

Working paper

Employing the Ultra- Poor in Ghana

Investigating Rural
Labor Markets

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1. INTRODUCTION

In developing countries we observe far more single-household enterprises than in developed countries. Yet it is not difficult to see examples where economies of scale should exist on a small scale. For example, multiple women often sell baskets or vegetables in street markets right next to each other as competitors. Why don't they come together and specialize their labor (for example, one could focus on sales and the other on production)? One implication of this observation is that most entrepreneurs perceive the opportunity cost of labor to be quite low, and as a result, choose not to use hired labor. There is increasing evidence that such labor market imperfections are critical impediments to development.

In particular, rural labor markets in Sub-Saharan Africa are generally viewed as thin. For the vast majority of households in rural areas in Ghana, agriculture is the main economic activity. Most households practice subsistence farming, growing food mostly for their own consumption. The majority of the labor employed on the farm is family labor, and few people participate in wage labor as an important income-generating activity. However, when family labor is valued at market prices in order to calculate profits, farm and enterprise profits are generally negative. This suggests that the shadow value of one's own labor is strictly less than the observed wage of hired labor. It would thus seem rational for people to choose to work less on the farm, and to engage more in paid labor.

The fact that people choose the opposite—spending most of their time on the farm and barely any time engaging in paid labor—points to economically important frictions in the labor market. There are multiple channels through which labor market imperfections may affect household welfare. First, a direct effect: household income is lower in the aggregate than it might be if people were able to engage in paid labor. This has clear implications not just for income levels,

but if combined with financial market imperfections, can lead to inability to smooth income or hedge against risks. Second, indirectly, farm growth may be constrained in rural settings by difficulties in hiring labor when it is needed. If hiring agricultural labor is difficult or overly costly, farmers may choose to forego otherwise profitable investments. Lower investments lead to lower income, and thus lower household welfare.

This project explores two categories of questions that aim to understand the underpinnings of rural labor markets and their imperfections. First, if people do have access to paid labor, what factors affect their decisions to participate or not? In particular, we are interested in measuring the elasticity of labor with respect to wage and complexity of task—in other words, how the supply of labor varies when the wage varies, or when the complexity of the task varies. Do they respond to changes in wage or to the difficulty/complexity of the task? What is the opportunity cost of farm labor?

Second, why are labor markets in Sub-Saharan Africa so thin? There are many potential explanations for labor market failures: perhaps people do not have information about where the job opportunities are, or perhaps transportation costs prevent people from engaging in paid labor, or perhaps information asymmetries cause frictions in the labor market. In this project, we test two alternative hypotheses. First, it may be that nutritional poverty traps increase the cost of efficient labor units. If individuals living in extreme poverty are malnourished, they may be less productive, and it may not be cost effective for employers to hire them. Second, it is possible that limited access to financial services reduces the incentive to participate in paid labor, and thus constrains labor markets.

Little rigorous research has been conducted on rural labor markets. Yet, it is not difficult to see how labor market frictions can have important negative effects on household welfare. This experiment is part of a growing body of research that aims to disentangle the mechanisms that cause frictions in the market and reduce household welfare. Our research is expected to contribute in important ways to our understanding of rural labor markets and to suggest policy interventions that make labor markets function more smoothly.

2. RESEARCH QUESTIONS

Through the Graduation from Ultra Poverty (GUP) Employment Program, discussed in detail in the next section, we will be able to investigate the following questions:

- What is the impact of a comprehensive poverty reduction program on labor supply, savings and various measures of welfare?
- What is the effect of the employment program on savings and various measures of welfare?
- What is the effect of savings and savings matching on labor supply?
- What is the effect of wage on labor supply and savings?
- What is effect of the GUP program on the labor supply elasticity?
- What is the effect of nutrition and/or lack of depression on the ability to respond to incentives?

3. OVERVIEW OF GUP AND EMPLOYMENT PROGRAMS

A. GUP Program and Treatment Assignment

The Graduation from Ultra Poverty (GUP) project is a part of a set of evaluations, in partnership with CGAP and the Ford Foundation, that intends to determine whether the Targeting the Ultra Poor (TUP) model, pioneered in Bangladesh, is effective in a range of contexts. This seventh Ultra Poor Graduation Pilot takes place in northern Ghana. IPA is partnering with Presbyterian Agricultural Services (PAS), a local organization with experience delivering a wide range of services relating to agriculture, health, and saving, to implement the Graduation model. IPA is also conducting the project evaluation.

In November 2010, the project identified 3850 ultra-poor households in 244 communities in three districts of northern Ghana: Tamale, Langbensi, and Sandema. 1307 individuals in 78 communities were randomly assigned to the GUP program, a comprehensive package of services including a productive asset (such as goats or guinea fowl), consumption support during the lean season, livelihood and financial trainings, healthcare, and weekly coaching visits from Field Agents. Half of the GUP clients also have compulsory weekly savings when consumption support is provided. 1242 individuals in 77 communities were randomly assigned to a second program called Savings out of Ultra Poverty (SOUP) in which Field Agents open savings accounts for clients and conduct weekly visits to collect voluntary savings. Half of the SOUP

clients receive a 50% match for their savings. At the end of the program in 2013, we will compare clients in GUP and SOUP communities to clients in control communities to determine the impact of both programs on wellbeing and other indicators.

The broader GUP program provides an excellent opportunity to investigate the labor market questions we described above. We designed an employment program offering wages for the production of cloth bags, and implemented it such that it cross-cuts the three GUP treatment groups (GUP, SOUP, and control). By doing this, we generate exogenous variation in expected poverty and nourishment levels, and can test the hypothesis that nutritional traps impede productivity.

In February 2012, half of all GUP, SOUP, and Control villages were randomly selected to receive the Employment Program. This amounts to 120 villages: 42 control villages, 39 GUP villages, and 39 Savings villages. In GUP and SOUP villages selected to receive the employment program, all ultra-poor households assigned to GUP or Savings were invited to participate. In control villages selected to receive the employment program, half of ultra-poor households were invited to participate. This amounts to 1098 households: 397 control, 313 GUP, and 388 SOUP. The treatment design is illustrated in Figure 1.

Figure 1

Village Assignment			HH assignment	# Households
GUP assignment	BAGS assignment*	# Villages		
GUP (78)	simple bags (20)	20	GUP w/ savings	81
			GUP w/o savings	78
			control (no GUP/bags)	156
	complex bags (19)	19	GUP w/ savings	78
			GUP w/o savings	76
			control (no GUP/bags)	158
	no bags (39)	39	GUP w/ savings	174
			GUP w/o savings	179
			control (no GUP/bags)	328
SOUP (78)	simple bags (19)	19	SOUP w/o match	104
			SOUP w/ match	98
			control (no SOUP/bags)	134
	complex bags (20)	20	SOUP w/o match	94
			SOUP w/ match	92
			control (no SOUP/bags)	138
	no bags (39)	39	SOUP w/o match	173
			SOUP w/ match	172
			control (no SOUP/bags)	238
control w/ bags (42)	simple bags (21)	21	bags only	189
			control (no bags)	177
	complex bags (21)	21	bags only	208
			control (no bags)	199
PURE control (36)	no bags (36)	36	control	526
Asset Only		10		
TOTAL		244		3850

B. Design of Employment Program

Within the employment program, we randomized the complexity of the bag design assigned to the worker, as well as the wage. Of the 120 villages assigned to the bags program, 60 were assigned to produce a simple bag and 60 were assigned to produce a complex bag in order to test whether participants are willing and able to engage in complex tasks. Moreover, every four weeks, villages are assigned a different wage in order to investigate the elasticity of labor with respect to wage. Additional information about the wage structure is provided in section 4.C.

The employment randomization within GUP villages will also allow us to test another question: whether household decisions about labor force participation may change depending on whether the support they receive from GUP is “free” or “costly.” To answer this question, we will compare GUP clients who do not receive the employment program (and therefore receive normal “free” consumption support) to GUP clients who receive the bags program (some small amount of consumption support plus whatever they earn each week making bags). Moreover, among GUP clients selected into the bags program, we have also varied the amount of unconditional consumption support that they receive each week (either GHS 1 or GHS 3, approximately £0.33 or £1). Savings-Only and Control villages selected into the bags program receive wages for completed bags each week, and nothing more.

4. OPERATIONS

A. Timeline

The employment program began in January 2012 and concluded in November 2012. Activities were as follows:

January 2012	Implementation pilot and planning
February 2012	Continuation of pilot, procurement of cloth, scissors, needles, thread, thimbles, and tape measures
March 2012	Final preparations, hired and trained Trainers
April 2012	Community sensitization, community-level training on bag sewing
May 2012	Completion of community-level training, start of bag collection and quality checking
June 2012	Start of wage payments
November 2012	End of bag collection, quality checking, and wage payments

B. Product and Procurement

We used several criteria to evaluate potential products to use in our employment program. First, we needed a product that clients (who are women and typically unskilled) could learn how to make without much difficulty, and which facilitated the development of skills that would be useful in other endeavors once the program ended. Second, the task had to produce discrete, evaluable units fairly quickly in order to have production data with substantial weekly variance. Third, we needed to select a product for which the necessary materials and supplies (and eventually the product itself) could be easily transported to remote communities. Fourth, the procurement of materials and supplies necessary for production had to be within our budget. Finally, we hoped to select a product that would be marketable, so that we could give away or sell the products at the end of the program. Given these criteria, we eventually decided on fabric tote bags, sewn by hand.



Figure 2

We procured the majority of our materials—fabric, thread, scissors, needles, pins, tape measures, thimbles—in Accra. We also had the fabric cut in Accra, out of the concern that it would be challenging for participants to cut the material efficiently and according to pattern, resulting in higher costs for replacement materials. We also decided that we would ask participants to sew both the body of the bag and the straps, but not to attach the straps to the bags, since the attachment of the straps is difficult to do well by hand but essential to the quality of the bag.

C. Pilot

In January and February 2012, we conducted a pilot with two communities in the Tamale area which were not part of the GUP study. Six main tasks were accomplished during this time. First, we finalized the bag design, and decided how the complex bag would differ from the simple bag. While the simple bag has basic “running stitches” on the hem and the strap, the complex bag has a pattern of alternating one “running stitch” with four “chain stitches” (a slightly more complex stitch). The task is more complex because it includes a different, more difficult stitch; because it requires counting; and because it’s harder to meet the relevant quality standards. Second, we experimented with different training methods and designed an appropriate training curriculum. Third, we collected information on the time it takes to make a

bag, and on the number of bags participants typically chose to produce per week. We found that producing a simple bag took 2.5 to 3 hours, and producing a complex bag took 3 to 3.5 hours. Fourth, we drafted quality standards for the bags and did several trial runs of the quality checking process. Fifth, we tested various payment structures in preparation for setting the high and low wages. Finally, we conducted short surveys with the participants to gauge their satisfaction with the program.

Unfortunately by the end of the pilot we were not able to collect enough data to set the high and low wages. As a result, we decided to use the first five weeks of the program to experiment with four different wages: GHS 0.30, 0.40, 0.50, and 0.70 (approximately £0.10, £0.13, £0.16, and £0.23). When we found that production didn't vary significantly between any of the wages, we decided to set the low wage at the minimum amount we felt comfortable with (GHS 0.30) and the high wage at the maximum amount given our budget (GHS 0.70).

D. Community-Level Training

Training began on April 23, 2012, and lasted for four weeks. We hired 24 trainers, eight in each field station, and divided them into teams of two. Each training team was responsible for training between 9 and 11 communities. Communities were trained either in the simple bag or the complex bag, depending on their assignment, over a four day period. On the first day, basic stitches were taught, consent forms were signed, and sewing instruments were distributed. On the second day, bag construction was taught and materials for one practice bag were distributed. On the third day, quality standards were explained and practice bags were collected and quality checked as a group. Materials for three additional practice bags were distributed. On the fourth day, quality second practice bags were quality checked and 10 pieces of fabric were distributed for the launch of the program. Contracts—which included information on payment structures, bag collection and fabric distribution—were explained by trainers and signed by clients.

E. Bag Production

The production of bags began on May 21st, and continued for 26 weeks until November 16th. All bags households were visited on a weekly basis by a field agent, who collected finished bags, distributed fabric for the next week, and paid wages. For GUP and SOUP communities, field agents who already visit households on a weekly basis as part of the GUP and SOUP programs

were responsible for these field visits. For control communities, we hired additional field agents to conduct the weekly visits. Participants were not given any targets, but they were informed that they could submit a maximum of ten bags in one week. Wages for a given week’s production were paid approximately two weeks later, when quality checking had been completed.

F. Quality Checking and Wage Determination

Quality checks were carried out by program facilitators, many of whom were previously community trainers for the program. There are 18 quality standards for simple bags, and 25 quality standards for complex bags. Bags were assigned one point for meeting the quality standards at the “excellent” level, half a point for “satisfactory”, and zero points for “bad.” At the end of the quality check, the program calculated the final quality score for the bag (high, medium, or low). The program also calculated the resultant wage to be paid for the bag, which depends on both the quality and the monthly wage randomization. High quality bags receive the assigned wage plus GHC 0.10, and low quality bags receive the assigned wage minus GHC 0.10. The wage was not affected by whether the bag was simple or complex; this allowed us to analyze the effect of complexity on production in isolation, without being confounded by accompanying wage changes. The complete wage structure is outlined in Table 1.

Table 1

WAGE ASSIGNMENT	QUALITY OF BAG	EFFECTIVE WAGE
High Wage (mid = GHC 0.70)	High	GHC 0.80
	Mid	GHC 0.70
	Low	GHC 0.60
Low Wage (mid = GHC 0.30)	High	GHC 0.40
	Mid	GHC 0.30
	Low	GHC 0.20

G. Monthly Field Visits by Facilitators

Every four weeks, program facilitators returned to the communities that they trained to check on clients, give sewing feedback, and change the wage. Before each visit, quality checking data was compiled for each community, and facilitators were given information on the most common

errors that the community was making, and the number of high, mid, and low quality bags each member of that community has made overall. They were then able to target their feedback, focusing on the most common errors and on the clients who were making mostly low quality bags. If necessary, they gave remedial training to low-performing clients. At the end of the visit, they announced the wage change (if there was one), and explained that the new wage would take effect for bags collected the following week. Each time they changed the wage, facilitators emphasized that participants were never obligated to make bags, and could opt not to produce in a given week if they felt the wages were too low or they did not have sufficient time.

H. Data Collection

We have three sources of data. The first is the production data collected by Facilitators during the quality checking. This data includes the number of bags clients produced each week, information on household members who helped produce bags, the quality of each bag, and the wage it received. The second source of data is a time allocation survey, measuring how participants in the employment program allocate their time during a particular day each month. Though we had collected all of the production data by the end of the program in November, we have not yet completed the time allocation surveys, so we will not be reporting these results for the purposes of this report. The final source of data is the set of surveys that are being conducted as part of the larger GUP evaluation, which include many indicators of wellbeing. The final endline survey will be conducted in May 2013, once the full GUP program has ended. For now, we will limit our analysis to the production data.¹

5. RESULTS

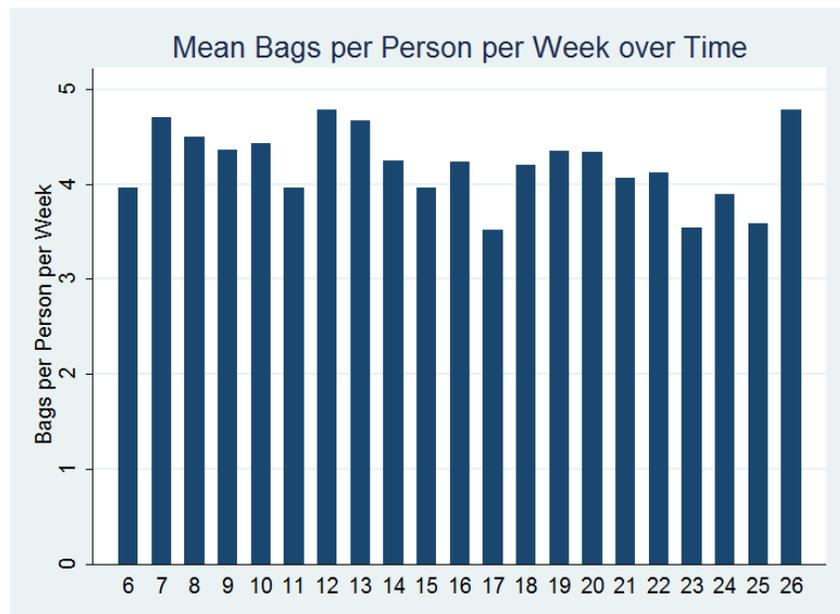
A. Quantity of Bags and Participation

Of the 1098 clients who were eligible to participate in the employment program, 91.3% chose to make bags at some point over the six months. Over the course of the study, we collected 116,488 bags. On average, the 1098 potential participants produced 4.2 bags per week, as

¹ Please note that the collection of production data recently ended on November 30th, and only preliminary analysis has been conducted. Moreover, as noted, we have yet to analyze two of the three sources of data. As such, results and conclusions are subject to modification.

demonstrated in Figure 4. Among clients who participated in a given week, the average number of bags submitted was 7.00.

Figure 3

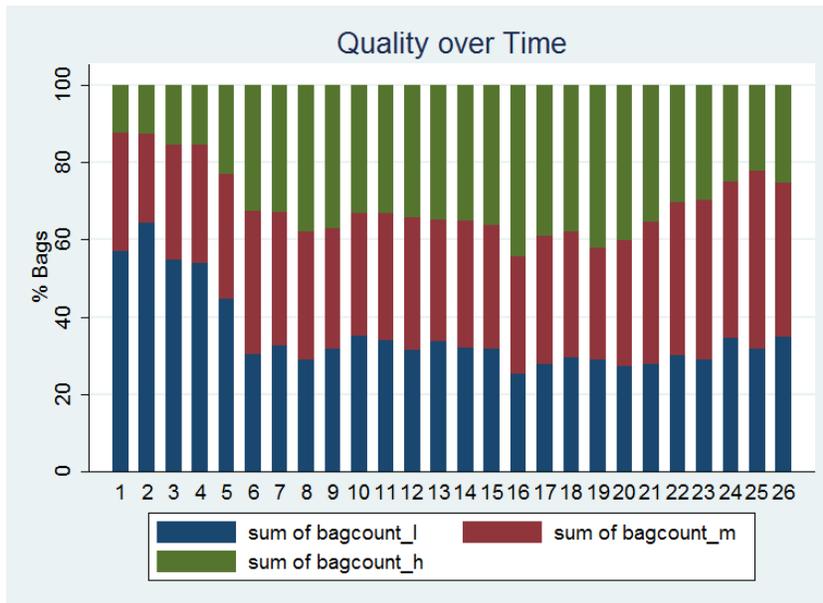


For the purpose of this analysis, we exclude the first five weeks, during which we used four experimental wages rather than the final high and low wages of GHS 0.70 and 0.30 respectively. We conduct the analysis by “client-week,” which means that our dataset had 23,058 observations (1098 clients over 21 weeks). We define participation as the number of client-weeks during which at least one bag was submitted. Overall, we saw participation in 13,810 client-weeks, implying a 59.8% participation rate. There were large differences in participation between stations: in Langbensi the participation rate was 65.6%, in Sandema it was 60.3%, and in Tamale it was 53.8%.

B. Quality of Bags and Earnings

Over the course of the study, 35% of bags collected were low quality, 34% were mid quality, and 31% were high quality. The quality of bags improved over time, though it did seem to fall again towards the end, perhaps because people were trying to work quickly.

Figure 4

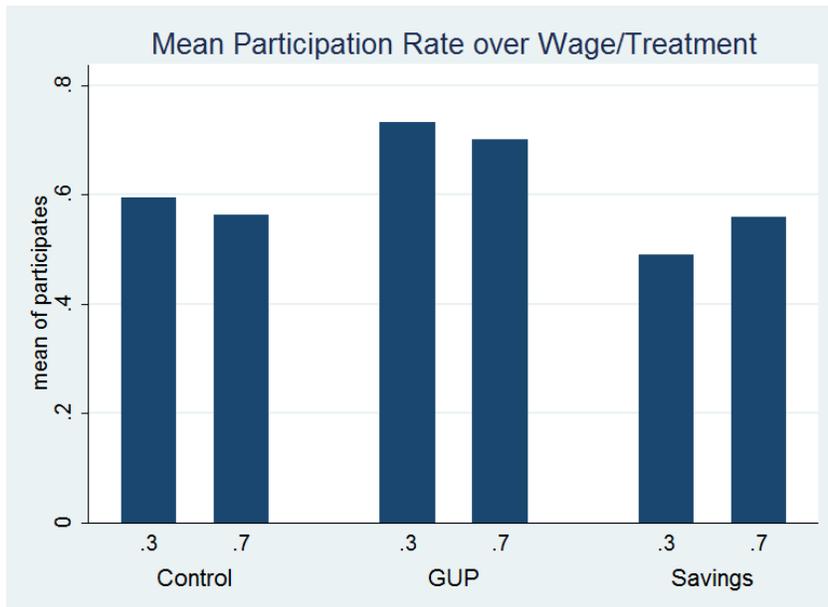


The average earnings for clients who submitted bags in a given week were GHS 3.52. As the quality improved over time, the average weekly earnings also improved.

C. Effect of Wage

Overall, the wage seems to have had an extremely negligible effect on both the number of bags produced and the participation rate. For low wage client-weeks the average participation rate was 59.7%, and the average number of bags submitted per week conditional on participation was 7.03. For high wage client-weeks, the average participation rate was 60.0%, and participants submitted 6.99 bags per week on average. When considering all clients, the results appear to indicate that labor decisions are almost completely inelastic with respect to wage—that is, clients do not change their behavior as a result of variations in the wage. However, there do appear to be heterogeneous impacts among treatments, as demonstrated by Figure 6. Relative to control clients (who have slightly higher participation when the wage is low), savings clients appear to respond more positively to the high wage.

Figure 5



We use regression analysis to determine whether or not the above observations translate into statistically significant results. In Appendix A, Tables 2 and 3, we regress the high wage indicator, the complex bag indicator, and the treatment indicator on both participation (Table 2) and on bag production conditional on participation (Table 3). In both tables, column 1 is a simple regression, column 2 adds interaction terms, and column 3 adds controls for the week of the month that the bags were submitted, and the station in which they were submitted.

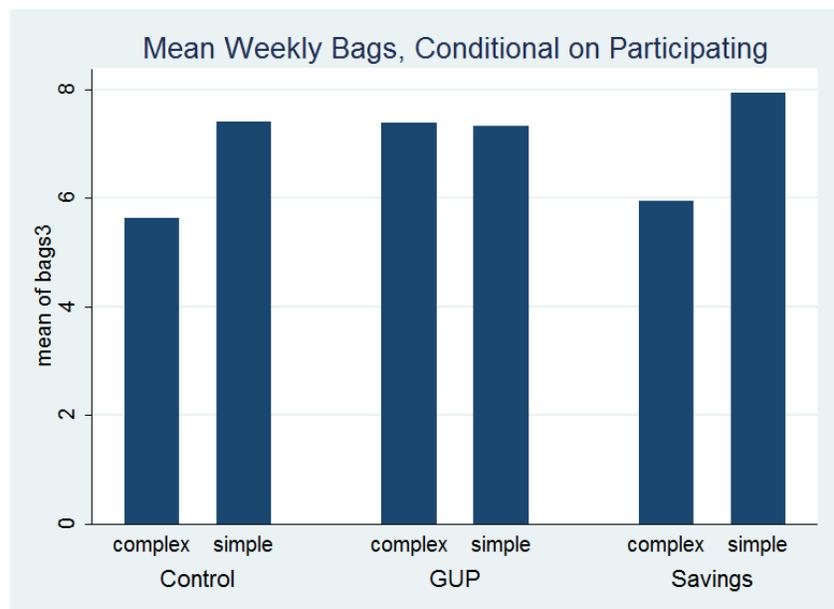
The tables suggest that overall the wage has no significant effect on the participation rate or on the quantity of bags submitted by participants. We do see, however, that the interaction effect between the high wage and village status 3 (the SOUP treatment) is both positive and significant. For SOUP clients, the high wage does appear to have a positive impact, raising participation by 9.9 percentage points (significant at the 5% level) and raising bags submitted among participants by 0.37 per week (significant at the 10% level) relative to the control group.

D. Effect of Complexity

Unlike the wage, the complexity of the bag appears to have substantial general effects on both participation and on the quantity of bags submitted conditional on participation. Among communities assigned to the simple bag, participation was 65.5%, and those who participated submitted 7.56 bags per week on average. Among communities assigned to the complex bag,

participation was 54.1%, and those who participated submitted 6.34 bags per week. Again, it appears that the effect of complexity is mediated by treatment: the production of control and SOUP clients is substantially reduced when assigned to complex bags, relative to GUP clients (who do not seem to be affected by complexity at all). This is illustrated in Figure 7.

Figure 6



These results are confirmed in our regressions (Appendix A, Tables 2 and 3). On average, being assigned to the complex bag appears to have a negative effect on participation (Table 2, Column 2), but the effect becomes insignificant when we include both interaction terms and controls. Moreover, complexity causes the weekly number of bags submitted by participants to drop by 0.983 (Table 3, Column 3). Though participation rate does not appear to be dependent on the interaction between complexity and village, bag production among participants does. Relative to control participants, the effect of complexity on bag production is actually much more positive for GUP clients, who on average produce 1.19 more complex bags per week conditional on participation (Table 3, Column 3). For control and SOUP clients, complexity seems to discourage production, but for GUP clients this does not appear to be the case.

E. Effect of GUP and SOUP Treatments

Finally, we analyze the effect that the GUP and SOUP treatments have overall on participation and production, relative to the control group. Among GUP clients, participation in the bags

program was relatively high at 71.7%, while participation in SOUP and control communities was relatively low at 52.6% and 57.8% respectively. Among those who did submit bags, on average GUP participants submitted 7.34 bags per week, SOUP participants submitted 7.17 bags per week, and control participants submitted 6.54 bags per week.

Again, we look to our regressions in Appendix A, Tables 1 and 2 to determine whether or not there are statistically significant differences between the groups. Overall, involvement in the GUP program increases participation by 13.0 percentage points relative to the control group, significant at the 5% level (Table 2, Column 3). However, involvement in the GUP program only barely increases the number of bags submitted conditional on participating, and this effect disappears when we include the interaction terms (Table 3 Column 3), suggesting that the interaction between involvement in GUP and complexity is the real driver of variation in bags submitted. Involvement in the SOUP program does not appear to have any effect on participation or the quantity of bags submitted among participants.

6. DISCUSSION

In summary, we report three preliminary results:

1. Overall, the high wage does not significantly impact participation or the quantity of bags produced conditional on participation. However, the high wage does have heterogeneous impacts by treatment: relative to control clients, SOUP clients have higher participation and produce higher quantities of bags when they are assigned the high wage.
2. Overall, we observe much higher participation rates among GUP clients. However, conditional upon participating, GUP clients do not appear to produce significantly more bags than control clients.
3. Overall, the complexity of the bag has a negative impact on bags production conditional on participating, though it does not appear to significantly affect participation rates. However, this effect appears to be mainly driven by SOUP and control clients: the impact of complexity on bags production is negligible among GUP clients.

Before beginning the discussion, it is important to consider one piece of qualitative information that we gathered from our Field Agents over the course of the study. It appears that many GUP clients felt compelled to participate because of the outstanding relationships they had with PAS

Field Agents. It seems that no matter how many times Field Agents emphasized the voluntary nature of the program, many GUP clients felt that they would disappoint their Field Agents if they did not participate in the bags program, and some even worried that they might be excluded from future programs. This factor may, in part, drive the high participation rate of GUP clients relative to control and SOUP clients. If so, then our data—showing differences in participation but not in the quantity of bags conditional on participation—makes sense: if GUP clients were trying to maintain their reputation with PAS, they might be more concerned about whether or not they participated, and less about the number of bags they produced.

The fact that the high wage has no overall effect on participation or on bags submitted (for GUP and control clients) is very curious. One possible explanation is that the two-week lag between bag collection and wage payments caused uncertainty about the effective wage. The new wage was always announced one week before it would be implemented (say on June 18th). Bags collected starting the following week (June 25th) would receive the new wage, but this new wage wasn't actually paid until two weeks later (July 9th). Though Facilitators explained this carefully to clients at each wage change, it may still have caused some uncertainty, especially at the beginning of the program, which may in turn have caused clients to maintain their default participation rates and production rates over time. When we conduct a more detailed analysis, we will be able to examine whether effects depend on the week of the month.

Even if we assume that clients did understand the effective wage, there are other possible explanations for the inelasticity of labor with respect to wage. For GUP clients in particular, participation in the bags program may be relatively inelastic given their preoccupation with maintaining their relationship with PAS. For all clients, perhaps only a fixed percentage of clients had any interest at all in the bags program (or the capacity to participate), or perhaps they developed habits at the outset which were unlikely to change over time, even as the wage changed. Finally, it may be that for the poorest clients, labor is inelastic with respect to wage, since they desperately need the money and have no alternative productive activity. If slightly wealthier clients respond positively to the wage, these effects may cancel each other out on average. Later, when we incorporate all of the GUP survey data (which includes several indicators of wealth), we will be able to explore possible heterogeneous impacts based on wealth.

That being said, the fact that wage elasticity is heterogeneous with respect to treatment alludes to an alternative possibility. Though the effect is small, SOUP clients respond more positively to the high wage than GUP or control clients. This may imply that access to savings makes participation in paid labor more attractive. This may be because of the potential interest they gain by saving their earnings, or it might simply be due to the fact that if they can save their earnings, they will be less susceptible to loan requests from family or neighbors. Another possibility (and one that emerged from qualitative field observation) is that clients with access to savings simply have more use for cash. Access to savings may have a positive effect on the perceived need to earn income.

The fact that complexity has such a substantial effect on average is especially interesting given the inelasticity of labor with respect to wage. There are two possible channels by which complexity might affect behavior. First, complex bags take a longer time to make, though the difference is small, and they receive lower quality scores on average (there are 7 additional quality standards, but the percentage brackets for the different quality scores are similar). The result is that it is not only more costly to produce a complex bag, but the expected benefits are also lower. That being said, the difference between a high quality bag and a low quality bag is just GHS 0.20, and the additional time required to make a complex bag is negligible (roughly 30 minutes, which is at most 20% of the time it takes to make a bag, equivalent to GHS 0.06 for the low wage and GHS 0.14 for the high wage). Even with all of these conservative assumptions, the maximum difference in expected value between a complex and simple bag would be GHS 0.34, which is still less than the difference between the high and low wage (GHS 0.40). If people do not respond to direct changes in expected income, then why would they respond to ones that operate indirectly through the complexity of the bag?

It thus appears that there is another channel by which the complexity of the bag affects behavior. The fact that GUP clients are significantly less affected by complexity relative to SOUP and control clients suggests that this channel may have something to do with GUP and its potential benefits. For example, if we assume that GUP clients have better nutrition, it may be that the malnourishment (or general low physical and/or mental wellbeing) of SOUP and control clients reduces their ability to engage in complex tasks. Without more data, this is still a premature

conclusion, but we will be able to verify it (or not) once we incorporate all of the GUP survey data, which includes numerous indicators of health and wellbeing.

7. CONCLUSIONS & POLICY RELEVANCE

Our results have three main policy implications. First, the fact that there was such high participation in the employment program, and the generally low elasticity of labor with respect to wage, implies that the opportunity cost of farm labor is quite low for most people in this population. When we analyze our survey data on time allocation, we will have a better sense of exactly how much time people spent on bags and the extent to which bag production competed with farm labor activities. Until then, it does seem that the ultra poor are willing and able to engage in paid labor if they have the opportunity to do so. The policy implication is that there may actually be high demand for employment programs that extend to rural communities—and presumably, high impact as well.

Second, the fact that only clients with access to savings responded positively to the high wage might imply that access to financial services, and savings in particular, increases the value of wage labor. It may also imply the opposite: that access to employment increases the value of savings opportunities. The upshot is that employment opportunities and access to financial services might be complementary—they might both be more effective when provided in conjunction with the other. If at the end of the day clients are able to use savings to make sustainable improvements in their lives, then this kind of joint intervention might have an extremely high impact. On the contrary, either intervention in isolation may be less effective.

Finally, the finding that GUP clients are less responsive to changes in the complexity of task, relative to both SOUP and control clients, suggests that there may be some sort of nutritional or cognitive poverty trap at work. The mechanism by which GUP enables individuals to engage in complex tasks is still unclear—nutrition, mental health, cognitive ability, and many other factors may play a part. If our endline survey substantiates this finding, the policy implication is that holistic anti-poverty programs like GUP may have impacts that go beyond immediate outcomes—they may also improve people’s ability to engage in complex tasks, and thereby make them both more employable and more productive potential participants in the labor market.

APPENDIX A

Table 2: Participation

VARIABLES	(1) participates	(2) participates	(3) participates
_Ihigh_1	0.00270 (0.0158)	-0.0315 (0.0281)	-0.0284 (0.0285)
_Icomplex_1	-0.115** (0.0441)	-0.0836* (0.0485)	-0.0500 (0.0569)
_Ivillage_s_2	0.136*** (0.0482)	0.122** (0.0521)	0.132** (0.0507)
_Ivillage_s_3	-0.0571 (0.0527)	-0.0512 (0.0754)	-0.0356 (0.0720)
_IhigXvil_1_2		-0.00232 (0.0338)	-0.00695 (0.0340)
_IhigXvil_1_3		0.102*** (0.0381)	0.0988*** (0.0374)
_IcomXvil_1_2		0.0316 (0.0931)	0.00356 (0.0948)
_IcomXvil_1_3		-0.117 (0.102)	-0.150 (0.104)
_Iweekinmon_2			-0.00291 (0.0127)
_Iweekinmon_3			0.0200* (0.0118)
_Iweekinmon_4			-0.0242* (0.0134)
_Iweekinmon_5			0.0605*** (0.0180)
_Istation_2			-0.0465 (0.0514)
_Istation_3			-0.0994* (0.0530)
Constant	0.637*** (0.0321)	0.638*** (0.0289)	0.669*** (0.0336)
Observations	23,058	23,058	23,058
R-squared	0.039	0.046	0.055
Controls	NO	NO	YES

Robust standard errors in parentheses

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

Table 3: Weekly Bag Production Conditional on Participation

VARIABLES	(1) bags3	(2) bags3	(3) bags3
_lhigh_1	-0.0297 (0.102)	-0.204 (0.161)	-0.0831 (0.130)
_lcomplex_1	-1.202*** (0.348)	-1.775*** (0.506)	-0.983** (0.411)
_lvillage_s_2	0.788* (0.459)	-0.150 (0.663)	-0.0256 (0.410)
_lvillage_s_3	0.509 (0.349)	0.245 (0.500)	0.494 (0.367)
_lhigXvil_1_2		0.122 (0.222)	-0.0178 (0.179)
_lhigXvil_1_3		0.552** (0.237)	0.371* (0.212)
_lcomXvil_1_2		1.832** (0.877)	1.186** (0.589)
_lcomXvil_1_3		-0.225 (0.665)	-1.092 (0.719)
_lweekinmon_2			-0.0284 (0.0764)
_lweekinmon_3			-0.0191 (0.0681)
_lweekinmon_4			-0.00898 (0.0827)
_lweekinmon_5			0.203 (0.164)
_lstation_2			-1.643*** (0.315)
_lstation_3			-2.245*** (0.308)
Constant	7.140*** (0.329)	7.508*** (0.405)	8.405*** (0.250)
Observations	13,810	13,810	13,810
R-squared	0.051	0.074	0.173
Controls	NO	NO	YES

Robust standard errors in parentheses

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

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