after only 24 months is encouraging. These indirect, and mutually reinforcing, relationships are critical for sustaining a process of economic inclusion once material support through the CG ends.

Table 7. Impact of Zambia Child Grant on women's economic inclusion mediated by future expectations

	Linear Model					Non-Linear Model				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	pessimist	fem_NFE	asset_fNFE	save	qty.save	pessimist	fem_NFE	asset_fNFE	save	qty.save
T	-0.0869***	0.111***	14.79**	0.235***	49.22***	-0.0878***	0.105***	14.94**	0.226***	50.54***
	(0.0175)	(0.0323)	(4.548)	(0.0327)	(10.94)	(0.0186)	(0.0308)	(4.663)	(0.0294)	(11.05)
pessimist		-0.0799*	-2.826	-0.156***	-35.35***		-0.0996*	-2.710	-0.183***	-34.50***
		(0.0340)	(7.951)	(0.0345)	(6.688)		(0.0428)	(8.199)	(0.0469)	(6.438)
Direct Impact		0.111***	14.79**	0.235***	49.22***		0.105***	14.94**	0.226***	50.54***
Mediated Impact		.006**	.245	.013***	3.07***		.008**	.238	.016***	3.03***
Total Impact		.117***	15.03***	.248***	52.28***		.114***	15.17***	.242***	53.56***
N	2191	2191	2191	2191	2190	2191	2191	2191	2191	2190
R^2	0.044	0.077	0.027	0.098	0.056					

Linear weighted estimations models with robust standard errors clustered at CWAC level in parenthesis. Control variables include information on the household's head (age, completed primary education, married), demographic characteristics of the household (n. of male and female members, n. of members per age group), housing conditions (toilet, wall, roof, water), household consumption and self-assessed poverty, shocks (drought, flood, illness, bread-earner death), district of residence. For the variable "quantity saved" one observation has been excluded as it was a source of bias being an outlier.

$^+ p < 0.10$, $^* p < 0.05$, $^{**} p < 0.01$, $^{***} p < 0.001$

5. Conclusion

In this article, we developed an empirical strategy to measure the impacts of the Child Grant (CG) model of the Social Cash Transfer programme in fostering economic inclusion among rural women in Zambia. We conceptualize economic inclusion as a transformative process comprised of four pillars: productive capacity, financial inclusion, social power, and psychological assets. As argue that promoting economic inclusion requires policies and programmes that directly influence these pillars, while at the same time generating indirect feedback loops and mutually reinforcing dynamics between the pillars. These direct and indirect pathways are essential for initiating and sustain a process of economic transformation.

Using experimental data from the Zambia CG evaluation, we measure the direct impacts of the cash transfer on the four pillars of economic inclusion and the indirect relationships between the psychological and material pillars of economic inclusion. We find strong evidence of direct impacts of CG on the productive capacity, financial inclusion, and psychological assets of rural women. However, we do not find any direct impacts in terms of women's social power, measured in terms of improved decision-making power within the household. This is a critical weakness and highlights the limitations of cash transfers in terms of fostering meaningful economic inclusion for rural women. Indeed, while Social Protection has the potential to address different gender dimensions of poverty and vulnerability, its impacts are not automatically empowering or transformative (FAO, 2018). Interventions should be designed to recognize women's productive roles, alleviate their reproductive care burdens and support their social and economic position besides providing income support for women's economic inclusion to be achieved (UN Women, 2015; Holmes and Jones, 2013; FAO, 2018). To address these limitations, it is important to consider integrating cash transfers with complementary programmes designed to address social and cultural barriers that limit women's decision-making power within households and beyond. This "plus" may include, among others, in-kind transfers, psychosocial support, vocational training or access and linkage to services (Roelen *et al.*, 2017; Esser *et al.*, 2019), for which evidence is scarce since it remains mostly a challenge to turns this knowledge into concrete actions. Difficulties in mainstreaming gender in design and implementation of Social Protection programmes are caused by a limited understanding of how gender inequalities shape women's experience of poverty, and by failing to understand the critical importance of integrating gender specific elements into the social protection cycle (FAO, 2018).

In addition to these direct impacts, we utilize a mediation analysis to explore indirect relationship between pillars of economic inclusion. Through this approach, we find indicative evidence of indirect and mutually reinforcing relationships between changes in psychological assets brought about through the CG and improvements in the productive capacity and financial inclusion of beneficiaries. Evidence of these indirect pathways is important, because by kick starting these mutually reinforcing relationships a process of economic inclusion can be better sustained after income support from the CG ends.

Closing the economic gender gap, particularly in rural areas, is fundamental for achieving the global ambition to end poverty. Enabling a process of economic inclusion of rural women is critical for this ambition and is consistent with the normative principle of leaving no one behind. Our results suggest that providing economically marginalized rural women with regular transfers of cash can help to initiate and sustain this process. Yet cash alone is not sufficient. Innovative policies and programmes that address the material, social, and psychological constraints to economic inclusion in a holistic manner are required. This builds on the recognition that these barriers are multi-faceted, and therefore require multi-dimensional actions to address them.

Annexes

Annex 1. Indicators of women's economic inclusion – baseline summary statistics

	Control			Treatment			Mean Diff.
	Mean	Min	Max	Mean	Min	Max	
Currently saving (yes=1)	.15	0	1	.18	0	1	0.02
	(.36)			(.38)			
Amount saved last month	19.65	0	5000	17.13	0	3000	-2.52
	(170.16)			(119.05)			
Decision-making: own earnings (yes=1)	.57	0	1	.54	0	1	-0.03
	(.49)			(.49)			
Decision-making: partner's earnings (yes=1)	.52	0	1	.47	0	1	-0.05
	(.49)			(.49)			
Decision-making: hh purchases (yes=1)	.60	0	1	.58	0	1	-0.02
	(.49)			(.49)			
Decision-making: daily purchases (yes=1)	.65	0	1	.64	0	1	-0.01
	(.48)			(.48)			
Decision-making power (index)	.59	0	1	.57	0	1	-0.02
	(.43)			(.43)			
Observations	1097			1094			

Standard deviations in parenthesis.

*** p<0.01, ** p<0.05, * p<0.1*

Annex 2. Mediators – baseline summary statistics

	Control			Treatment			Mean Diff.
	Mean	*Min*	*Max*	*Mean*	*Min*	*Max*	
never propense to wait (yes=1)	.23	0	1	.18	0	1	-0.04
	(.42)			(.38)			
Switch at KW200 (yes=1)	.16	0	1	.14	0	1	
	(.37)			(.34)			-0.02
Switch at KW300 (yes=1)	.34	0	1	.41	0	1	
	(.47)			(.49)			0.06
Switch at KW400 (yes=1)	.12	0	1	.12	0	1	
	(.32)			(.33)			0.00
Switch at KW600 (yes=1)	.09	0	1	.09	0	1	
	(.28)			(.29)			0.01
Switch at KW800 (yes=1)	.04	0	1	.02	0	1	
	(.19)			(.15)			-0.01
no better life expectations (yes=1)	.32	0	1	.29	0	1	
	(.47)			(.46)			-0.03
better life expectations in 1 yr (yes=1)	.53	0	1	.52	0	1	
	(.49)			(.49)			-0.01
better life expectations in 3 yrs (yes=1)	.55	0	1	.56	0	1	
	(.49)			(.49)			0.01
better life expectations in 5 yrs (yes=1)	.62	0	1	.63	0	1	
	(.48)			(.48)			0.01
Observations	1097			1094			

Standard deviations in parenthesis.

*** p<0.01, ** p<0.05, * p<0.1

Annex 3. Control variables – baseline summary statistics

	Control			Treatment			Mean Diff.
	Mean	*Min*	*Max*	*Mean*	*Min*	*Max*	
respondent age	29.5	14	78	29.9	15	74	.36
	(9.36)			(9.64)			
completed primary ed. (hh head)	.27	0	1	.31	0	1	0.05
	(.44)			(.46)			
respondent married/cohabiting	.71	0	1	.74	0	1	0.03
	(.45)			(.44)			
# males in the hh	2.71	0	9	2.67	0	9	-0.03
	(1.56)			(1.54)			
# females in the hh	2.90	0	10	3.05	0	10	**.16***
	(1.33)			(1.41)			
hh members <=5 yrs old	1.90	0	5	1.88	0	7	-0.02
	(.74)			(.80)			
hh members >=6 & <=12 yrs old	1.25	0	5	1.26	0	6	0.01
	(1.13)			(1.14)			
hh members >=13 & <=17 yrs old	.44	0	4	.50	0	4	0.07
	(.70)			(.76)			
members in hh >=15 & <=59 years old	1.94	0	8	2.00	0	8	0.06
	(.78)			(.79)			
members in hh >=60 years old	.06	0	3	.08	0	2	0.01
	(.27)			(.29)			
hh tot. consumption exp. (weekly)	44.27	1.25	334	48.14	0	233.25	3.87
	(38.21)			(38.11)			
ultra poor hh (below weekly median food consumption)	0.53	0	1	.48	0	1	-0.05
	(.49)			(.49)			
access to improved toilet facility	.05	0	1	.04	0	1	-0.01
	(.22)			(.18)			
appropriate roof	.05	0	1	.04	0	1	-0.02
	(.22)			(.19)			
brick walls	.31	0	1	.31	0	1	0.00
	(.46)			(.46)			
clean drinking water source	.21	0	1	.22	0	1	0.01
	(.41)			(.41)			
hh affected by drought	.05	0	1	.05	0	1	-0.00
	(.22)			(.22)			
hh affected by flood	.07	0	1	.03	0	1	-0.04
	(.26)			(.18)			
hh affected by illness	.06	0	1	.07	0	1	0.01
	(.25)			(.26)			
hh affected by death of bread earner	.01	0	1	.01	0	1	-0.00
	(.11)			(.10)			
Living in Kalabo district	.33	0	1	.33	0	1	-0.00
	(.47)			(.47)			
Living in Kaputa district	.33	0	1	.33	0	1	0.00
	(.47)			(.47)			
Living in Shangombo district	.33	0	1	.33	0	1	0.00
	(.47)			(.47)			
Observations	1097			1094			

Standard deviations in parenthesis. *** p<0.01, ** p<0.05, * p<0.1

Annex 4. Direct impact of zambia child grant on female-leaded non-farm enterprises – non-linear model

	NFE		fem. led NFE		asset value		profit	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.
T	**0.169*****	**0.167*****	**0.113****	**0.113*****	**14.79****	**15.17*****	**43.40****	**42.15****
	(0.0438)	(0.0360)	(0.0371)	(0.0307)	(4.561)	(4.460)	(16.07)	(13.45)
N	2191	2191	2191	2191	2191	2191	2191	2191

Non-Linear weighted estimations models with robust standard errors clustered at CWAC level in parenthesis. Results report marginal effect. Unadjusted models do not include control variables, while Adjusted models include control variables such as, information on the household's head (age, completed primary education, married), demographic characteristics of the household (n. of male and female members, n. of members per age group), housing conditions (toilet, wall, roof, water), household consumption and self-assessed poverty, shocks (drought, flood, illness, bread-earner death), district of residence.

$^{+} p < 0.10$, $^{*} p < 0.05$, $^{**} p < 0.01$, $^{***} p < 0.001$

Annex 5. Direct impact of zambia child grant on women's savings – non-linear model

	Currently saving		Qty. saved (last month)	
	(1)	(2)	(3)	(4)
	Unadj.	Adj.	Unadj.	Adj.
T	**0.240*****	**0.240*****	**54.96*****	**53.46*****
	(0.0301)	(0.0290)	(12.84)	(11.28)
N	2191	2191	2190	2190

Non-Linear weighted estimations models with robust standard errors clustered at CWAC level in parenthesis. Results report marginal effect. Unadjusted models do not include control variables, while Adjusted models include control variables such as, information on the household's head (age, completed primary education, married), demographic characteristics of the household (n. of male and female members, n. of members per age group), housing conditions (toilet, wall, roof, water), household consumption and self-assessed poverty, shocks (drought, flood, illness, bread-earner death), district of residence. For the variable "quantity saved" one observation has been excluded as it was a source of bias being an outlier.

$^{+} p < 0.10,$ $^{*} p < 0.05,$ $^{**} p < 0.01,$ $^{***} p < 0.001$

Annex 6. Direct impact of zambia child grant on women's savings – difference-in-differences model

	Linear Model		Non-Linear Model	
	(1)	(2)	(3)	(4)
	save	save qty.	save	save qty.
T	0.0191	-3.849	-0.160*	-58.91***
	(0.0267)	(5.316)	(0.0686)	(13.18)
wave	0.0199	-50.16	-0.00203	-47.31*
	(0.0702)	(34.86)	(0.0520)	(20.35)
T#wave	**0.229***	**56.14***	**0.182***	**56.18***
	(0.0422)	(10.57)	(0.0411)	(10.82)
N	4382	4381	4382	4381
R^2	0.117	0.060		

Estimations models with robust standard errors clustered at CWAC level. All models are adjusted for baseline covariates. For non-linear models results report marginal effects estimations. Control variables include information on the household's head (age, completed primary education, married), demographic characteristics of the household (n. of male and female members, n. of members per age group), housing conditions (toilet, wall, roof, water), household consumption and self-assessed poverty, shocks (drought, flood, illness, bread-earner death), district of residence. For the variable "quantity saved" one observation has been excluded as it was a source of bias being an outlier.

[+] $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Annex 7. Direct impact of zambia child grant on women's decision-making power – non-linear model

	Own Earnings		Partner Earnings		Major hh purchases		Daily hh purchases		Index	
	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
T	-0.0277	-0.0249	0.0432	0.0428	-0.00895	-0.00627	0.00589	0.00419	0.00715	0.00921
	(0.0293)	(0.0283)	(0.0375)	(0.0353)	(0.0318)	(0.0250)	(0.0203)	(0.0186)	(0.0197)	(0.0193)
N	2191	2191	2191	2191	2191	2191	2191	2191	2191	2191

Non-Linear weighted estimations models with robust standard errors clustered at CWAC level in parenthesis. Results report marginal effect. Unadjusted models do not include control variables, while Adjusted models include control variables such as, information on the household's head (age, completed primary education, married), demographic characteristics of the household (n. of male and female members, n. of members per age group), housing conditions (toilet, wall, roof, water), household consumption and self-assessed poverty, shocks (drought, flood, illness, bread-earner death), district of residence.

[+] $p < 0.10$, [*] $p < 0.05$, [**] $p < 0.01$, [***] $p < 0.001$

Annex 8. Direct impact of zambia child grant on women's decision-making power – difference-in-differences model

	Linear Model					Non-Linear Model				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	own earn.	partner earn.	maj. purch.	dly. purch.	index	own earn.	partner earn.	maj. purch.	dly. purch.	index
T	-0.00870	-0.0365	-0.00551	0.0104	-0.00709	0.00199	-0.127[+]	-0.0141	0.00183	-0.0326
	(0.0276)	(0.0352)	(0.0267)	(0.0283)	(0.0255)	(0.0631)	(0.0736)	(0.0584)	(0.0474)	(0.0524)
wave	-0.0152	-0.400***	-0.120	-0.0246	-0.130*	-0.107*	-0.554***	-0.174***	-0.0114	-0.192***
	(0.0731)	(0.0883)	(0.0805)	(0.0610)	(0.0586)	(0.0505)	(0.0537)	(0.0487)	(0.0502)	(0.0344)
T#wave	-0.0104	**0.0795[+]**	0.00421	-0.000980	0.0183	-0.0136	**0.0843[+]**	0.00389	0.00185	0.0209
	(0.0412)	(0.0456)	(0.0380)	(0.0325)	(0.0310)	(0.0408)	(0.0452)	(0.0371)	(0.0310)	(0.0307)
N	4382	4382	4382	4382	4382	4382	4382	4382	4382	4382
R^2	0.154	0.085	0.170	0.206	0.187					

Estimations models with robust standard errors clustered at CWAC level. All models are adjusted for baseline covariates. For non-linear models results report marginal effects estimations. Control variables include information on the household's head (age, completed primary education, married), demographic characteristics of the household (n. of male and female members, n. of members per age group), housing conditions (toilet, wall, roof, water), household consumption and self-assessed poverty, shocks (drought, flood, illness, bread-earner death), district of residence.

[+] $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Annex 9. Direct impact of the zambia child grant on time preferences – non-linear model (probit)

	Impatient		KW200		KW300		KW400		KW600		KW800	
	Unadj. (1)	Adj. (2)	Unadj. (3)	Adj. (4)	Unadj. (5)	Adj. (6)	Unadj. (7)	Adj. (8)	Unadj. (9)	Adj. (10)	Unadj. (11)	Adj. (12)
T	-0.0480	**-0.0461**[+]	0.0103	0.00921	0.0458	0.0415	-0.00276	0.000153	-0.0156	-0.0113	0.000293	-0.00186
	(0.0298)	(0.0254)	(0.0158)	(0.0136)	(0.0373)	(0.0330)	(0.0283)	(0.0239)	(0.0195)	(0.0171)	(0.00799)	(0.00784)
N	2191	2191	2191	2191	2191	2191	2191	2191	2191	2191	2191	2072

Non-Linear weighted estimations models with robust standard errors clustered at CWAC level in parenthesis. Results report marginal effect. Unadjusted models do not include control variables, while Adjusted models include control variables such as, information on the household's head (completed primary education, married), housing conditions (toilet, wall, roof, water), household self-assessed poverty status, shocks (drought, flood, illness, bread-earner death), district of residence.

[+] $p < 0.10$, [*] $p < 0.05$, [**] $p < 0.01$, [***] $p < 0.001$

Annex 10. Direct impact of the zambia child grant on time preferences – difference-in-differences model

	Linear Model						Non-Linear Model					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	impatient	KW200	KW300	KW400	KW600	KW800	impatient	KW200	KW300	KW400	KW600	KW800
T	-0.0411	-0.0242	0.0642	0.00197	0.0107	-0.0136	-0.0292	-0.0523	0.0912	0.00695	0.0314	-0.0224
	(0.0299)	(0.0219)	(0.0472)	(0.0197)	(0.0180)	(0.00891)	(0.0626)	(0.0407)	(0.0878)	(0.0466)	(0.0340)	(0.0179)
wave	-0.274***	-0.130**	0.0345	0.313***	0.0238	0.000698	-0.199***	-0.119***	0.0949*	0.166***	0.0435	-0.0246
	(0.0792)	(0.0481)	(0.0826)	(0.0679)	(0.0417)	(0.0296)	(0.0538)	(0.0334)	(0.0447)	(0.0419)	(0.0301)	(0.0189)
T#wave	-0.00749	0.0320	-0.0247	0.00158	-0.0224	0.0116	-0.0105	0.0323	-0.0252	-0.00341	-0.0217	0.0102
	(0.0410)	(0.0271)	(0.0467)	(0.0283)	(0.0212)	(0.0110)	(0.0401)	(0.0263)	(0.0465)	(0.0283)	(0.0211)	(0.0117)
N	4382	4382	4382	4382	4382	4382	4382	4382	4382	4382	4382	4241
R^2	0.060	0.043	0.036	0.035	0.018	0.017						

Estimations models with robust standard errors clustered at CWAC level. All models are adjusted for baseline covariates. For non-linear models results report marginal effects estimations. Control variables include information on the household's head (age, completed primary education, married), demographic characteristics of the household (n. of male and female members, n. of members per age group), housing conditions (toilet, wall, roof, water), household consumption and self-assessed poverty, shocks (drought, flood, illness, bread-earner death), district of residence.

$^+ p < 0.10$, $^* p < 0.05$, $^{**} p < 0.01$, $^{***} p < 0.001$

Annex 11. Direct impact of zambia child grant on women's future expectations (only consistent respondents) – linear model

	Pessimist		1 year		3 years		5 years	
	Unadj. (1)	Adj. (2)	Unadj. (3)	Adj. (4)	Unadj. (5)	Adj. (6)	Unadj. (7)	Adj. (8)
T	-0.0875*** (0.0185)	-0.0872*** (0.0176)	0.103** (0.0338)	0.100** (0.0320)	0.0716** (0.0267)	0.0719** (0.0240)	0.0972*** (0.0210)	0.0961*** (0.0199)
N	2174	2174	2174	2174	2174	2174	2174	2174
R^2	0.025	0.044	0.013	0.031	0.008	0.038	0.021	0.041

Linear weighted estimations models with robust standard errors clustered at CWAC level in parenthesis. Unadjusted models do not include control variables, while Adjusted models include control variables such as, information on the household's head (age, completed primary education, married), demographic characteristics of the household (n. of male and female members, n. of members per age group), housing conditions (toilet, wall, roof, water), household consumption and self-assessed poverty, shocks (drought, flood, illness, bread-earner death), district of residence.

$^+ p < 0.10$, $^* p < 0.05$, $^{**} p < 0.01$, $^{***} p < 0.001$

Annex 12. Direct impact of zambia child grant on women's future expectations (only consistent respondents) – non-linear model

	Pessimist		1 year		3 years		5 years	
	Unadj. (1)	Adj. (2)	Unadj. (3)	Adj. (4)	Unadj. (5)	Adj. (6)	Unadj. (7)	Adj. (8)
T	-0.0907*** (0.0198)	-0.0882*** (0.0188)	0.102** (0.0333)	0.100** (0.0309)	0.0716** (0.0266)	0.0707** (0.0235)	0.0981*** (0.0214)	0.0942*** (0.0202)
N	2174	2174	2174	2174	2174	2174	2174	2174

Non-Linear weighted estimations models with robust standard errors clustered at CWAC level in parenthesis. Results report marginal effect. Unadjusted models do not include control variables, while Adjusted models include control variables such as, information on the household's head (completed primary education, married), housing conditions (toilet, wall, roof, water), household self-assessed poverty status, shocks (drought, flood, illness, bread-earner death), district of residence.

[+] $p < 0.10$, [*] $p < 0.05$, [**] $p < 0.01$, [***] $p < 0.001$

Annex 13. Direct impact of zambia child grant on women's future expectations (only consistent respondents) – difference-in-differences

	Linear Model				Non-Linear Model			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	pessimist	1 year	3 years	5 years	pessimist	1 year	3 years	5 years
T	-0.0175	-0.0128	0.00148	0.00474	0.129***	-0.141**	-0.0893*	-0.131***
	(0.0198)	(0.0210)	(0.0211)	(0.0208)	(0.0350)	(0.0439)	(0.0411)	(0.0380)
wave	-0.326***	0.138+	0.294***	0.310***	-0.199***	0.116**	0.171***	0.176***
	(0.0623)	(0.0732)	(0.0706)	(0.0673)	(0.0360)	(0.0433)	(0.0410)	(0.0390)
T#wave	**-0.0697****	**0.113****	**0.0704****	**0.0914****	**-0.138****	**0.124****	**0.0872****	**0.132****
	(0.0231)	(0.0285)	(0.0272)	(0.0253)	(0.0251)	(0.0281)	(0.0270)	(0.0261)
N	4341	4341	4341	4341	4341	4341	4341	4341
R^2	0.121	0.100	0.116	0.118				

Estimations models with robust standard errors clustered at CWAC level. All models are adjusted for baseline covariates. For non-linear models results report marginal effects estimations. Unadjusted models do not include control variables, while Adjusted models include control variables such as, information on the household's head (age, completed primary education, married), demographic characteristics of the household (n. of male and female members, n. of members per age group), housing conditions (toilet, wall, roof, water), household consumption and self-assessed poverty, shocks (drought, flood, illness, bread-earner death), district of residence.

$^+ p < 0.10, ^* p < 0.05, ^{**} p < 0.01, ^{***} p < 0.001$

Annex 14. Direct impact of zambia child grant on women's future expectations (all respondents) – non-linear model

	Pessimist		1 year		3 years		5 years	
	Unadj. (1)	Adj. (2)	Unadj. (3)	Adj. (4)	Unadj. (5)	Adj. (6)	Unadj. (7)	Adj. (8)
T	-0.0904*** (0.0197)	-0.0878*** (0.0186)	0.101** (0.0334)	0.0992** (0.0309)	0.0678** (0.0261)	0.0666** (0.0232)	0.0956*** (0.0214)	0.0920*** (0.0202)
N	2191	2191	2191	2191	2191	2191	2191	2191

Non-Linear weighted estimations models with robust standard errors clustered at CWAC level in parenthesis. Results report marginal effect. Unadjusted models do not include control variables, while Adjusted models include control variables such as, information on the household's head (completed primary education, married), housing conditions (toilet, wall, roof, water), household self-assessed poverty status, shocks (drought, flood, illness, bread-earner death), district of residence.

$^{+} p < 0.10$, $^{*} p < 0.05$, $^{**} p < 0.01$, $^{***} p < 0.001$

Annex 15. Direct impact of zambia child grant on women's future expectations (all respondents) – difference-in-differences

	Linear Model				Non-Linear Model			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	pessimist	1 year	3 years	5 years	pessimist	1 year	3 years	5 years
T	-0.0188	-0.0132	0.00132	0.00338	0.126***	-0.141**	-0.0834*	-0.130***
	(0.0197)	(0.0209)	(0.0210)	(0.0207)	(0.0347)	(0.0437)	(0.0412)	(0.0379)
wave	-0.322***	0.141+	0.294***	0.313***	-0.199***	0.113**	0.172***	0.173***
	(0.0619)	(0.0726)	(0.0710)	(0.0670)	(0.0357)	(0.0431)	(0.0411)	(0.0389)
T#wave	**-0.0681**	**0.113***	**0.0674***	**0.0908***	**-0.137***	**0.124***	**0.0815**	**0.129***
	(0.0230)	(0.0283)	(0.0271)	(0.0253)	(0.0249)	(0.0280)	(0.0270)	(0.0259)
N	4382	4382	4382	4382	4382	4382	4382	4382
R^2	0.120	0.101	0.112	0.117				

Estimations models with robust standard errors clustered at CWAC level. All models are adjusted for baseline covariates. For non-linear models results report marginal effects estimations. Control variables include information on the household's head (age, completed primary education, married), demographic characteristics of the household (n. of male and female members, n. of members per age group), housing conditions (toilet, wall, roof, water), household consumption and self-assessed poverty, shocks (drought, flood, illness, bread-earner death), district of residence.

$^+ p < 0.10, ^* p < 0.05, ^{**} p < 0.01, ^{***} p < 0.001$

Annex 16. Mediated impact of zambia child grant on women's economic inclusion mediated by future expectations – one year

	Linear Model					Non-Linear Model				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	one_year	fem_NFE	asset_fNFE	save	qty. save	one_year	fem_NFE	asset_fNFE	save	qty. save
T	0.0997**	0.109***	15.14***	0.236***	48.61***	0.0992**	0.104***	15.31***	0.228***	49.97***
	(0.0320)	(0.0317)	(4.380)	(0.0315)	(10.63)	(0.0309)	(0.0302)	(4.506)	(0.0283)	(10.86)
one_year		0.0857***	-1.058	0.127***	36.84***		0.0974***	-1.502	0.135***	35.01***
		(0.0226)	(3.545)	(0.0321)	(8.115)		(0.0248)	(3.717)	(0.0345)	(7.135)
Direct Impact		**0.109***	**15.14***	**0.236***	**48.61***		**0.104***	**15.31***	**0.228***	**49.97***
Mediated Impact		**.0085**	-.105	**.013***	**3.67**		**.009***	-.149	**.013***	**3.47***
Total Impact		**0.117**	15.03	**0.249***	**52.28***		**0.113***	15.16	**0.241***	**53.44***
N	2191	2191	2191	2191	2190	2191	2191	2191	2191	2190
R^2	0.031	0.082	0.027	0.104	0.059					

Estimations models with robust standard errors clustered at CWAC level. All models are adjusted for baseline covariates. For non-linear models results report marginal effects estimations. Control variables include information on the household's head (age, completed primary education, married), demographic characteristics of the household (n. of male and female members, n. of members per age group), housing conditions (toilet, wall, roof, water), household consumption and self-assessed poverty, shocks (drought, flood, illness, bread-earner death), district of residence. For the variable "quantity saved" one observation has been excluded as it was a source of bias being an outlier.

[+] $p < 0.10$, [*] $p < 0.05$, [**] $p < 0.01$, [***] $p < 0.001$

Annex 17. Mediated impact of zambia child grant on women's economic inclusion mediated by future expectations – three years

	Linear Model					Non-Linear Model				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	three_year	fem_NFE	asset_fNFE	save	q.ty save	three_year	fem_NFE	asset_fNFE	save	q.ty save
T	0.0688**	0.112***	14.86**	0.244***	50.47***	0.0666**	0.107***	15.00***	0.236***	51.70***
	(0.0237)	(0.0317)	(4.402)	(0.0317)	(10.85)	(0.0232)	(0.0302)	(4.497)	(0.0285)	(10.98)
three_year		0.0781**	2.463	0.0685*	26.43***		0.0913**	2.544	0.0744*	26.58***
		(0.0249)	(4.232)	(0.0337)	(7.044)		(0.0284)	(4.231)	(0.0363)	(6.897)
Direct Impact		0.112***	14.86**	0.244***	50.47***		0.107***	15.00***	0.236***	51.70***
Mediated Impact		.005**	.169	.005**	1.81**		.006**	.169	.005**	1.76**
Total Impact		0.117**	15.03	0.249**	52.28***		0.113**	15.17	0.241**	53.46***
N	2191	2191	2191	2191	2190	2191	2191	2191	2191	2190
R^2	0.035	0.080	0.027	0.093	0.056					

Estimations models with robust standard errors clustered at CWAC level. All models are adjusted for baseline covariates. For non-linear models results report marginal effects estimations. Control variables include information on the household's head (age, completed primary education, married), demographic characteristics of the household (n. of male and female members, n. of members per age group), housing conditions (toilet, wall, roof, water), household consumption and self-assessed poverty, shocks (drought, flood, illness, bread-earner death), district of residence. For the variable "quantity saved" one observation has been excluded as it was a source of bias being an outlier.

$^+ p < 0.10$, $^* p < 0.05$, $^{**} p < 0.01$, $^{***} p < 0.001$

Annex 18. Mediated impact of zambia child grant on women's economic inclusion mediated by future expectations – five years

	Linear Model					Non-Linear Model				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	five_year	fem_NFE	asset_fNFE	save	qty. save	five_year	fem_NFE	asset_fNFE	save	qty. save
T	0.0942***	0.114***	14.96**	0.238***	50.23***	0.0920***	0.109***	15.10***	0.230***	51.46***
	(0.0198)	(0.0320)	(4.455)	(0.0316)	(11.00)	(0.0202)	(0.0306)	(4.566)	(0.0283)	(11.11)
five_year		0.0358	0.700	0.110***	21.86**		0.0462	0.685	0.124***	21.74**
		(0.0294)	(5.484)	(0.0296)	(6.557)		(0.0333)	(5.463)	(0.0354)	(6.661)
Direct Impact		**0.114***	**14.96**	**0.238***	**50.23***		**0.109***	**15.10***	**0.230***	**51.46***
Mediated Impact		**.003+	.065	**.01***	**2.05***		**.004+	.063	**.011**	**1.99***
Total Impact		**0.117***	15.02	**0.248***	**52.28***		**0.113***	15.16	**0.241***	**53.46***
N	2191	2191	2191	2191	2190	2191	2191	2191	2191	2190
R^2	0.041	0.075	0.026	0.096	0.056					

Estimations models with robust standard errors clustered at CWAC level. All models are adjusted for baseline covariates. For non-linear models results report marginal effects estimations. Control variables include information on the household's head (age, completed primary education, married), demographic characteristics of the household (n. of male and female members, n. of members per age group), housing conditions (toilet, wall, roof, water), household consumption and self-assessed poverty, shocks (drought, flood, illness, bread-earner death), district of residence. For the variable "quantity saved" one observation has been excluded as it was a source of bias being an outlier.

[+] $p < 0.10$, [*] $p < 0.05$, [**] $p < 0.01$, [***] $p < 0.001$

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