COMPARATIVE COST-BENEFIT ANALYSIS OF FOUR POVERTY REDUCTION APPROACHES IN GHANA

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Academic Abstract

This paper conducts a comparative cost-benefit analyses of four well known policy instruments designed to boost livelihoods and improve circumstances of the poor: poverty graduation programs, cash transfers, microfinance and social housing. The results indicate that poverty graduation is likely to be the most effective use of funds, with a benefit-cost ratio (BCR) around 1.8 at an 8% discount rate. This is followed by increasing cash transfers under the Livelihood Empowerment and Poverty (LEAP) program and expanding microfinance, which have similar BCRs of 1.6. Social housing offers large benefits but the BCR is likely to be around 1. There is strong evidence for the BCR estimates of poverty graduation following the evidence from rigorous randomized controlled experiments from the Northern region, one of the three regions where more than 50% of households live in poverty. Graduation programs may be more effective both from a long-term perspective. The results from this study on Ghana are similar to results in other country and regional prioritization projects conducted by the Copenhagen Consensus Center.

Key Words: cost benefit, graduation, housing, microfinance, poverty

Policy Abstract

The Problem:

- Poverty remains a problem. There is overall reduction in national poverty over the last 3 decades, but this masks the persistent spatial concentration of poverty and high inequality.
- National poverty is at 23.4% but unevenly distributed with 7.8% urban poverty and 39.5% rural poverty. In addition, poverty appears to be concentrated in the three northern regions where 50% of households are poor.
- Poverty in the Upper East, Northern Region and Volta Regions has increased in the last 4 years. Inequality which was at 42% in 2005 is now 43%.
- Poverty and inequality are general problems in the subregion. The spatial concentration of poverty is equally a challenge as well in countries in the sub region.

Intervention- Poverty Graduation Programme

Overview:

- The program starts with skills and asset transfers, typically livestock to provide the beneficiary with both the means and knowledge to generate an ongoing, sustainable income. This is followed with a modest cash transfer to stabilize consumption, group coaching to impart life skills, support to build savings, access to or education in health services and community mobilization to integrate the poor into the wider community. The programme will be implemented primarily in the three Northern regions and in selected rural communities in Ghana based on their poverty levels.
- It builds on a similar program implemented amongst 666 households in the Northern region of Ghana

Implementation Considerations:

- The program will be implemented by Ministry of Local Government and Rural Development in collaboration with the Ministry of Finance and Economic Planning

- Since the intervention is very costly, around GHc 9,600 per beneficiary, proper targeting of beneficiaries needs to be considered carefully and should be done with help of the local community
- Competing programs by government or NGOs might diminish the impact of graduation if they provide an incentive for households to abandon the program in favour of superior income generating opportunities.

Costs and Benefits

Costs

- The total cost per beneficiary is testimated at GHc 9,633 of which 75% accounts for the direct cost (made up of 60.6% covering items as materials, training, professional fees and 14.5% to cover asset and cash transfer) and the remaining 25% covers the start-up and indirect costs.

Benefits

- The total benefits per beneficiary are estimated to be GHc 17,574. These benefits are solely attributable to consumption gains and asset accumulation. Additional benefits such as food security, political involvement and mental health are not incorporated into this value.

Intervention - Increased transfers under LEAP

Overview:

- The program envisages a 7% increase in the stipend provided under LEAP. This would be equal to GHS 160 per year.
- The intervention would be targeted in regions or areas where the cost of living is higher than the average

Implementation Considerations:

- The criteria for which beneficiaries are entitled to higher payments needs to be carefully considered, with objective and measurable criteria (such as location of primary residence).

Costs and Benefits

Costs

- The total cost of increasing the payment is GHc 160 per year per eligible beneficiary

Benefits

- The intervention would lead to a yearly increase in consumption of GHc 255.

Intervention- Expanding microfinance

Overview:

The intervention considers expanding microfinance to underserved populations in Ghana. The costs and benefits below consider an average sized loan of GHc 3920.

Implementation Considerations:

- The intervention will be administered and managed by the Microfinance and Small Loans Centre (MASLOC).

Costs and Benefits

Costs

- The total cost of administering the microfinance in year one is given as GHc 1077

Benefits

- The total benefits accruing from the consumer and producer gains amount to GHc 1679

Intervention- Social Housing

Overview:

- Two types of housing structures are considered for this intervention. The first is the provision of a two bedroom semi-detached house built from primarily locally sourced and produced building materials. The second is the building of high rise apartments (one and two bedrooms) to replace improper structures in poorly planned urban areas and slum dwellings. These facilities will be built primarily for the urban poor dwellers who typically live in crowded, improper or slum habitats.

Implementation Considerations:

- Ideally the high rise apartments will be built as in-situ slum redevelopment. However in cases where slum areas are not deemed fit for residential dwelling the construction is moved to more environmentally appropriate land environs.
- The intervention will be administered and managed by the Ministry of Works and Housing.

Costs and Benefits

Costs

- The total cost of the interventions are; GHS 229, 265 for a 2 bedroom semi-detached house, GHS 212,185 for a 2 bedroom apartment (high rise) and GHS 162,188 for a 1 bedroom apartment (high rise). For both types of housing structures the cost items are similar and consist of the following; the cost of land, the cost of providing infrastructure (e.g. water and sewerage, electricity, road) the compliance cost, the development cost and the construction cost.

Benefits

- The present value of the total benefits are approximately GHS 273,000 for a 2 bedroom semi detached house, GHS 205,000 for a 2 high rise bedroom apartment and GHS 135,000 for a 1 bedroom high-rise bedroom apartment.

BCR Table

Intervention	Benefit per beneficiary (GHc)	Cost per beneficiary (GHc)	BCR	Quality of Evidence
Poverty graduation program	17,574	9,633	1.8	Strong
Increase cash transfers under LEAP	255	160	1.6	Medium
Microfinance	1,679	1,077	1.6	Strong
Social Housing	205,425	201,213	1.0	Limited

Note: Social housing figures is a simple average of the costs and benefits of the three types of housing. All figures assume an 8% discount rate.

1. Introduction

Ghana's development story since 2000 is one characterized by sustained economic growth and a dramatic reduction in poverty. According to the Ghana Statistical Service (2007, 2018), extreme poverty levels have fallen by almost 80% since 1998/1999 when 39.5% of households lived below the national extreme poverty line.[1] Latest figures from 2016/2017 show only 8.2% of households in the same position. Poverty reduction has been underpinned by robust economic growth, with GDP per capita increasing 88% in real terms over the same period (World Bank, 2019).

Nevertheless, there are emerging challenges in the fight against extreme poverty. In the period between 2012/2013 and 2016/2017 extreme poverty levels barely changed, dropping only 0.2 percentage points. The national success story also masks regional variation. The rural savannah area contains 75% of the country's extreme poor and exhibits levels of extreme poverty reaching 36.1% (Ghana Statistical Service, 2018). As Gibson (2018) has argued for Vietnam and India, extreme poverty is likely to be persistent as a country's extreme poor become increasingly concentrated in regional and ethnic clusters. It appears that Ghana may be experiencing a similar phenomonenon. Future poverty reduction efforts may not be as easy as it has been so far.

Therefore, it is important to ascertain the most effective ways to address extreme poverty, given limited resources. This paper undertakes comparative cost-benefit analyses of four well known policy instruments designed to boost livelihoods and improve circumstances of the poor: poverty graduation programs, cash transfers, microfinance and social housing. We use a mixture of formal quantitative approaches, buttressed by theoretical arguments, to conduct the cost-benefit analyses. Our data come mainly from experiments and evaluations conducted in Ghana although the quality of evidence is not consistent across interventions.

[1] Ghana's definition of extreme poverty differs slightly from the international definition used by the World Bank and others of $1.90 PPP per day in 2011 figures. Nevertheless, more conventional measures of poverty depict a similar trend with estimated 35.7 percent of people living in extreme poverty in 1998, falling to 13.3 in 2016 (World Bank, 2019).

The results indicate that poverty graduation is likely to be the most effective use of funds, with a benefit-cost ratio (BCR) of 1.8 at 8% discount rate. This is based on rigorous randomized controlled evidence from the Northern region, one of the three regions where more than 27% of households live in extreme poverty, so the evidence can be considered strong. Increasing cash transfers under the Livelihood Empowerment and Poverty (LEAP) program might also have a similar BCR of 1.6, though the evidence of impact is less clear. Expansion of microfinance also has a central BCR of 1.6. Social housing is likely to have a BCR around 1.

The BCRs of the programs mask large difference in their unit costs. Graduation costs GHS 10,600 per individual (Banerjee et al. 2015). Increasing the cash transfer under LEAP would cost around GHS 160 for one household for one year. Microfinance costs GHS 1077 per loan, while social housing costs between GHS 160,000 to 230,000 depending on the type of housing. This difference in unit costs has implications for the reach of each potential intervention given a fixed budget. For example, the government could bring one household through graduation or provide 66 households with increased transfers under LEAP for one year. However, in the long run, it may be less resource intensive for government to spend money on graduation rather than ongoing cash transfers, if the former can reduce households' dependency on state support.

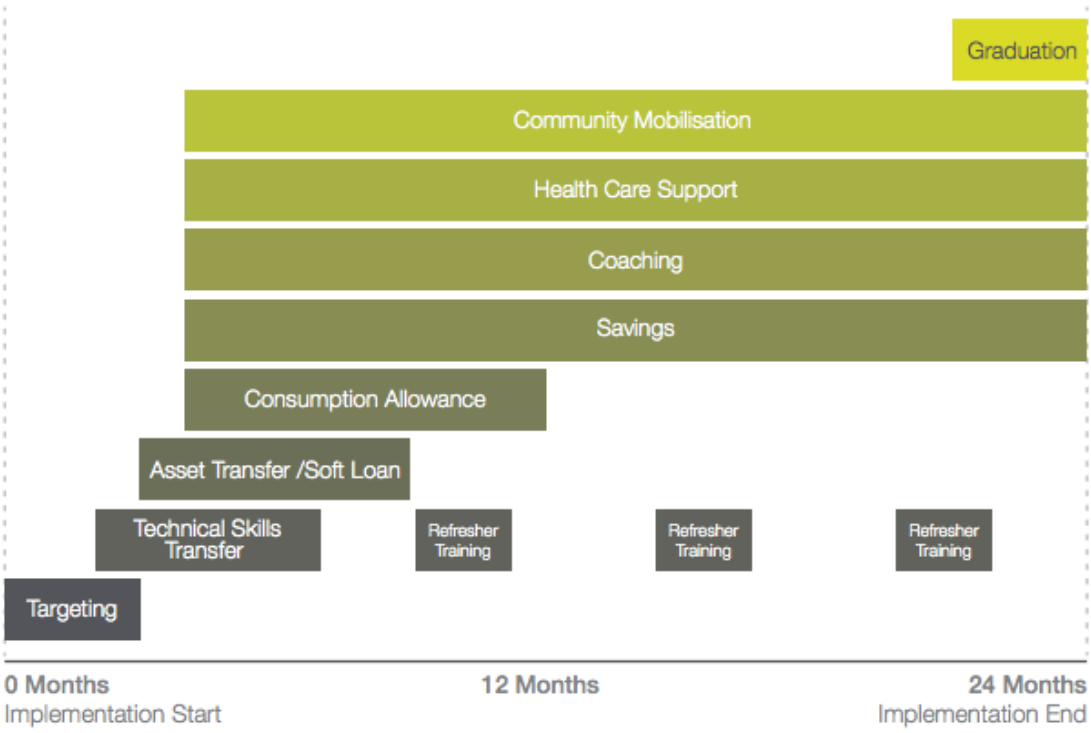
Within the broader context of the Ghana Priorities project, none of the poverty reduction programs examined here are likely to be one of the 'best buys' for the country. This is similar to results in other country and regional prioritization projects conducted by the Copenhagen Consensus Center. Singular 'solutions' like (modest) cash transfers and microfinance, while offering some benefits, do not appear to sustainably lift incomes. More involved approaches, such as the graduation program do 'work' in the sense that there are substantial short term (Banerjee et al. 2015) and long-term impacts (Banerjee et al. 2017, Bandiera et al. 2017) with undoubtedly transformative effects for the beneficiaries. One could potentially argue the same for the provision of housing which provides an enduring asset of significant value. However, both are very expensive to implement. The complexity and cost of the solutions do not lend themselves to large BCRs.

2. Poverty Graduation Program

2.1 Description of intervention

Poverty graduation programs were first developed by the Bangladeshi NGO BRAC as way to assist the poorest of society to escape poverty. The 24-month program involves a combination of intensive, inter-related and sequenced interventions to boost livelihoods and other skills such that beneficiaries can eventually 'graduate' out of poverty (BRAC, 2017). A schematic of poverty graduation program is depicted below. After identifying the appropriate beneficiaries, the typical program starts with skills and asset transfers, typically livestock. These are designed to provide the beneficiary with both the means and knowledge to generate an ongoing, sustainable income. Refresher training is provided throughout the program. Shortly after the asset transfer, a raft of supportive interventions is implemented: a modest cash transfer to stabilize consumption and reduce the risk of selling the asset; one-to-one and group coaching to impart life skills and build confidence; support to build savings including providing a bank account if necessary; health support either in the form of health education and / or providing access to health services; and community mobilization to integrate the poor into the wider community (BRAC, 2017; Banerjee et al. 2015).

Figure 1: Overview of poverty graduation program sequencing



Source: BRAC (2017)

2.2 Relevant literature

The most relevant study for this analysis is a six-country randomized control trial of poverty graduation programs conducted across the world, including Ghana (Banerjee et al. 2015). In this study, researchers partnered with local implementation partners to deliver poverty graduation to 3,635 households. In Ghana, the program was delivered to 666 households in the Northern region. In all but one country, the poverty graduation program was able to increase beneficiary consumption and asset accumulation. In pooled analyses, the results indicate that overall the program improved consumption by 0.12 s.d. (or ~5%), food security by 0.11 s.d., asset accumulation by 0.25 s.d., financial inclusion by 0.21 s.d. and mental health by 0.07 s.d. The component in Ghana saw increases in consumption, food security, asset accumulation, financial inclusion, incomes and revenue and political involvement. Overall, estimated consumption increased by USD PPP 332 (2014 figures) three years after the intervention started.

While the benefits are substantial, the costs of the program are also large. Banerjee et al. (2015) report costs ranging from USD PPP 1257 in India to USD PPP 5150 in Pakistan (2014 figures). In Ghana reported costs were USD PPP 4672. The authors report a BCR of 1.3 for Ghana at a 5% discount rate assuming that the year 3 boost to income is sustained in perpetuity.

There have been analyses of graduation programs in other contexts with similar results during or shortly after program completion. Bandiera et al. (2013) estimate the impact of graduation in Bangladesh using RCT methods and identify an increase in consumption of 8%, and a reduction in extreme poverty of 11% four years after the program started. Huda and Simanowitz (2010) conduct a before-after analysis of a local variant of the graduation program in Haiti and note an 18% reduction (89 pp -> 73 pp) in extreme poverty, a 58% reduction (98pp -> 41pp) in food insecurity and 160% increase (27pp -> 70pp) in children going to school two years after program initiation, among other benefits. Sabates and Devereux (2015) describe the impact after the first year of a graduation program in Rwanda and note that beneficiaries scored 1.5 to 4.8 points higher relative to non-beneficiaries on an 8 point deprivation index designed to measure food security and ability to afford health services. For example, adults consumed 0.5 more meals and children 0.8 more meals per day relative to baseline, whereas control group meal consumption barely changed (Devereaux et al., 2018). Beneficiaries also had more livestock, consumption assets and savings. Another program in Burundi demonstrated a modest increase in income from 288,00 to 297,000 FBus while control group incomes fell from

313,000 to 272,000 FBus in the same period, for a difference-in-difference effect of 13% (Deverex et al., 2015). Other indicators such as food security, asset accumulation and education also showed improvements for beneficiaries relative to control (Devereaux et al., 2018).

There have also been several studies that demonstrate persistence or even improvements in impacts from the program over longer time horizons. Banerjee et al. (2016) follow up recipients from West Bengal in the six-country study, and show that beneficiary consumption *in excess of the control group consumption* is more than twice as high seven years after asset transfer as it was 30 months after asset transfer. In other words, the poverty status of the intervention group continued to improve and moved even further away from control, even during a period where control group consumption was rising. Bandiera et al. (2017) show that recipients of the program in Bangladesh have consumption in excess of control group at least as high seven years after asset transfer as they were four years after asset transfer. The authors correctly note that this finding is colored by the fact that individuals in the control group were subsequently treated after the initial experiment ended requiring imperfect adjustments to assess the true counterfactual. The authors estimate a BCR for graduation in Bangladesh of 3.2, at a 5% discount rate.

While these are many instances of graduation leading to increased consumption, food security and asset accumulation (among other benefits), there have also been a handful of less successful implementations. Banerjee et al. (2015) document that recipients in Honduras arm of their six-country study did not see improvements in consumption. This was mainly because of disease that essentially killed much of the transferred livestock (chickens) that were meant to generate income. Bauchet et al. (2015) describe an RCT implementation in the Indian state of Andhra Pradesh that showed no impact. The authors hypothesize that this was partially the result of a tight labor market and high existing beneficiary debt levels. Many beneficiaries found it economically preferable to sell the asset (to pay down debt) and then switch to wage labor, which potentially earned the household more than participation in the program. Lastly, Pain et al. (2015) follow up a sample of beneficiaries from Haiti's implementation in 2012 (three years after the end of the program analyzed by Huda and Simanowitz (2010)). They find 36.2 percent of beneficiaries improved or sustained their position from endline, but the remaining regressed. Between 2009 endline and 2012 follow up Haiti experienced a devastating earthquake, so this finding of large-scale regression is perhaps unsurprising. Unfortunately, the lack of control group makes it impossible to determine if participation in the program might have been better for households relative to not participating. \

Overall the evidence points to robust short and long term benefits from graduation programs with improvements in consumption, asset accumulation and food security. However, the costs are also substantial and cost-benefit analyses of six-country study (Banerjee et al. 2015) and the Bangladesh experience (Bandiera et al. 2017) report BCRs at a 5% discount rate between 1.3 and 3.2 (excluding Honduras which has a negative BCR). Cost-benefit analyses of graduation programs conducted under Copenhagen Consensus Center country projects have reported similar prospective BCRs for Bangladesh (BCR = 2.3, Misha and Sulaiman, 2016), Haiti (BCR = 3.7 Serent, 2016), and the Indian states of Rajasthan and Andhra Pradesh (BCR = 3.5, Sulaiman and Murigi, 2017a, 2017b).

2.3 Cost-benefit analysis

This cost benefit analysis draws from the Ghana specific findings reported by Banerjee et al (2015) with several adjustments. Since this is a prospective analysis with a base year of 2018, all figures are inflated to 2018 values and converted to cedis. Secondly, we include long-term effects as studies have demonstrated persistent consumption gains. At the time of writing a long term follow up to the Ghana experience of graduation was underway, though results were not yet available. Therefore, in lieu of better evidence we assume graduation recipients experience a consumption gain similar to that documented in West Bengal i.e. 4 years after program endline consumption is twice as large as it was at endline (3 years after asset transfer). To estimate values in the intervening years, we assume a constant growth rate in consumption between years 3 and years 7. Lastly, we assume consumption continues for an additional 23 years increase beyond 7 years for a total of 30 years. This is based on an assumption that the average beneficiary in the program is 30 years old and continues working until 60. Between years 8 and 30, we assume annual consumption gain increases in line with projected real GDP per capita growth.[2]

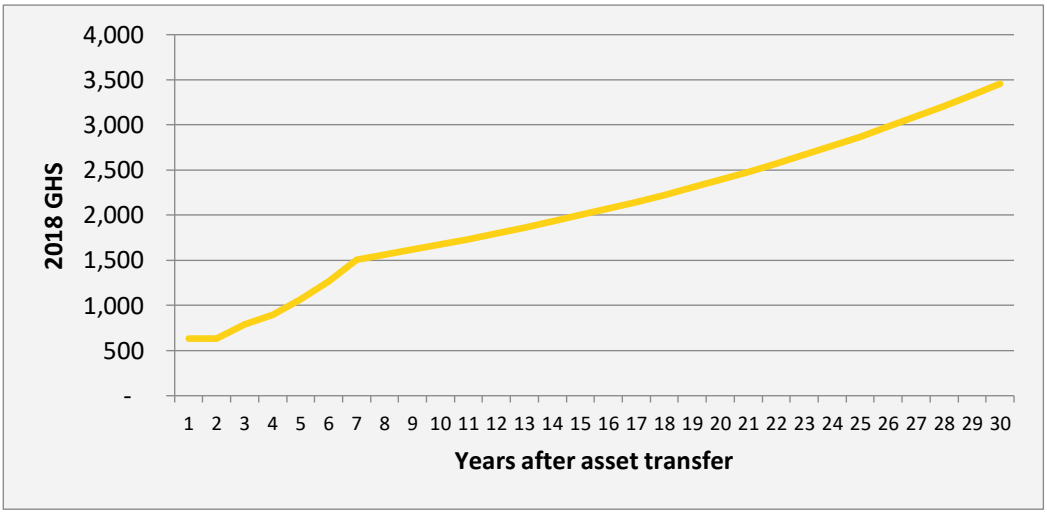
Banerjee et al. (2015) report unit program costs equal to 2014 USD PPP 4672 for Ghana. This is equivalent to 2018 GHS 10,600 after making the necessary exchange and inflation adjustments. Given the nature of the graduation sequencing with asset, cash and skill transfers

[2] This is slightly different to Banerjee et al. (2015), who assume perpetual consumption gains with no real growth.

up front, we assume 75% of the costs are incurred in year 1 while 25% of the costs are incurred in year 2 of the program.

The estimated consumption profile of beneficiaries, based on the above assumptions is depicted below. It starts at GHS 663 and rises to GHS 3,456 by the end of the time period.

Figure 2: Estimated consumption gain from Graduation Program participation over time



The present value of consumption benefits is equal to GHS 17,574 at an 8% discount rate. Equivalent values for 5% and 14% discount rates are GHS 26,544 and GHS 9,157.[3]

A summary of costs, benefits and BCRs is depicted in the table below.

Table 1 Costs and Benefits Graduation

	Cost per beneficiary (GHS)	Benefit per beneficiary (GHS)	BCR
5%	9,975	26,544	2.7
8%	9,633	17,574	1.8
14%	9,013	9,157	1.0

[3] At endline (year 3) Banerjee et al. (2015) also document small increases in asset values and savings of 15 and 16.8 USD PPP. Including these in the benefits calculation does not change the BCR at the first decimal place.

The results indicate that at an 8% discount rate, the expected BCR of graduation program in Ghana is 1.8. The result is sensitive to the choice of discount rate, which is unsurprising given the assumed long-lived nature of the benefits.

2.4 Sensitivity Analysis

In the preceding analysis, we assumed that consumption benefits double between year 3 and year 7 (following Banerjee et al. 2016), and thereafter benefits continue growing with projected real GDP per capita for another 23 years. Of these assumptions, only the benefits up to year 3 are drawn directly from Ghana. To test the sensitivity of results we vary the remaining assumptions. In the following we report results at the 8% discount rate.

The first scenario assumes that benefits between year 3 and year 7 do not double (19% per annum), but instead grow with projected real GDP per capita (3.6% per annum). The BCR under this scenario is 1.3 at an 8% discount rate. Second, we vary the time horizon of benefits, stopping after 10 and 20 years (as opposed to 30 for the main analysis). Assuming a 10-year benefit horizon, the BCR is 0.7. Under a 20 year time horizon the BCR is 1.4.

2.5 Discussion

The results indicate that the graduation program can have significant and transformative impacts on beneficiary households. The evidence for costs and near term benefits comes from a randomized control trial in the Northern region of Ghana. We assess this evidence as very strong. The quality of evidence for longer-term impacts is less clear, since there are no Ghana specific results. We note that in the two cases where long-term data was collected, the indications are that graduation can sustain or even increase consumption over time. Overall we assess the quality of evidence as strong. It is quite clear that graduation is a very expensive intervention, costing close to GHS 10,000. As a point of comparison, the current LEAP stipend is roughly GHS 40 per beneficiary household per month (Angeles et al. 2017). Current per capita health expenditure in Ghana is around GHS 400 (World Bank, 2019). Crudely speaking, and ignoring discounting, the same funds spent on graduating one household, could sustain a LEAP beneficiary for twenty years or health expenditure for one citizen for 25 years. The large unit cost of graduation will likely make it difficult to expand the program significantly. One imagines that if it were to be rolled out, it would be best to selectively target those in the extremest of poverty conditions and with limited prospects for self-graduation.

4. Increase cash transfers under LEAP to account for cost-of-living differences

3.1 Description of intervention

Ghana's Livelihood Empowerment Against Poverty program (or LEAP), first implemented 2008, provides ongoing cash grants and health insurance to poor households fulfilling the program's eligibility criteria i.e. that the household has a member who is a) aged 65 years or b) severly disabled or c) orphaned or considered a vulnerable child or d) pregnant or has a young child.

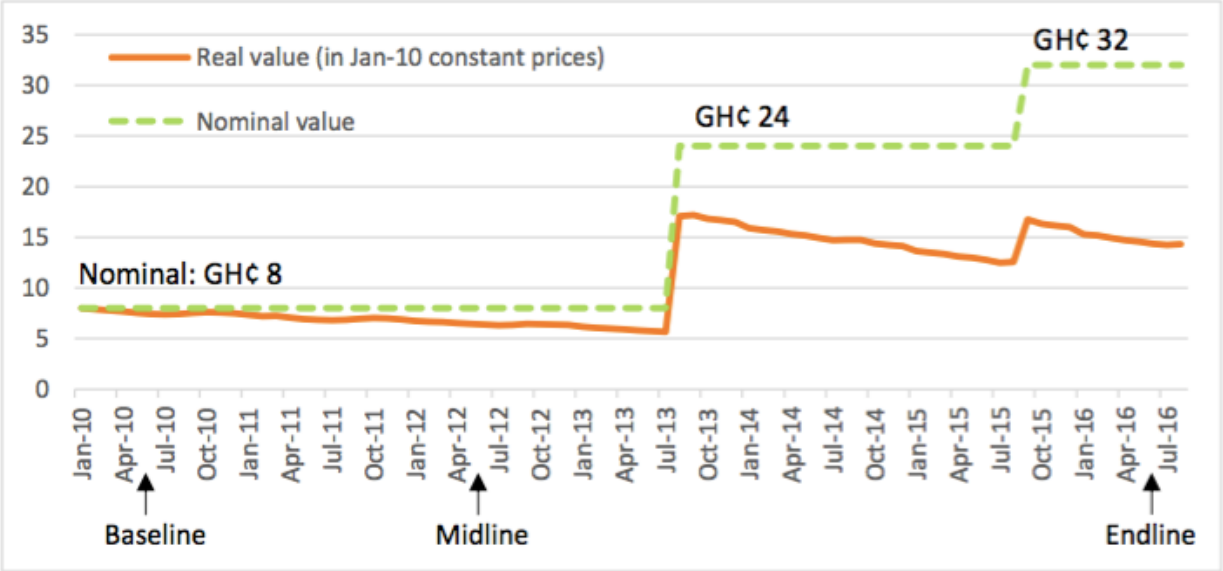
During the process of setting the research agenda for the *Ghana Priorities*, a key intervention highlighted was to 'increase the stipend under LEAP to account for cost-of-living differences'. To accurately assess the costs and benefits of this would require understanding the gradient between the size / purchasing power of the transfer and the subsequent effect on consumption, if any. We take advantage of historical increases in the LEAP allowance and their differential impacts on consumption. These historical jumps in LEAP allowance were universal, (i.e they were for all LEAP beneficiaries) rather than being targeted to more costly regions. Nevertheless, these served to increase the purchasing power of the LEAP cash transfer, and we argue should approximate the effect for a targeted increase to account for cost-of-living.

3.2 Literature Review

The most important studies for this cost-benefit analysis are midline and endline reports for a long run evaluation of the LEAP program from January 2010 to July 2016 (Handa et al. 2013; Angeles et al. 2017). A randomized controlled trial style evaluation was not possible and so the authors adopted a propensity score matching (PSM) design that took advantage of an unrelated, but relevant survey effort conducted by ISSER and University of Yale that captured non-beneficiaries at baseline (Handa and Park, 2011). A sample of these beneficiares from the ISSER group were then re-surveyed at 2012 and 2017 to act as the 'control' group against which outcomes for LEAP beneficiares could be compared.

Before turning to the results, it is important to note that the reports identified that the size of cash transfers, as a percentage of baseline consumption increased over time (as well as becoming more reliable). Figure 3 below shows the pathway of cash transfer size for one beneficiary during the course of the evaluation.

Figure 3: Size of cash transfer for one beneficiary under LEAP, 2010-2016



Source: LEAP Endline report. Angeles et al. (2017)

The figure shows that initially the cash transfer was only GHS 8. A large, 300% jump occurred in July 2013 to GHS 24. While there was another 33% increase in October 2015 to GHS 32, this mainly served to correct erosion in the real value of the transfer over the past two years. The reports note that at midline in May 2012, the transfer equaled 11% of baseline consumption on average in real terms. At endline, the transfer equaled 18% of consumption on average in real terms (Angeles et al. 2017). Note that these reported values do not exactly match the ones from the graph from Figure 1. This is because that figure represents the value of cash transfer associated with having one beneficiary in a household, and many households in reality had more than one beneficiary warranting a higher average payment.

The results of the evaluation paint a complex picture of program effect. At endline, the PSM results showed that there was no difference in consumption between LEAP beneficiaries and non-beneficiaries from the ISSER database. Taken at face value, this suggests that LEAP had no discernible impact on consumption and the BCR of LEAP (or any increases in the size of the transfers) would be anchored around unity – before considering transaction costs or second order effects.

However, additional analyses conducted by the researchers indicated that the constructed control group experienced an extreme and unusual growth in consumption during the period 2010 and 2012, equivalent to three times GDP per capita growth during the same period and

two times consumption growth of the poorest quintile from Ghana Living Standards Surveys (GLSS). These findings call into question the appropriateness of the comparator group.

The researchers therefore assessed alternative benefit measures from LEAP using a counterfactual of GDP per capita growth, assuming the control group had the same initial starting consumption as LEAP beneficiaries, and an alternative where they had starting consumption equivalent to the lowest quintile from GLSS 6. In this case midline consumption difference-in-difference demonstrated an effect of 22% boost and endline consumption was 33% larger due to LEAP (average over two scenarios). Remembering that for the purposes of this cost-benefit analysis, the difference between midline and endline is the variable of interest (to assess likely impacts of increases in the real value of the transfer), the results suggest a boost of 11% in consumption between 2012 and 2017 after the cash transfer increased.

Besides consumption, the endline report also documented other impacts from LEAP. The study shows a 9.9 pp boost to agricultural activities, an increase in agricultural labor and use of seeds (but a reduction in the use of improved seeds) and an increase in agricultural asset ownership. Overall agricultural production value increased substantially, with a 66% boost, after the transfer value increased. The boost in the transfer value had no discernible impact on enrolment outcomes, but reduced correct grade for age for girls aged 5-13 and all children aged 13-17 years. There was no impact on child labor but an increase in child health expenditure. Lastly, subjective well-being was unchanged between midline and endline, and there was a 17 pp increase in the probability of a LEAP house having a cement floor. It is hard to discern a consistent story from these changes, and given that so many variables were measured in the report, it is likely that some of these significant effects are actually spurious. Overall, it appers the increase in the cash stipend under LEAP did enhance agricultural activities – and is potentially the pathway that led to an increase in household consumption – but it seems unlikely there were impacts in any other aspects of LEAP beneficiaries' lives.

3.3 Cost-benefit analysis

Given the impacts outlined above, the cost benefit analysis of an increase in cash transfer value can be straightforwardly estimated. Between midline and endline, the cash transfer provided under LEAP increased by 7% in real terms, as a percentage of initial household consumption. Over the same time period, beneficiary household consumption increased by 11% in real terms. Therefore, one simple calculation of the BCR is 11% / 7% = 1.6, assuming the consumption boost is instantaneous with the change in transfer. Different calculations may account for a

delay in consumption boost, however we do not have sufficient data to identify this pathway. Notwithstanding significant uncertainty in the benefits measurement, this suggests that boosting cash transfers under LEAP to account for cost-of-living differences can have a modest long-term impact on consumption.

To situate these percentage figures within the current Ghanaian context, we provide an illustrative estimation of costs and benefits of a program to increase LEAP transfers to account for cost-of-living in certain high cost regions. The GLSS 7 notes regional variation in cost-of-living and notes higher costs for Greater Accra, Western, Central, Volta and Northern region relative to the median region (see Table 2.2 of the GLSS 7 report). Detailed breakdown of LEAP beneficiaries by region is unavailable so we assume that the distribution follows the national pattern of extreme poor. Together these regions account for 54.4% of the extreme poor in Ghana, with 37.5% in Northern region alone (Ghana Statistical Service, 2017). Given approximately 150,000 beneficiary households under LEAP this implies a target population of 81,600 households for increased transfers.

According to GLSS 7, the poverty line is GHS 982 per adult equivalent per year. Handa et al. (2014) show that there are 2.08 adults and 1.75 children per recipient household. Using the OECD formula for calculating adult equivalents suggests 2.33 adult equivalents per household. The poverty consumption level for a household is therefore GHS 2,289 per year. Assuming an increase in transfer for beneficiaries in these regions equivalent to 7% of household consumption for cost-of-living leads to a cash transfer of GHS 160 per year or GHS 13.35 per month. Across 81,600 households this implies an outlay of GHS 13m per year. The benefit in terms of consumption increase would equal GHS 255 per year or GHS 21m.

Table 3: Illustrative costs and benefits for a 7% increase for 81,600 LEAP beneficiaries

Discount rate	Costs per year (GHS, millions)	Benefits per year (GHS, millions)	BCR
5%, 8% and 14%	13	21	1.6

3.4 Discussion

The preceding analysis suggests that increasing the stipend under LEAP could lead to modest longer-term consumption gains for beneficiaries, equivalent to 1.6 of the transfer boost. This evidence comes from evaluations of Ghana's LEAP program and historical changes to the value of the stipend. As noted, the evidence is somewhat weak with no randomized or quasi-experimental analysis to draw upon. An attempt at using propensity scoring matching did not

indicate any boost to consumption from LEAP. Overall we assess the quality of the evidence as limited.

4. Microfinance

4.1 Description of intervention

Microfinance in Ghana has a long history roots. The sector has, however, been fragmented and is only just recently undergoing restructuring under the Financial Sector Strategic Plans (FINSSP I&II) and Ghana Microfinance Policy. Indeed after the Economic Recovery Program of the late 1980s, there was a strong advocate for the restructuring of the financial sector to enhance the extension of credit and institutional support for business development services to small enterprises to help them adjust (Sowah, Baah-Nuakoh, Tutu and Osei 1992). The sector is currently under a 4 tiered structured as follows: Tier 1 Rural Community Banks, Finance Houses and Savings & Loanss –regulated under the Banks and SDI Act, 2016 (Act 930). Tier 2 Tier 2 microfinance companies and other deposit taking & profit-making financial institutions; Tier 3 micro-creditors and Non-deposit taking Financial NGOs. These typically are under an umbrella association. Tier 4 Susu collectors and Individual Micro-Creditors.

The intervention consists of expanding access to microfinance to households. This could be done via promotion of microfinance in underserved areas. The idea behind the intervention is that access to finance would serve as a leverage to propel or increase household economic activities into higher and sustained levels thereby eventually increasing their welfare levels. Although small scale agriculture is dominant in the economy of Ghana, close to half (49.7%) of Ghanaian households also own or operate a non-farm household enterprise. These enterprises are concentrated in small-scale manufacturing and construction, wholesale/retail, other services and preparation and sale of meals with limited access to finance. The Ghana Living Standards Survey 7 reports that fifty six percent of household state access to credit as the most difficult factor in establishing a business. With expanded microfinance, the theory is that such households can utilize this access to finance in a number of ways to sustain and/or increase the operational and production base of their enterprises and or smoothen consumption during periods of shocks. At the same time access can also result in other households starting their own business as a result of having access to start-up capital.

4.2 Relevant literature

Research on the effectiveness or impact of microfinance has been highly debated since Mohammed Yunus won the Nobel Peace Prize in 2006. The literature has hovered around three main threads. The first thread perhaps spurred by the influential work of Pitt and Khandkher (1998) show how microfinance can enable households move unto a higher consumption status and attain a higher welfare status. For instance, in a study on India, Imai, Arun and Annim (2010) show that microfinance was instrumental in poverty reduction in urban areas. Amendola, Boccia, Mele and Sensini (2016) also find similar overall welfare benefits of microfinance in Mauritania. Microfinance can unlock the economic potentials of poor households by relaxing their liquidity constraints and allowing them to start, sustain or expand their economic ventures.

The works of Adams, and Von Pischke (1992) and Coleman (1999) which take a more pessimistic approach and point out the negative and welfare reducing effects of microfinance lead the second thread. Here critics argue that microfinance does not benefit the poor (Coleman 2006). Others like Seng (2018) on a study of households in Cambodia finds that microfinance adversely impacted households and in line with Coleman (1999) attributes this to a high interest rate which locks clients into a vicious cycle of debt and inability to repay.

The third line of studies (e.g. Dunford 2006, Chemin 2008, Van Rooyen, Stewert and de Wet 2012) have generally found mixed impact results and appear to point to the importance of context. The study by Banerjee et al. (2015) also falls within this thread. They showed that within the context of Hyderabadi in India, microfinance uptake had no consumption effect but there was significant increase on expenditure on durable household goods (mainly asset building). Similarly Karlan, Savonitto, Thuysbaert and Udry (2017) in a study of the impact of savings-led microcredit on Ghana, Malawi and Uganda find that savings-led microcredit increases households business outcomes and empowers women but has no effect on household consumption patterns.

From a Ghanaian perspective, literature on the impact of microfinance has followed same trend. Akpalu, Alnaa and Aglobitse (2012) find in Northern Ghana that for women female owned enterprises microfinance is instrumental in increasing their efficiency. Akotey and Adjasi (2016) also show that microcredit when combined with microinsurance allow households to build productive assets, enhance their welfare and ability to cope with shocks. However the findings of Kotir and Obeng-Odoom (2009) imply that the impact of microcredit on

productivity and welfare is at best modest. For Ganle, Afriyie and Segbefia (2015) although microfinance empowers some women in rural Ghana, the effect is only for women who already operate businesses. For women who receive start-ups from microfinance the high cost locks them into a debt cycle and makes them worse off. They also show that some women beneficiaries suffer adverse effects due to cultural challenges and undue harassment. Similarly Atiase, Wang and Mahmood (2019) find that although microcredit enhances employment growth for MSEs, its high cost can have an adverse effect.

The issue of identification of casual impact has also played a role in the findings of studies on microfinance impact and resulted in the popularization of experimental and quasi experimental methods-namely randomised control trials (RCTs) and instrumental variables methods to correctly identify the impact of microfinance interventions. Roodman and Morduch (2014) for instance strongly criticised Pitt and Khandker (1998) on the basis that the methods and data used could not identify impact. There has been a consistently growing move towards the use of RCTs to assess the poverty impact of microfinance. One of the strong proponents of such approaches are Banerjee, Duflo and Kremer the 2019 Nobel Prize winners in Economics. There have however been fierce critics to this particularly by Deaton (2009) and Rodrik (2008) on their external validity and societal cost.

In sum, one can conclude from the literature that microfinance can be useful to boost business activity, help enterprises cope with risk and assist households in consumption smoothing. The issue of context is important as reiterated by Banerjee et al (2015) "…. The primary engine of growth that it is supposed to fuel is business creation…it helps some households make different intertemporal choices in consumption." However, it is important to also note that the most robust evidence does not demonstrate a persistent increase in consumption from exposure to microfinance. Additionally, some papers have indicated that microcredit with high interest rates can result in a debt burden trap and drag individuals and households into poverty. In this analysis we take the 'middle road' view espoused by Banerjee et al (2015) which summarizes the impact from six-country studies of microfinance promotion – namely that as a general rule, microfinance is a useful lever for households to expand business activity and potentially profit, but it has limited impact on household consumption. This finding is also supported by Karlan, Savonitto, Thuysbaert and Udry (2017) an RCT conducted in Ghana and Malawi. We interpret this to mean that microfinance provides value primarily by expanding the livelihood choices of poor households, while not increasing the overall level of consumption.

4.3 Cost-benefit analysis

4.3.1 Costs

For this cost-benefit analysis we examine the costs and benefits associated with a micro-credit loan of GHS 3920, equivalent to the average loan size obtained by household non-farm enterprises in the recent Household Living Standards Survey (GLSS 7). The loan is repayable over one year at the average product interest rate of approximately 30%. There is no database of microfinance interest rates in Ghana and thus this figure was calculated by taking the simple average of MFI products available from microfinance transparency intiative. However, this database is from 2013. In sensitivity analyses we explore the implications of changing the prevailing interest rate.

The cost to the expanded microfinance intervention is at three levels: the operational cost, the financing cost and the default cost. The operational costs consist of staff and administrative expenses incurred in the disbursement and management of the credit and estimated at 15% of the credit amount. The financing cost is the fees or interest in raising funds from donors and estimated at 8% of the loan amount per beneficiary. The default cost accounts for the possibility of no repayment and is estimated at 5% of the loan amount per beneficiary household and is sourced from a survey of 100 microfinance instutitions in Accra (Addae-Korankye, 2014). The total cost of providing a loan is GHS 1077.

Table 4 Cost estimates of microfinance program

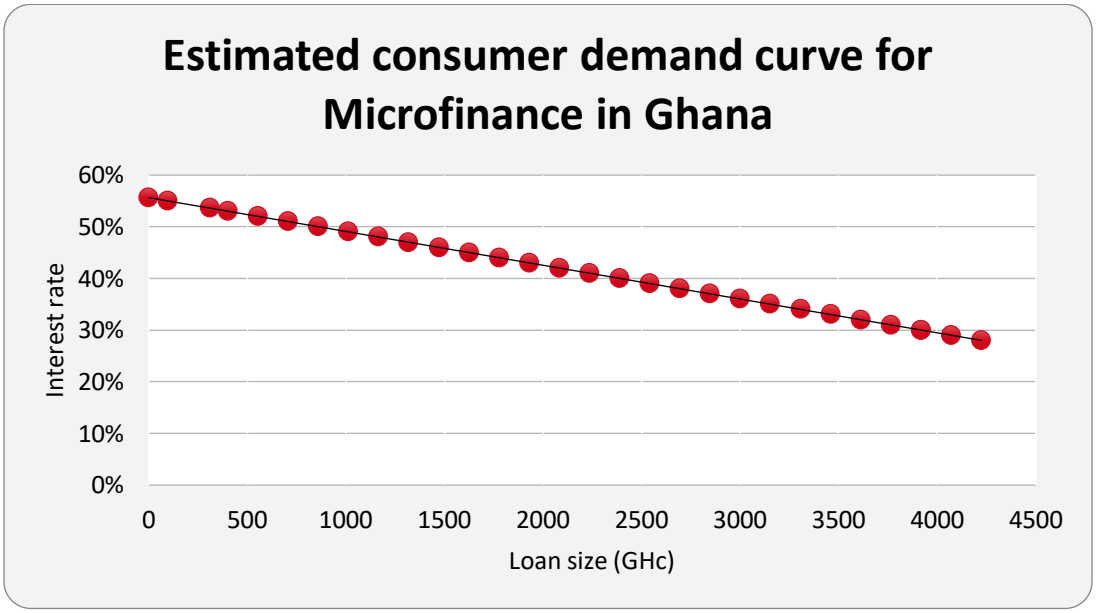
Cost	Percentage of loan amount	Amount in Ghana Cedis
Operational cost of credit	15%	588
Financing cost of credit	8%	294
Default	5%	194
Total Cost	**27.5%**	**1077**

4.3.2 Benefits

Given the literature outlined previously notes limited long-term consumption benefits (and also limited downside) from microcredit, we focus only on the first order benefits of the intervention. Microcredit appears to allow households to expand their businesses and they respond by reducing income-generating activity from other sources (this is the implication of no long term consumption increase). One interpretation of these findings is that microfinance

enables households to choose between a greater suite of income generating activities – a choice which has inherent value, and is arguably the primary benefit of microfinance. The welfare value of this choice can be estimated by taking the difference between the willingness-to-pay for microfinance and the actual cost of attaining it. This value summed over the entire population of (new) microfinance customers is the consumer surplus.

Estimating the consumer surplus requires an estimation of the demand curve for microfinance, which in turn requires estimating the elasticity of credit demand. For this parameter we draw from a review of the small available number of elasticity studies conducted by Karlan and Zinman (2019). That review identified 11 studies from developing and developed countries, and noted that only four of them estimated long run elasticities. These were -2.9, -1.3, -1.04 and -0.84. We adopt the median value of -1.17 for this analysis. Using the market equilibrium value of 30% interest and 3920 cedi loan size we construct the consumer microfinance demand curve as seen in the figure below. The implication of this curve is that at an interest rate of 56%, consumers are not willing to utilize a loan of any size.



The consumer surplus is given by half the difference between this point and the market clearing level i.e. Consumer surplus = 0.5 * (3920-0) * (56%-30%) = GHS 503.

Additionally, microfinance institutions also benefit by providing more loans to customers, a benefit which can be estimated via their average revenue from a given loan. This value is given by average loan size * interest rate = 3920 * 30% = GHS 1,176. The total benefit from the consumer and MFI perspectives is therefore GHS 1,678.

4.3.2 Summary of costs and benefits

The total cost of administering microfinance in year one is GHS 1077. The total benefits accruing from the consumer and producer gains amount to GHS 1,679. The BCR is therefore 1.56. Since this is an intervention where costs and benefits are modelled in the same year, discount rates do not affect the BCR.

Table 5 Benefits and Costs of microfinance program

	Amount in GHS
Benefit	1,679
Cost	1,077
BCR	1.56

4.3.3 Sensitivity analysis

To ensure robustness several sensitivity analyses are performed to assess the impact on BCR. The sensitivity revolves around two scenarios: One is the possibility of a higher default rate from 5% to 10%, as well as a lower default rate from 5% to 2%. The second is greater responsiveness of credit price to demand equal to -2.9 and a less responsive value equal to -0.84. These correspond the extremes of the ranges documented in Karlan and Zinman (2019). The analysis shows that the BCR remains within a relatively small range of 1.3-1.7 across the scenarios.

Table 6 Sensitivity analysis of microfinance program

Interventions	Benefit (GHS)	Cost (GHS)	BCR
Higher default rate (10%)	1679	1274	1.3
Lower default rate (2%)	1679	961	1.7
Greater responsiveness of credit deman to price (-2.9)	1379	1077	1.3
Lower responsiveness of credit to price (-0.84)	1876	1077	1.7

4.4 Discussion

From the analysis, the expanded microfinance intervention yields on average GHS 1.6 for every GHS 1 spent. From a policy point of view this may not be a sufficiently large benefit for priority. Of course from a poor household perspective, such benefits could be meaningful.

Indeed the long term prospects of this would be the ability to operate in a less financially constrained environment. The sensitivity analysis however does indicate that overall, the social BCR of microfinance is within a small range of 1.3-1.7. We assess the evidence for this as strong given the consistency in the literature of the impacts of microfinance from high quality studies and the relatively small range of the BCR across plausible changes in the parameters.

5. Social housing

5.1 Description of the Intervention

Ghana has had significant challenges in meeting its housing needs. Urban growth in has also

deepened the housing problem particularly with low income citizens suffering the most handicap in terms of access to decent affordable housing. Consequently, the country has had a perennial long standing deficit in its housing stock. Data from the Ghana Living Standards Survey Housing 7 shows that 64.6% of households in Ghana live in rooms in compound houses or other forms of impoverished structures. Housing conditions in Ghana are particularly severe in the urban areas where families live in crowded conditions (compound houses typically with one bedroom and share bathroom and kitchen facilities) and in some cases poor structures and slum conditions.

This increasing phenomenon is unhealthy and speeds up the deterioration of welfare particularly of the urban poor. The current housing deficit is estimated to be 1.7 million housing units (CAHF 2019). Historically, attempts have been made to deal with this problem. In the post-independence era (late 1950s to 1970s) state interventions led by the State Housing Company Limited, Tema Development Corporation and Department of Rural Housing were designed and implemented to build affordable houses for the public. This was complemented with funding from State financial institutions like the now defunct Bank for Housing and Construction (BHC) and First Ghana Building Society. From the 1980s to the 1990s, in addition to state intervention policies, private participation was encouraged with private real estate developers and the formation of the Ghana Real Estate Developers Association (GREDA) with the aim to foster the construction of affordable housing unit. The strategy was continued in the 2000s and has prevailed since then. In recent times, multinational corporations have also become active participants in the housing sector.

Key policies that have informed some of these strategies include National Housing Policy and Action Plan (1987 – 1990) National Shelter Strategy, Vol. 1 & 2 (1993), Revised National Shelter Strategy, Part 1 & 2, 1999/2000, The National Urban Policy (2011) and the National Housing Policy (2015). One of the significant private sector developments was the incorporation of The Ghana Home Loans as a mortgage finance institution in 2006. It obtained a banking license in 2017 and remains the country's foremost mortgage lender. Although the introduction of private participation has increased the supply of housing stock, there have been substantial challenges with affordability due to high construction and mortgage finance cost. Chongo and Laufer (2016), notes that the high cost of capital is related to the uncertain macroeconomic environment with its associated high lending cost and the complex land tenure system-lengthy processes to buy and formalize the purchase of land. This makes housing less affordable. In recent times the Government of Ghana (GoG) also announced two schemes National Housing and Mortgage Scheme (NHMS) and the Affordable Housing Real Estate Investment Trust (REIT) to increase state participation and quicken the goal of reducing the housing deficit. A recently launched project as a result is the building of 200,000 affordable and sustainable homes in collaboration with UNOPS and Sustainable Housing Solutions (SHS) Holdings particularly the provision of housing to the urban poor.

The intervention, therefore, consists of providing housing facilities in urban areas. Two types of housing structures are considered. The first is the provision of a two-bedroom semi-detached house built from primarily locally sourced and produced building materials. The second is the building of high rise apartments (one and two bedrooms) to replace improper structures in poorly planned urban areas and slum dwellings. These facilities will be built primarily for the urban poor dwellers who typically live in crowded, improper or slum habitats. Ideally the high rise apartments will be built as in-situ slum redevelopment. However, in cases where slum areas are not deemed fit for residential dwelling the construction is moved to more environmentally appropriate land environs. The consequence is a slight difference in cost where new land is acquired. This does not drastically affect the total cost in both situations. However, the analysis is done in a way to capture cost of land even in the case of slum in-situ redevelopment.

5.2 Relevant literature

There is a fair amount of literature (beginning with the works of Tipple, Korboe and Garrod 1997, Tipple and Korboe 1998 and Konadu-Agyemang 2001 for instance) on the importance

of social housing for development focused on Ghana. The works of Mayo, Malpezzi and Gross (1986), and Rondinelli (1990) in support for social housing for the poor further state that clearing slums and squatter settlements is counterintuitive to addressing poverty. The welfare outcomes of housing have also been documented in the literature following the works of Dupuis and Thorns (1998), Dunn (2000, 2002) and Dunn and Hayes (2006). These studies have particularly focused on the health benefits of social housing for the poor and conclude that housing is a valuable health capital. For instance in a study of Labone (a high income suburb of Accra), Asylum Down (a middle income suburb in Accra with informal business and structures) and Nima (a poor area and highly overcrowded area in Accra) in Ghana, Arku, Luginaah, Mkandawire, Baidem and Asiedu (2011) found that residents of Asylum Down and Nima were more likely to report cases of poor mental health. The likelihood of poor mental health was more pronounced in Nima. They also find that families in compound houses are more likely to have health problems. Yeboah (2005) states that the development of housing for the urban poor is important and that housing the poor can reduce poverty in Ghana. The poor can use their houses to leverage credit from banks for establishing businesses. In sum it is argued that social housing is a tool for poverty reduction.

5.3 Cost-benefit analysis

5.3.1 Costs

Obtaining accurate cost estimates for social housing can be difficult. For the purposes of this paper, estimates from two institutions-The Centre for Affordable Housing Finance and Ghana Home Loans Bank were available for use. The estimates provided by Ghana Home Loans Bank, are used for the analysis given that it is the prime mortgage bank in Ghana. For both types of housing structures the cost items are similar and consist of the following; the cost of land, the cost of providing infrastructure (e.g. water and sewerage, electricity, road etc.) the compliance cost, the development cost and the construction cost.

Table 7 Cost of building low cost housing in Ghana using local inputs

Process	2 bedroom house semidetached house (GHS)	2 bedroom apartment (GHS)	1 bedroom apartment (GHS)
Land cost	12,750	9,960	7,968
Infrastructure provision cost	43,824	34,238	27,390
Compliance cost	13,291	12,301	9,402
Construction cost	109,560	109,560	82,170
Development cost	49,840	46,127	35,258
Total cost	229,265	212,185	162,189

Source: Ghana Home Loans Bank

The total cost of the interventions are therefore; GHS 229,265 for a 2 bedroom semi-detached house, GHS 212,185 for a 2 bedroom apartment (high rise) and GHS 162,188.5 for a 1 bedroom apartment (high rise).

5.3.2 Benefits

There are many benefits to improving housing conditions of the poor. These include convenience, aesthetic and comfort benefits from avoiding overcrowded conditions. These may come with additional health benefits for example reducing the risk of transmitting infections (e.g. from sharing toilets with a large number of people). There may be some safety and security related benefits from improved housing. All of these and any other private benefits, should be embedded in the market prices of houses.

Therefore, one parsimonious approach to estimating the benefits from the intervention is to simply estimate the difference between the value of the existing housing and the new housing to be enjoyed by beneficiaries. Data gathered from Ghana Home Loans bank provides the rental price for these developments which can be used to infer the market value of the property (assuming that the market value of the property is a function of the stream of future cash flows that can be derived from the investment). The rental prices are noted below. We employ a simple perpetuity formula accounting for real long-term growth in housing prices of 4% to estimate the implied market value of the properties at different discount rates. These are presented in the table below.

Table 8 Social Housing Estimated Benefits

BENEFITS			
Market value	BLC GHL 2 bedroom (GHS)	2 Bedroom apartment (GHS)	1 Bedroom apartment (GHS)
Rent per month	913	685	465
Market value of property			
5%	1,095,600	821,700	547,800
8%	273,900	205,425	136,950
14%	109,560	82,170	54,780

Source: Ghana Home Loans bank and authors' calculations

5.3.2 Summary of costs and benefits

The benefits and costs of the social housing interventions are presented below. There are slight differences in the BCRs across different housing types. However, we believe that given uncertainty in the data one should not put too much emphasis on the point estimates and consider the broad message of the figures: namely that at an 8% discount rate the benefits of social housing are roughly equal to the costs.

From a theoretical perspective this is expected. The costs and benefits of housing are dictated by the private market and in equilibrium in a relatively competitive setting economic costs should equal economic benefits (for example if the market value of houses were much higher than the economic costs, then developers would build more houses driving down prices).

At lower or higher discount rates the BCRs increase and decrease respectively.

Table 9 Benefits Cost Ratios of Social Housing

	2 Bedroom semid house	2 bedroom apart redev	1 bedroom apart redev
5%	4.8	3.9	3.4
8%	1.2	1.0	0.8
14%	0.5	0.4	0.3

5.3 Discussion

From the analysis, the benefit cost ratio of social housing appears to be largely on a 1:1 basis. Thus for every Ghana Cedi 1 spent on social housing there is an equivalent Ghana Cedi 1 benefit. Although relatively low this BCR is not surprising given the relatively high cost of housing.

6. Conclusion

Although Ghana has implemented policies to reduce poverty over the last three decades, there are signs of deep poverty persistence in certain regions of Ghana. Future poverty reduction efforts may have to take on different dimensions and in particular ascertain the most effective ways to address extreme poverty, given limited resources. This paper conducted a comparative cost-benefit analyses of four well known policy instruments designed to boost livelihoods and improve circumstances of the poor: poverty graduation programs, cash transfers, microfinance and social housing.

The results indicate that poverty graduation is likely to be the most effective use of funds, with a benefit-cost ratio (BCR) 1.8 at an 8% discount rate. This is followed by increasing cash transfers under the Livelihood Empowerment and Poverty (LEAP) program with a similar BCR and expanding microfinance both of which have a BCR around 1.6 at 8% discount rate. Social housing is likely to have BCRs around 1.

There is strong evidence for the BCR estimates of poverty graduation following the evidence from rigorous randomized controlled experiments from the Northern region, one of the three regions where more than 50% of households live in poverty. For the remaining interventions the quality of evidence varies from limited (social housing), medium (LEAP) and strong (microfinance). The results from this study on Ghana are similar to results in other country and regional prioritization projects conducted by the Copenhagen Consensus Center.

The BCRs of the programs mask large difference in their unit costs. Graduation costs GHS 10,600 per individual (Banerjee et al. 2015). Increasing the cash transfer under LEAP would cost around GHS 160 for one household for one years. Microfinance costs GHS 1077 per loan, while social housing costs between GHS 160,000 to 230,000 depending on the type of housing. This difference in unit costs has implications for the reach of each potential intervention given

a fixed budget. For example, the government could bring one household through graduation or provide 66 households with increased transfers under LEAP for one year.

Within the broader context of the Ghana Priorities project, none of the poverty reduction programs examined here are likely to be one of the 'best buys' for the country. Singular 'solutions' like (modest) cash transfers and microfinance, while offering some benefits, do not appear to sustainably lift incomes. The provision of social housing does have significant long term asset significance for the poor but is very expensive to implement with limited resources. Graduation programs may be more effective both from a substantial short term (Banerjee et al. 2015) and long-term impacts (Banerjee et al. 2017, Bandiera et al. 2017) with transformative effects for the beneficiaries.

BCR Summary Table

Intervention	**Discount Rate**	**Benefit per beneficiary (GHc)**	**Cost per beneficiary (GHc)**	**BCR**	**Quality of Evidence**
Poverty graduation	5%	26,544	9,975	2.7	Strong
	8%	17,574	9,633	1.8	
	14%	9,157	9,013	1.0	
Increase cash transfers under LEAP	5%	255	160	1.6	Medium
	8%	255	160	1.6	
	14%	255	160	1.6	
Microfinance	5%	1,679	1,077	1.6	Strong
	8%	1,679	1,077	1.6	
	14%	1,679	1,077	1.6	
Social Housing	5%	821,700	201,213	4.1	Limited
	8%	205,425	201,213	1.0	
	14%	82,170	201,213	0.4	

Note: Social housing intervention is a simple average of three types of housing.

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