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Goal Setting, Self-help Groups, and Incentives as a Poverty Alleviation Strategy: Evidence from Field Experiments in Indonesia, Colombia and Ethiopia

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Abstract: This study uses randomized field experiments conducted in Indonesia, Colombia and Ethiopia to evaluate the efficacy of the combination of goal-setting, self-help groups, and incentives as a poverty alleviation strategy. The experiment in each country had subjects randomly assigned to one of the five groups: 1) goal setting "goal", 2) goal setting and group "group", 3) goal setting and incentives "incentives", 4) goal setting, group and incentives "FII" and 5) control group. Results show that the "goal" treatment has a positive and significant effect on income in Indonesia, the "incentives" treatment resulted in a positive and significant effect on income improvement in Ethiopia and Indonesia, the "FII" treatment is the only treatment that achieves economic outcome improvement in all the countries considered for this study. On the other hand, I detect no significant impact of the "group" treatment on the economic outcome variable in Ethiopia, Indonesia and Colombia. The overall analysis of the study revealed strong evidence in the findings to suggest that the FII treatment could be a powerful tool for poverty alleviation in the developing countries.

I. Introduction

Billions of dollars have been spent on program interventions in developing countries, yet 1.2 billion people are still living below $1.25 per day in personal income in developing countries (World Bank, 2013). Albeit many program interventions have been implemented for good intentions to address the issue of poor populations, they tend to not eradicate poverty for many reasons. One of the reasons could be the lack of motivation by participants to make change. This is due to the fact that most program interventions focus on the needs and deficits of the low-income people, but they ignore the initiative, motivation and the capacity the poor people have to make change. Nevertheless, an organization known as the Family Independence Initiative (FII) has found consistent success in improving the socio-economic status of the poor, where for many years government programs failed to do so, by creating a structure for low-income people to maximize their own abilities, resources and social networks. Maurice Lim Miller, the founder and CEO of the FII, was awarded the MacArthur Foundation's Genius Award in 2012 for his contribution to the success of poor working families in United States.

The Family Independence Initiative is an Oakland, California based national non-profit organization that has innovated a new poverty alleviation strategy by using the amalgamation of goal setting, supportive social networks and providing incentives to increase economic outcome. By applying this new poverty alleviation tool, the FII shows that low-income households have the ingenuity and the capacity to guide themselves and their social networks out of poverty. The idea behind the FII approach is simple and cost effective. A low-income family who wants join the FII must select six to eight low-income working families and self-organize into peer support groups. Then, the FII challenges the groups to set goals or to have clear directions that will lift them out of poverty. Each member in a cohort sets individual goals and receives small cash rewards when

they report their progress or achieve their goals. The goal could be finding a job, opening a new business, saving, attending business training, improving kids' grades, etc. The main purpose of the FII incentive scheme is to reward initiative and progress. Moreover, the FII encourages members of a self-help group to meet on a monthly basis to discuss obstacles they face, the progress they make to achieve their goals, and to share information and resources to help one another. Families who adopted this approach achieved substantial improvements. For example, results obtained from FII follow up study in Oakland, California showed that earning of the families increased by 27 percent and homeownership increased by 40 percent in two years (FII, 2011). Could this new approach help eradicate poverty in developing countries? If so, which component is the most effective?

To examine whether the components of the FII model work in developing countries' settings, I used randomized field experiments data conducted from three developing counties: Ethiopia, Indonesia and Colombia. The experiments in each of the three country sites were designed to test the ingredients of the FII approach. The experiments were a 2 X 2 design consisting of four treatment groups and one control group. Subjects were assigned to one of the five groups randomly. The first treatment group was "goal". The rationale of this intervention is to test the goal setting elements of the FII model. Each subject assigned to this treatment group was asked to set a personal goal. The goal was something they thought that could change their economic situation and it should have been verifiable. The second treatment group was "group". This intervention was aimed to examine the peer support component of the FII model. Subjects assigned to this treatment group were placed in small self-help groups and set individual goals. Members of the group were also required to meet and talk about the challenges and concerns they face to realize their goals, brainstorm solutions to the problems, share success stories and motivate one

another to make progress. The third treatment group was "incentive". This intervention is to explore the incentive scheme components of the FII model. The participants who were assigned to this treatment set personal goals and they were not placed in a small group. They were told that they will only get incentives if they achieved their goals. The fourth treatment is "FII". This intervention is the interaction of goal-setting, group and incentives. Subjects assigned to this treatment were placed in small peer support groups, and set personal goals. They were told that they would receive incentives only if they achieved their goals. The subjects assigned to control condition did not get any intervention. For each intervention, the outcome with regard to goal achievement and income were measured. The main purpose of this study is to test the components of Family Independence Initiative approach (FII) in developing countries.

The overall analysis of the study using three countries dataset revealed strong evidence in the findings to suggest that the FII treatment could be a powerful tool for poverty alleviation in the developing countries.

The next section presents literature review. Section III describes the experiments and the experimental design. Section IV provides the estimation strategies. Results are discussed in section V. conclusion and policy implications are presented in section VI.

II. Literature Review

Since FII uses a combination of approaches such as goal setting, incentive and self-help groups to help low-income people to escape poverty, this section presents the literature review of each of FII model components.

Goal Setting

The first component of the FII model is setting a goal. FII challenges low-income people to set goals that will lift them out of a low standard of living. Lock and Lathan (2006) state that a goal is the aim of an action or task that a person consciously desires to achieve or obtain. Goal setting, then, is the process of establishing the level of performance so as to achieve a certain measurable result. Although goal setting for poverty alleviation is a new research idea for development economics, there exist a large body of literature on the power of goal setting on performance in psychology and management.

In review of studies conducted on different ranges of countries and settings over past thirty five years with close to hundred tasks over forty thousand participants, Lock and Latham (2002) noted that goal setting has been shown to increase performance. Goals can be self-elected, assigned by others and they can be set in cooperation with other participants. According to Dossett and Greenberg (1981), self-set goals result in higher performance and goal attainment as versus goals assigned by others. This makes sense because self-set goals are for the person who owns them. Furthermore, goal setting theory predicts that goal difficulty is a key issue. Specific and difficult goals if accepted lead to higher levels of performance than do easy goals (Locke and Latham, 2006). A study by Harding and Hsiaw (2014) on goal setting and energy conservation found that consumers who set realistic goals save considerable amount of energy.

Overall, the probability of goal achievement increases when people are involved in identifying and setting specific goals, and committed to their goals. Goal commitments can be motivated by the desire to reach an end result people expect because of working towards achieving their goals, or the belief people have on themselves that they can achieve the goal. It also driven by an incentive.

Incentive

The second component of the FII approach is an incentive. The FII provides incentives to low-income people who adopted its approach when they report their progress or achieve their goals. Existing research indicates that providing rewards for goal attainment can increase effort and strengthen individuals' goal commitment which can result in better performance (Predrgast 1999). The relative effects of cash incentives vs non-cash as described in the literature is mixed. Presslee et al. (2013) conducted quasi-experiments at five Financial Services Companies. Employees at two locations received cash incentive for goal achievement while employees at the three locations earned points equal to cash value incentive, redeemable for merchandise. They found that cash incentive resulted in better performance because employees who received cash reward selected relatively more difficult goals than employees who received tangible incentive. Conversely, Jeffery (2009) analyzed in a laboratory study the relative motivational power of cash vs non-cash rewards. He showed that employees who engaged in challenging mental tasks performed better in pursuit of tangible rewards than cash rewards of equal value. On the other hand, Shaffer and Arkes (2009) examined in experiments the preference reversal in evaluation of cash versus non-cash rewards. They found cash versus tangible reward type has no significant impact difference on performance. In another study, Knight et al (2001) stated that when providing incentives are conditional upon goal achievement, rational decision makers will clearly prefer to minimize the risk of losing the reward whenever possible so that they can maximize their chances of getting the reward.

Self-help groups

The third component of the FII model is self-help groups. Anne et al. (2011) reported that a family who is willing to join the FII must recruit six to eight other families who want to make improvement in their standard of living and form self-helping groups. Studies show that Self-groups play a key role in socio-economic activities. Kalra et al. (2013) carried out a case study in India on two self-help groups engaged in agricultural activities. They noted that self-help groups have the potential to contribute to economic development by empowering its member through skills, knowledge, and social networking. Kilpatrick et al (2003) stated that self-groups where members share common values and visions and take on responsibilities within the group including leadership are important to group development. Moreover, the characteristics of group members are important for group effectiveness. For example, Huppi and Feder (1990) examined the roles of groups in rural lending and indicated that the group lending to be successful, groups have to be homogenous and jointly liable.

In conclusion, several studies have been done on goal setting, incentives and self-help groups separately, to my knowledge there is no research has examined the power of goal setting, self-help groups and incentives together as a poverty reduction strategy. This study addresses this gap by using randomized field experiments data from developing countries.

III. The Experiment

In this section, I describe the interventions, the study sites, the basic experimental setup and randomization design and, the timing of the experiments. The study took place in three developing countries, Ethiopia, Indonesia and Colombia. The experiments in each country were designed to test the FII model components. The three main ingredients that the FII approach innovated to encourage the low-income families to use their own resources or capabilities to break the poverty

cycle are: Goal-setting, self-help groups, and incentives. Considering these key ingredients in to account, four interventions were examined and named as follows: Goal-setting "goal", goal-setting and self-help-groups "groups", goal-setting and incentives "incentives", and goal-setting, self-help groups and incentives "FII". Table 1 shows the basic experimental design and the interventions.

The Interventions

The "goal" intervention is common to all the treatments, it is intended to test the goal setting element of the FII model. The FII challenges participants to set goals they thought change their socio-economic status. It could be opening a new business, saving, improving kids' school performance, attending business training etc. Similarly, in the experiments subjects assigned to the "goal" treatment were asked to set life-changing goals. The goals should measureable and provable.

The "group" intervention is aimed at to examine the peer support group component of the FII approach. A Family that is willing to adopt the FII is required self-select six to eight other families and form a small group. The importance of forming self-help group to members is to share problems and achievements, give advice one another, and strengthen social ties and friendships. Likewise, in the experiments subjects assigned to this treatment were placed in small support groups. Group members set personal goals and they are allowed to turn one another for help, inspiration, and share resources.

The "incentives" intervention is designed to explore the incentives for reporting progress aspect of the FII approach. The FII provides small cash reward` when families report their progress or achieve their goals. In this study, individuals assigned to this intervention set personal goals and they were also told that they would receive incentives if the realize their goals. The "FII" intervention is the interaction of the above three treatments.

The study conducted in three different sites: Medellin, Addis Ababa and Jakarta.

Medellin, Colombia

The Municipality of Medellin is the second largest city in Colombia, with an estimated population of 2.44 million. The field experiment in Medellin was conducted by University of San Francisco (USF) students, partnered with The Bank of Opportunities (the biggest financial institution in Medellin). The participants in the experiment were low-income people who own small businesses.

The bank picked 250 clients to participate in the study from its different programs. However, 150 clients showed-up for the first orientation meeting. The researchers explained the purpose of the study to the participants to obtain their agreement, and then obtained their agreement. Participants were asked to fill out orientation surveys. This survey asked for contact details, personal information, and household and business characteristics. The experiment was a five-group design consisting of four treatment groups and two control groups. The study occurred between June and December 2012 and comprised 7 follow-up meetings once every four weeks, in six phases. In the first follow-up meeting, participants filled-out a baseline survey and subjects were randomly assigned to four treatment groups and one baseline control group. The investigators also recruited and end-line control group in order to test any bias that arose in case of diffusion of information between the treatment groups and the baseline control group.

In the baseline control condition (n=19), this group was a pure control group. Subjects to this group did not set any goal, did not form a group, and did not get incentives, but they were required to fill out baseline, mid-point and end-line surveys. They received $13 per survey as a compensation for their time and transportation expenses. The end-line control (n=21) was also a

pure control group they were only required to fill out the end-line survey and received the same compensation per survey as the baseline control group.

In the "goal" treatment group (n=23), all subjects set individual goals. Based on the orientation meeting and survey, the investigators were able to come up with fourteen measurable goals. These subjects were required to select one new goal from the fourteen goals every four weeks over a total of six phases. At the end of every four weeks, the information on goal attainment and sales income was collected. These Individuals received $17 per survey as compensation for filling out goal related surveys, regardless of whether they achieved their goal or not. Some of the goals subjects chose were; attend and complete at least one of workshops in marketing and sales, and save at least $ 15,000 Colombian pesos (8 USD) every week for next four weeks in a savings account etc. The goal achievement verifications for attending at least one workshop were to show registration receipt and completion of certificate. Method of verification for saving goal was to present a bank statement.

In the "group" treatment (n=29), subjects were placed in a small self-help groups. The average number per group was 15 individuals. The self-help groups met every four weeks during the follow-up meeting to discuss goals and ways to help each other. At the end of every four weeks, information on goal achievements and their performance on sales income was measured and they set new goals for the next period. The subjects in this groups were compensated $17 per survey for filling out goal related survey, regardless of whether they achieved their goal or not.

In the "incentives" treatment (n=29), participants set personal goals. They were not placed in a small groups. They were told that they would receive monetary incentives only if they achieved their goals. At the end of each phase, data on goal attainment and sales income was collected, and they set new goals for next phase. The reward was $19 if they achieved their goals or $3 if not.

In the "FII" treatment (n=27), subjects set goals and they were placed in a small self-help groups. They also told they would receive monetary incentive of $19 if they achieved their goals, if not they only receive $3. At the end of every four weeks, information with regard to goal achievement and monthly sales income was measured. Then, they set another new goal for the next phase.

Addis Ababa, Ethiopia

Addis Ababa is the capital city of Ethiopia and where the African Union is based. It is also the largest city in the country, with an estimated population of 3.39 million. The field experiment in Ethiopia was conducted by USF students in collaboration with The Bureau of Labor and Social Affairs (BOLSA). The study was conducted at five different sites in Addis Ababa: ALERT, HAGER, FURNITURE, GASHA and ENDAD. These sites are the place where physically disabled people either work, meet, reside or get different kinds of trainings. The researchers talked about the research idea to all of the participants invited for orientation meetings at each sites and obtained their agreement to participate in the study. The participants in the experiment were low-income physically disabled persons.

As in Colombia, the experiment was a five -group design consisting of four treatment groups and one control group. The study was conducted between June 2013 and August 2013 and comprised five follow-up meetings once every week, in two phases. In first follow-up meeting, participants filled out baseline survey and subjects were assigned to four treatment groups and one control group on the basis of random assignments to sites. The researchers did not randomize at individual levels to avoid spillover from one group to another, because most of the subjects at each site work in the same location.

In the control condition (n=24), this group was a pure control group. Subjects in this group did not set any goals, did not form a group and did not get incentives. However, they were required to fill out baseline and end-line surveys. In the "goal" treatment group (n=13), all subjects set individual goals. Unlike Colombia, they set any goal they thought would change their economic condition. Also, subjects were not required to change their goals for the next phase. It was up to them, they could re-use their first goals or set different goals. Every two weeks, the information on goal attainment and bi-weekly income were collected. Some of the goal participants chose includes; Sell 100 socks in two weeks, and make 320 Ethiopian Birr by doing shoe shining etc. The goal attainment verification method for these examples were to present sales receipts with date and customer phone number. In the "group" treatment (n=20), subjects were placed in small groups. The average number per self-help group was 5 individuals. The groups met every week during the follow-up meeting to discuss goals and ways to help each other. Every two weeks, information on goal achievements and their income was measured, and set another goal for the next two weeks. In the "incentives" treatment (n=16), subjects set individual goals, and did not form self-help groups. They were told that they would receive incentives only if they achieved their goals. Unlike Colombia, the incentives were tangible items like spatula, eating plate, pan etc. Every two weeks, performance on bi-weekly income and goal achievement information was collected. In the "FII" treatment (n=13), subjects assigned in this treatment set goals, and were placed in self-help groups. Group members met and discussed every week during the follow-up sessions. They were also told that they would receive non-cash incentives only if they achieved their goal. Every two weeks bi-weekly income and goal achievement data was collected.

Jakarta, Indonesia

Jakarta is the capital city of Indonesia. It is also the largest city in the country, with an estimated population of 10.176 million. The field experiment in Jakarta was conducted in collaboration with Child Survival Program (CSP). The CSP provides nutritional assistance to mothers and babies. In addition, CSP offers health and business related trainings to mothers. Many groups of mothers attend the programs at the CSP centers. Each group consists of 10-15 mothers. These groups were the ideal candidates to test the component of the FII approach. The CSP invited these groups to an orientation meeting. The researcher explained purpose of the study to these groups of mothers during the orientation meeting and obtained their agreement to participate in the project.

As in Colombia and in Ethiopia, the experiment was a five -group design consisting of four treatment groups and one control group. The study was conducted during the summer of 2012 and comprised five follow-up meetings once every week, in two phases. In first follow-up meeting, participants filled out baseline survey and ten of the mother groups were assigned to four treatment groups and one control group on the basis of group level randomization.

In the control condition (n=19), Subjects did not set any goals, did not form a group and did not get incentive but they were required to fill out baseline and end line surveys. In the "goal" treatment group (n=38), all subjects set individual goals for two weeks. As in Ethiopia, they set any goal they thought would change their economic condition. After two weeks, the information on goal attainment and bi-weekly income were collected. Unlike Colombia and Ethiopia, these subjects in this treatment groups randomly assigned to a different treatment other than "goal" treatment for the next phase (two weeks). This treatment could be the "group", or the "incentives" or the "FII". Some of the activities selected for goal setting in Indonesia includes: Babysitting,

barber, etc. In the "group" treatment (n=31), subjects were placed in small groups. The average number per self-help group was 10-15 individuals. The groups met every week during the follow-up meeting to discuss goals and ways to help each other. After the end of the two weeks, information on goal achievements and their income was measured, and another treatment other than "group" treatment was assigned for the next two weeks. In the "incentives" treatment (n=41), subjects set individual goals, and did not form self-help groups. They were told that they would receive non-cash incentives only if they achieved their goal. At the end of the two weeks, performance on bi-weekly income and goal achievement information was collected and another treatment was assigned. In the "FII" treatment (n=45), subjects assigned to this treatment set goals, and were placed in self-help groups. Group members met and discussed every week during the follow-up sessions. They were told that they would receive non-cash incentives only if they achieved their goal. At the end of the two weeks, bi-weekly income and goal achievement data was collected, and another treatment was assigned for the next phase.

The difference in number of subjects across groups for each country mostly is due to attrition. I carried-out a drop out analysis to see the treatment groups and the control group are comparable by comparing the final sample size between control and treatment groups for countries considered for this study on the key variables. I find no significant difference between the comparison group and the treatment groups for each country except age in Ethiopia. To control for any pre-treatment differences between the control and treatment groups, I will include key baseline variables in the regressions analysis.

IV. Estimation Strategy

To evaluate the causal effects of the interventions, I specify four models. The first two models (equation (1) and equation (2)) measure the effects of treatments on goal achievement. Specifically, equation (1) estimates goal achievement for Indonesia, Ethiopia and Colombia separately whereas equation (2) estimates goal attainment for three the countries together. The last two models (equation (3) and equation (4)) measure the impacts of treatments on economic outcome variables for each country individually and the three countries jointly.

The goal achievement model for Ethiopia, Indonesia and Colombia is specified as follows;

$$Y_{it} = B_0 + B_1 group_{it} + B_2 incentive_{it} + B_3 FII_{it} + \theta X + \varepsilon_{it} \quad (1)$$

Where the dependent variable Y_{it} represents mean goal attainment. The variable goal achievement measures only two possible values: 0 (failure to achieve goal) and 1(success to achieve goal). B_0 is the constant term. $group_{it}$ is a an indicator variable for assignment to 'group' treatment. $incentive_{it}$ is a dummy variable that takes a value 1 if the participant is assigned to 'incentive' treatment. FII_{it} is another indicator variable assigned to 'FII' treatment . X is a vector of controls which includes age and gender. ε_{it} is an error term.

The goal achievement model for the three countries is specified as follows

$$Y_{it} = B_0 + B_1 group_{it} + B_2 incentive_{it} + B_3 fii_{it} + \theta X + \pi c + \varepsilon_{it} \quad (2)$$

The variable descriptions are the same as equation (1) except that this model includes country dummies (πc). The dataset in each country treated as an average per individual instead of a panel for consistency.

I run Ordinary Lease Square (OLS) regression for equation (1) and equation (2). In the above two models, the control groups are excluded from the analysis since they did not set goals.

However, I can still compare the effects of treatments on average goal achievement between treatment groups since subjects were assigned to the four treatments groups are comparable due to random assignment. Hence, the difference in probability of goal achievement between the treatment groups is the effect of the treatments.

The economic outcome model for each country specified is as follows;

$$Y_{it} = B_0 + B_1 group_{it} + B_2 incentive_{it} + B_3 FII_{it} + B_4 goal_{it} + \theta X + \varepsilon_{it}$$

The dependent variable Y represents standardized average weekly income. B_0 is the intercept term, while group, incentive, FII and goal are dummy variables representing the treatments, X is the vector of covariates which includes age, gender and baseline income, and ε_{it} is an error term.

The economic outcome model for the three countries specified as follows;

$$Y_{it} = B_0 + B_1 group_{it} + B_2 incentive_{it} + B_3 fii_{it} + B_4 goal_{it} + \theta X + \pi c + \varepsilon_{it} \quad (4)$$

The variables description of this model is similar to equation (3) except that country dummies have been included in this model.

The economic outcome variables observations from each country have been standardized to make all of the economic outcome variables comparable between countries by using the following formula.

$$Y_{ij,1\sigma} = \frac{Y_{ij} - \bar{Y}_s}{\sigma_{Y,s}} \quad (5)$$

Where $Y_{ij,1\sigma}$ is the standardized value of the economic outcome variable to one standard deviation for data point i for country j, Y_{ij} each data point for country j, $\bar{Y}_s$ the average of all sample observation for country j and $\sigma_{Y,s}$ is the sample standard deviation of all sample observation for country j.

The main advantage of standardizing the economic outcome variables distributions is to make each country's economic outcome variable distribution the same. When these distribution are standardized, they will have a mean zero and a standard deviation of one and the economic outcome from each country can be directly compared. However, the transformation of unscaled variable into standardized values does not change the shape of the original distribution and it does not change the location of each observation relative to the others observations in the distribution. The sign of the standardized values indicates whether the value of the outcome variable is located above the mean when it is positive, located below the mean when it is negative and equal to the mean when it is zero.

V. Results

The effects of Treatments on goal achievement

Figure1 shows the proportion of goal achievement for Indonesia, Colombia and Ethiopia under different treatments. Only considering "goal" treatment, 86 percent of the subjects achieved their goals in Indonesia, 89 percent in Colombia and 65 percent in Ethiopia. Looking at the "incentives" treatment, 92 percent of the participants achieved their goals in Colombia, 86 percent in Indonesia and 75 in Ethiopia. Focusing on only FII treatment, the share of goal achievements are, 96 percent, 96 percent and 88 percent in Colombia, Indonesia and Ethiopia respectively. The percentage of goal achievement is the highest for "FII" treatment. The proportion of goal achievement of subjects in the group treatment is the lowest in the three countries compared to the other three treatments. The proportion of goal achievements are 76 percent, 61 percent and 62 percent in Colombia, Indonesia and Ethiopia respectively.

The empirical approach estimates the effects of the four treatments on goal achievement using each country dataset separately and combined. Table 2 reports estimates of "goal achievement" in

equation (1) and equation (2) using Ordinary Least Squares regression estimation technique. Since all the treatments are dummy variables, the "goal" treatment is used as the reference category and all of the other treatments are compared to the "goal" treatment.

The purpose of the "group" treatment is to assess the effects of self-help groups on the member's performance for goals achievement. Studies predict that self-help groups have the advantage of empowering its members by pooling ideas, skills, and resources, and by motivating each other to achieve better results. The results obtained in this study indicated mutual support groups have the opposite impact. The coefficients of "group" treatment on goal achievement is either significant and negative or insignificant. The "group" treatment is negative and statistically insignificant in Ethiopia and Colombia, but it is statistically significant and negative in Indonesia (where all of the participants were women) at 5 percent significance level. Using the three countries data together, the coefficient of "group" treatment carries a negative sign and it is insignificant at 5 percent significance level. A possible explanation for this unexpected result is in the FII model families self-select one another to form peer support group whereas in the experiments participants were placed in the "group" treatment randomly. Therefore, there is a possibility that participants placed in the groups do not know each other well, or lack sense of belonging and a common vison.

Economic theory predicts that incentives are a powerful tool for goal attainment as they induce efforts towards goal achievement. For example, Predrgast (1999) stated that providing rewards for goal attainment can increase effort and strengthen individuals' goal commitment which can result in better performance. The present study result is consistent with the theory and my expectation for Ethiopia. The coefficient of "incentive" is positive and significant at 10 percent significance level. The results for Indonesia and Colombia are contrary to my expectation .The

estimates of "incentive "for Indonesia and Colombia are positive, but it is statistically insignificant. Overall, using the three countries dataset, the estimates of "incentive" is significant at 10 percent significance level.

The estimates of the "FII" treatment (which is the amalgamation of goal, self-help groups and incentives) are significant and positive for Colombia and Ethiopia at 1 percent significance level. However, the result for Indonesia is positive but insignificant. The result of the "FII" treatment for the three countries is significant at 10 percent significance level. The overall analysis of goal attainment using the combined dataset reveal that the "FII" treatment has the highest probability of goal achievement.

The effects of treatments on economic outcome

First, I will estimate the effects of the four treatments on economic outcome using each country dataset separately and then combining the countries datasets. Since I have four treatment groups and one comparison group for each country, I can evaluate the difference in impact between the treatment groups and the control group with respect to the "goal" treatment, the "group" treatment, the "incentive" treatment and the "FII" treatment because of the random assignment. The main aspect of interest is to see whether the "FII" intervention has improved the economic outcome variable. Table 3 presents the estimates of the effects of the different treatments on standardized income variables after controlling for age, gender, and baseline income and country dummies. I estimate equation (3) and equation (4) using Ordinary Least Square (OLS) regression.

Goal setting is the key component of the interventions, it is common for all of the treatments. Goal setting theory predicts that there is a positive association between goal and performance (Lathan & Lock, 2007). Moreover, prior research found that goal setting has larger impact on performance than non-goal-setting situations. (Ivancevich & Mcmahon, 1982). Consitent with the

the theory, the estimate for "goal" treatment for Indonesia shows postitive results at the 5 percent singificance level. Wheras the coeficients of "goal' treatment for Ethiopia and Colombia are negative but insignificant. Overall, using the three countries dataset the goal treatment coficient is significant at a 10 percent singificance level.

The self-help groups can benefit each other through counseling, sharing skills and information, and giving advice. This analysis again shows surprising results for the "group" treatment. This intervention failed to have any positive and significant impact on economic outcome variable in Ethiopia, Colombia and Indonesia. Moreover, the three countries regression analysis result indicates the estimates of "group" treatment is positive but insignificant.

Result for "incentive" treatments for economic outcome are mixed. The estimates of "incentive" treatments are positive and statistically significant in Ethiopia and Indonesia at 5 percent significance level fits with prior research by (Jeffery 2009). On the other hand, there was no effect obtained for "incentive" treatment for Colombia with respect to sales income performance during the intervention.

The FII follow-up study on hundreds of families who adopted the FII approach in various cities in United States show that the families' income has consistently jumped over 20 percent in two years (FII, 2011). Similarly, in this study the "FII" estimates are positive and significant at a 1 percent significance level in Ethiopia, at a 5 percent significance level in Colombia and at a 10 percent significance level in Indonesia. The "FII" group achieves superior economic outcome improvements compared to "goal", "group" and "incentive treatments in Colombia, while the "incentive" group achieved highest income increase in Indonesia and Ethiopia. The three countries regression result also reveal that the "FII" treatment is significant at 5 percent significance level.

In general, the "FII" treatment is the only intervention that is positive and significant for each country and the three countries as a whole.

VI. Conclusion and Policy Implication

This study uses randomized field experiments conducted in Indonesia, Colombia and Ethiopia to evaluate the efficacy of the components of the Family Independence Initiative model as a poverty alleviation strategy in developing countries. The FII encouraged the poor to utilize their own abilities and resources to break the cycle of poverty by using the power of goal setting, self-help groups and incentives. The FII has been successful in eradicating poverty.

To test the FII approach, a five-group experiment was designed in each country, and subjects were randomly assigned to one of the five groups named as follows: 1) goal-setting "goal", 2) goal-setting and group "group", 3) goal-setting and incentives "incentives", 4) goal-setting, group and incentives "FII" and 5) control group. I examined the effects of the treatment on goal achievement and economic outcome.

The goal achievement estimation model did not include the control group because this group did not set any goal. The goal achievement variable takes two values: 1 if the subjects achieved their goals and 0 otherwise. The dependent variable (average goal achievement) measures the mean goal accomplishment throughout the interventions for each treatment. The "goal" dummy variable is suppressed and all other treatments are compared to it. The economic outcome models measure the impacts of treatments on economic outcome variables for each country individually and the three countries as a whole.

The findings of the "group" treatment are surprising. The results show that groups without incentive made either negative or no contribution to members' goal realization and economic well-being. The "group" treatment has no impact on goal accomplishment in Ethiopia and Colombia

(where the treated groups consists of male and female participants), but it has a negative effect on goal achievement in Indonesia (where the treated groups consists of only female participants). Moreover, I detect no significant result for this intervention with respect to the economic performance for the countries considered for this study. The basic reason for the lack of positive impact for the "group" intervention is that subjects were placed in small support groups randomly in the experiments, as opposed to the self-select support groups approach in the FII model. As a result, there is a possibility that participants placed in the group did not know each other well, or lack a sense of belonging, trust and a common vison. Furthermore, the existing studies suggest that the self-help groups to be successful, the group members should have been self-selected and homogenous (Gomez 2005; Huppi and Feder 1990).

The result shows that the "goal" treatment has a positive and significant effect on the economic outcome variable in Indonesia, but it is statistically insignificant in Colombia and Ethiopia. The positive outcome of "goal" intervention is in line with the basic concept of the goal-setting theory of motivation and the studies that has found goal-setting alone has a power to influence motivation, goal commitment and organizational performance (Wright 2007; Ivancevich & Mcmahon 1982). The significant result for the "goal" treatment without group and incentive is encouraging because it shows that goal commitments can be motivated by the desire to reach an end result people expect for working towards achieving their goals.

There is sufficient strength in the finding to suggest that incentive schemes can play a great role in influencing income. The "incentives" treatment is resulted in a positive and significant effect on income improvement in Ethiopia and Indonesia (where the participants received non-monetary incentives). The "incentives" treatment has no impact with regard to goal achievement and income generation in Colombia (where the participants received monetary incentives).

Providing incentive is more powerful when it is interacted with goal-setting and group. The “FII” is the only treatment that achieves economic outcome improvement in all the countries considered for this study. Overall, there is strong evidence in the findings to suggest that the FII treatment could be a powerful tool for poverty alleviation in the developing countries.

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Table 1 Experimental design and the interventions

Treatment groups	Num. of participants in each Country			Interventions		
	Colombia	Indonesia	Ethiopia	Set goals	Placed in a small groups	Received incentives
"Goal"	23	38	13	✓		
"group"	29	31	20	✓	✓	
"incentives"	29	31	16	✓		✓
"FII"	27	45	13	✓	✓	✓
Control	19	19	24			

Figure 1 Proportion of Goal Achievement per Country for Each Treatment Group

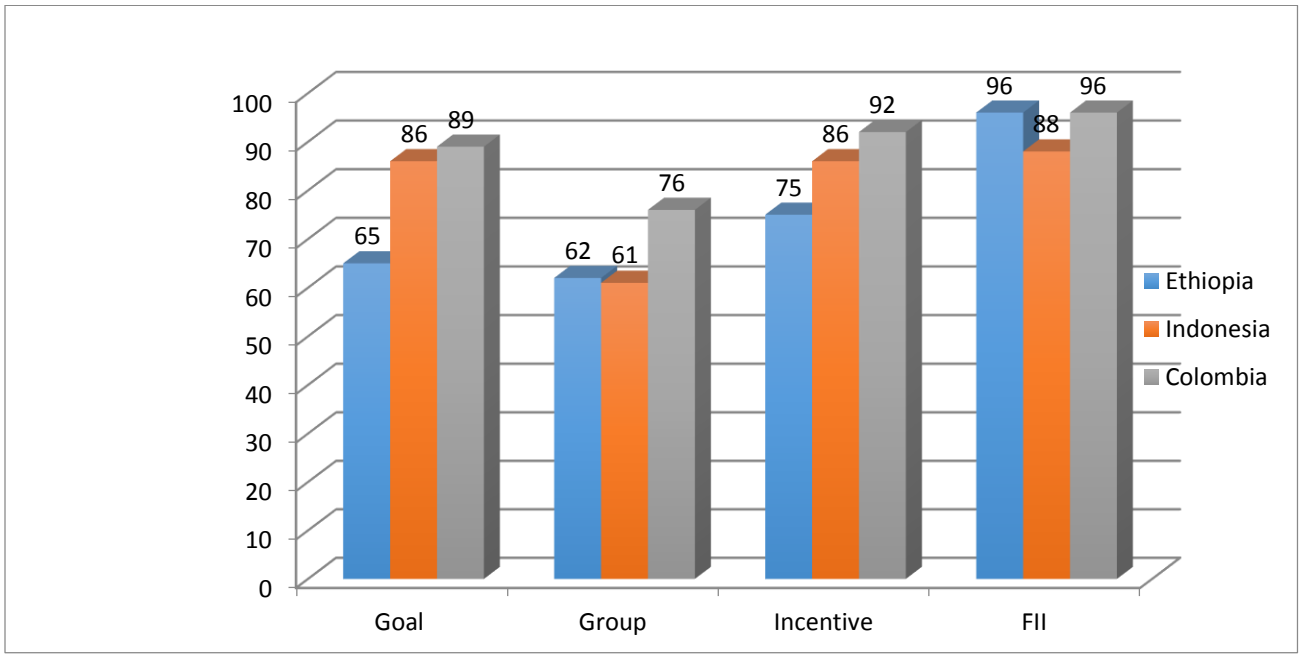

Table 2: Impacts on Goal Achievement
Dependent Variable: Mean Goal Achievement
---OLS Estimations, standard errors are in parentheses---

Variables	Ethiopia	Indonesia	Colombia	3 Countries
Num. of Observations	N=55	N=155	N=107	N=317
Intercept	0.709	0.757	0.719	0.685
	(0.174)***	0.163)***	0.092)***	(0.084)***
Group	-0.068	-0.250	-0.075	-0.155
	(0.127)	0.086)***	(0.064)	(0.051)***
Incentives	0.218	0.056	0.072	0.088
	(0.121)*	((0.080)	(0.064)	(0.050)*
FII	0.344	0.022	0.175	0.120
	(0.128)***	(0.078)	0.064)***	(0.049)**
Age	-0.002	0.003	0.002	0.002
	(0.004)	(0.004)	(0.002)	(0.002)
Colombia				0.062
				(0.053)
Indonesia				0.072
				(0.049)
R2	0.22	0.10	0.15	0.11

* p≤.1; ** p≤.05; *** p≤.01

Table 3: Economic Outcome
Dependent Variable: Standardized Weekly Income
---OLS Estimations, standard errors are in parenthesis---

Variables	Ethiopia	Indonesia	Colombia	3 Countries
Num. of Observations	N=84	N=173	N=125	N=382
Intercept	-0.954	-2.270	-0.651	-0.871
	0.199)***	0.473)***	(0.357)*	(0.251)***
Goal	-0.063	0.737	-0.126	0.259
	(0.110)	(0.279)***	(0.255)	(0.163)
Group	0.185	0.442	-0.286	0.187
	(0.113)	(0.305)	(0.237)	(0.162)
Incentives	0.420	0.763	-0.153	0.396
	(0.111)***	(0.279)***	(0.239)	(0.159)**
FII	0.413	0.507	0.486	0.442
	0.105)***	(0.270)*	(0.239)**	0.159)***
Female	0.060		0.089	0.144
	(0.081)		(0.156)	(0.134)
Age	0.001	0.036	-0.002	0.000
	(0.003)	(0.012)***	(0.007)	(0.005)
Initial income	0.036	0.000	0.004	0.023
	(0.002)***	(0.000)***	(0.000)***	0.000)***
Colombia				-0.658
				(0.149)***
Indonesia				0.221
				(0.152)***
R2	0.92	0.47	0.40	0.35

* p≤.1; ** p≤.05; *** p≤.01