

SHORT TERM IMPACTS OF LABOR INTENSIVE PUBLIC WORKS FOR YOUTHS IN COTE D'IVOIRE

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Context: the PEJEDEC program in Cote d'Ivoire

- PEJEDEC is a youth program launched in 2011 after the post-electoral crisis in Cote d'Ivoire
- Many components to support youth labor market integration
- One component is **Labor Intensive Public Work (LIPW)**
- Objective enrol 12500 youth in LIPW in 4 waves
 - Wave 1 : January 2013 to June 2013
 - **Wave 2 : July/august 2013 to February/March 2014**
 - Wave 3 : March to August 2014;
 - Wave 4 : September to February 2015

LIPW in the world

- The purpose of LIPW: provide employment and earnings for a short time period to precarious population
- They have been used for long in developing countries
- Frequently used in Côte d'Ivoire, first LIPW implemented in the mid 2000's
- **Now a mature program in Cote d'Ivoire**

LIPW in the world

- Programs used world wide
- Introduced first in India as a safety net program aimed at providing earnings to populations after weather shocks
- Progressively
 - Used to serve other populations: youth affected by or involved in armed conflicts
 - Considered more as an employment program

LIPW in the world now

- Duality of LIPW:
 - Safety net program: Provide a short run income to poor people
 - Employment program: Durable insertion in the labor market
- An enduring criticism: benefits are only in the short run
 - Stigmatization –provide experience of little value
- Some “augmented version” of LIPW easing the transition to improved position after LIPW:
 - Matching grant incentivizing savings
 - Training

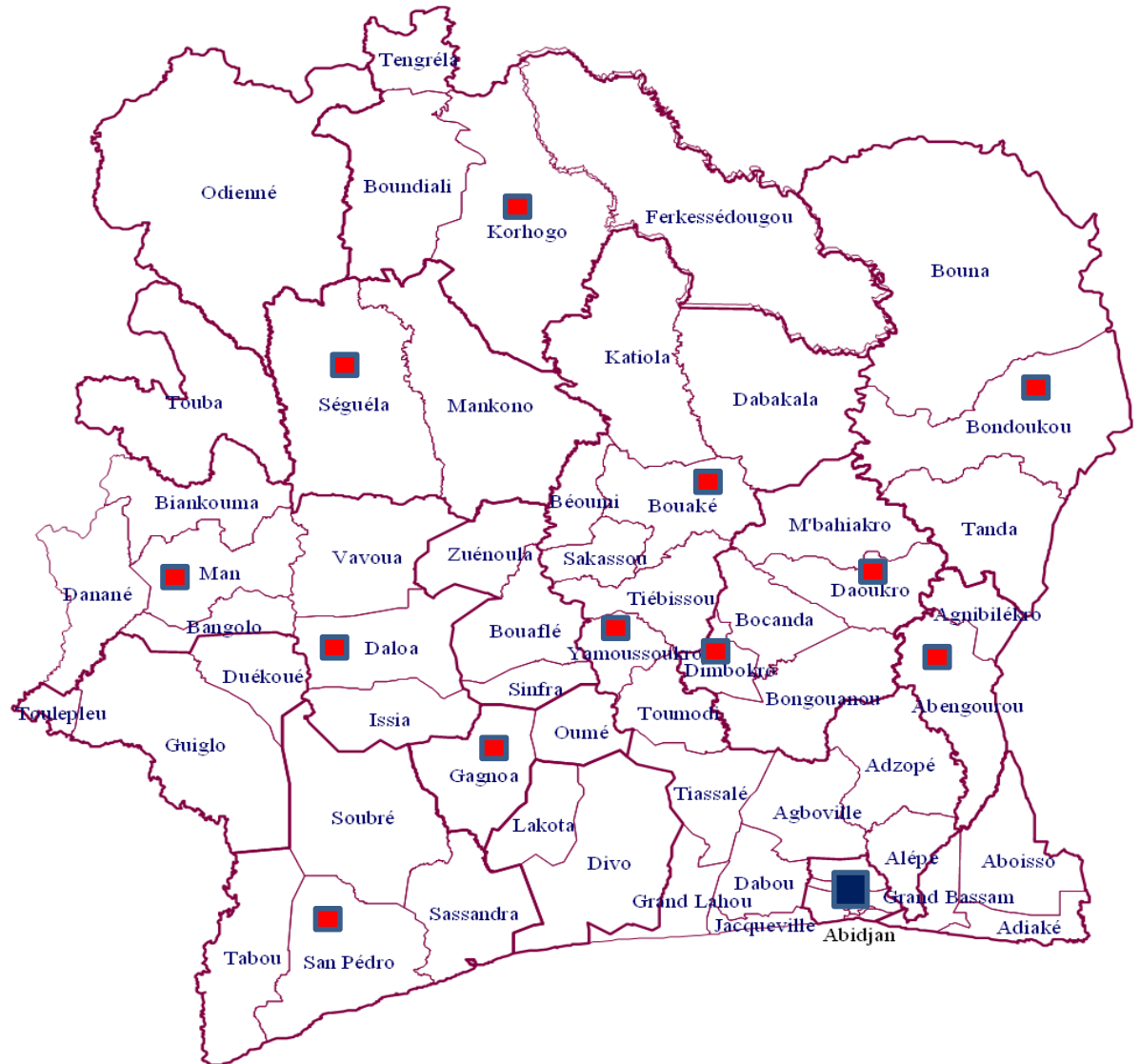
PEJEDEC's LIPW

- Provide temporary employment opportunities to youths
- Target group: youth (18-30), 30% women
- Coverage: 16 localities in Cote d'Ivoire (urban areas)
- 6-month job, ~6h per day, 5 days a week
- Salary is minimum daily wage:
 - 2500 FCFA or US\$ 5/day,
 - **Approximately 55,000 FCFA or \$US 100 per month**
 - Paid on bank accounts (opened by the program)
- Youths work on road maintenance ('brigade' of 25 youth with a supervisor)

LIPW Coverage

16 towns:

- District Abidjan (Abobo, Koumassi, Marcory, Yopougon),
- Bouaké,
- Yamoussoukro,
- Korhogo,
- San Pedro,
- Man,
- Daoukro,
- Dimbokro,
- Bondoukou,
- Abengourou,
- Daloa,
- Gagnoa,
- Séguéla



Complementary training

- Objective is also to facilitate insertion into better employment upon graduation
- LIPW program includes basic life skills training (modules on HIV-AIDS, citizenship, hygiene – 40 hours)
- **Public work “Plus”** : tests two types of complementary training
 - **Self-employment training:** basic entrepreneurship training to help manage household enterprises and facilitate entry into self-employment (80 hours +20 hours follow-up post training),
 - **Wage employment training:** Job search training and sensitization on wage employment opportunities to facilitate access to wage jobs (identify wage jobs opportunities, job search skills, CV production, job interview practice,...) (80 hours)
- Training tailored for LIPW beneficiaries (content, delivery,...)

Why evaluate LIPW ?



Why evaluate?

- Costly programs
 - We do not yet compute exactly the cost of the program but there is the wage and also all the work infrastructure
- Almost no impact evaluation of these programs
- Need evidence to address tough questions like
 - Impact in the **short run** and in the **long run**
 - Impact of **additional trainings**
 - Heterogeneity of impacts **and targeting**
- Other key question.
 - Impact on economic outcome (employment, earnings, savings) but also impacts on **behavior**

Theory of change (0)

- Limited knowledge about youth applying to LIPW
- Mainly views and beliefs about them:
 - Limited access to work or at least to good jobs
 - Limited ability to save because of a precarious situation
 - Might also be engaged occasionally in criminal activity

Theory of change (1)

1. First step is employment and earnings
 - LIPW enlarges the set of employment opportunities accessible to youths, they should reorganize their work activity and their earnings should increase
 - How large is the reorganization: is there some substitution?
 - “Return of LIPW”:
 - For a 55,000 FCFA distributed wage what is the impact on income?
 - Heterogeneity of impact: Is the impact the same for everybody

Theory of change (2)

2. The second step of the theory of change is usages of earnings:
 - Different important aspects
 - Basic needs spending
 - Investments
 - Savings: Are youth able to build savings thanks to increased income?
 - Side effect of income : temptation goods spending?

Theory of change (3)

3. The third step is about youth attitudes
 - Quite difficult to measure but is there a change in the way youth see their future?
 - Are they more optimistic? Do they have an improvement in self-esteem?
 - Is there an impact on pro-social behavior – on aggressiveness?
4. What is the impact on violence, aggressions and criminality?
 - Incapacitation because of LIPW : less occasion of criminal activity
 - Earnings in the short run and better expectations in the future due to LIPW does it lead to a change in perceived criminal activity profitability

Theory of change (4)

5. Three broad possible scenarios for the after-LIPW
 - a) Increased savings, gains in experience, if any, allows launching or expanding IGA or finding a better position
 - b) Increased savings, if any, allows coping with shocks on future earnings but not to launch new IGA; LIPW lasts for a while but then disappears
 - c) Activities before LIPW were deeply reorganized to participate in LIPW – hard to restart them as before: LIPW has a negative impact on income in the long run

Theory of change (5)

6. Does providing complementary training in addition to LIPW facilitate transition into employment upon exiting from the program?
 - Is training for transition into wage or self-employment more effective?

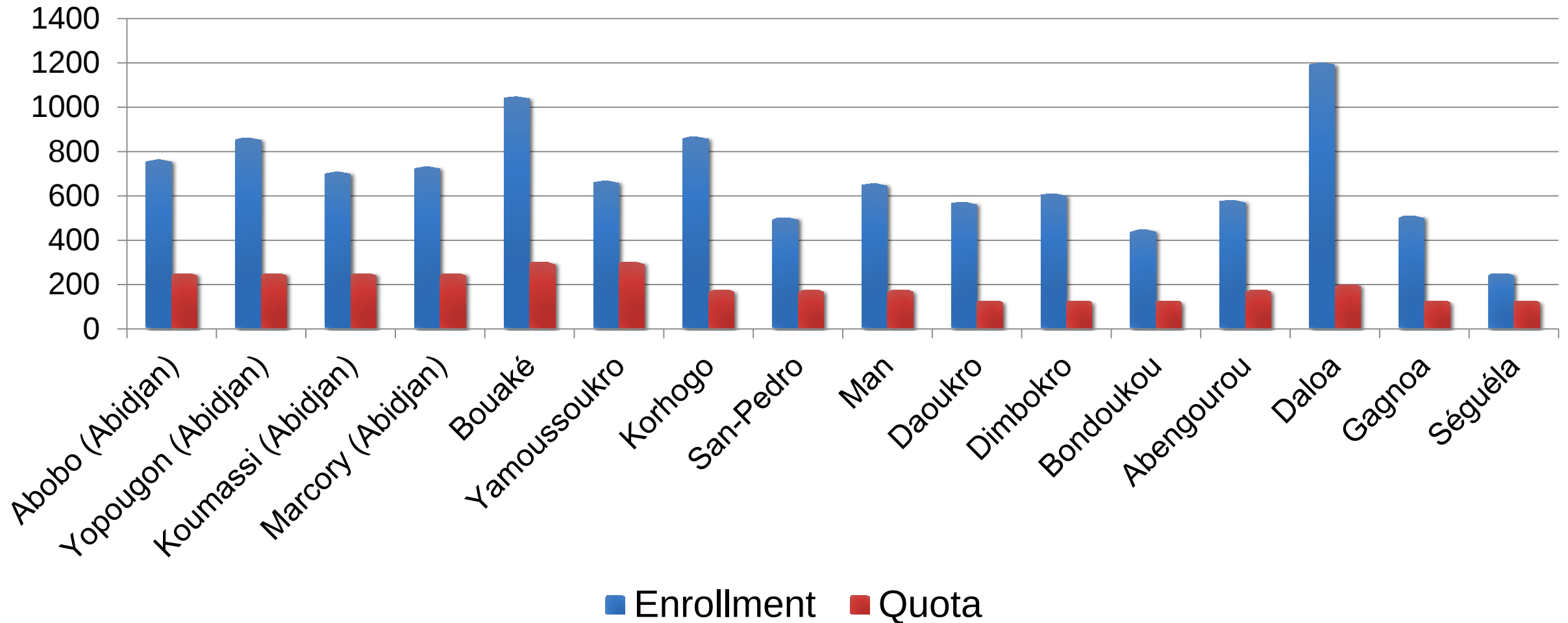
The design of LIPW experiment



LIPW assigned using a lottery

- **This is the standard procedure adopted by the implemented agency AGEROUTE**
 - Perceived as fair and transparent especially in the post-crisis context.
- Implemented at the local level, separately for men and women
 - Quotas of slots reserved for women at each lottery session
 - Large local advertisement campaign of LIPW
 - Enrolment session: 12000 youth for 3125 slots available
 - Registered individual are invited to participate to a public lottery
 - Each individually draw a number at random from a hat and show it to the rest of participants
 - Youth with the lowest number are selected

Enrolment and Participation by locality

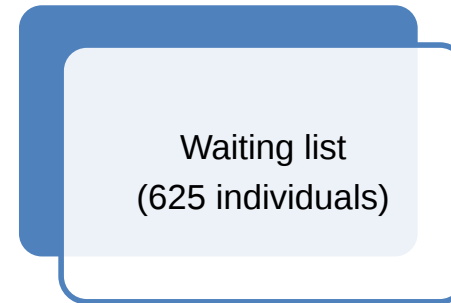
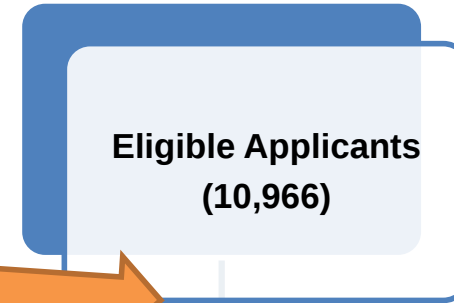


Random assignment to additional training

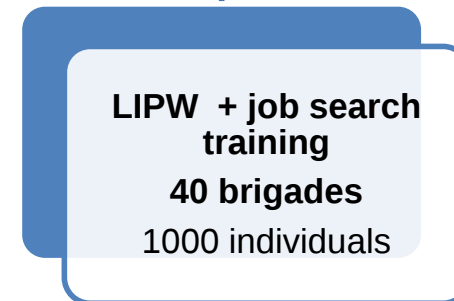
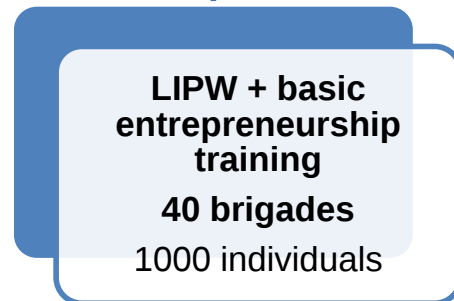
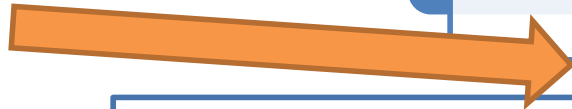
- **Two types of additional training were tested**
 - A Job search skill training
 - A self employment training
- For the purpose of the LIPW program youth are working in brigades of 25 youth
- **Random assignement to three groups by « brigade » according to their random draw: 120 brigades**
 - Brigades LIPW: 45
 - Brigades LIPW + Training IGA: 40
 - Brigades LIPW + Job Search Skill training: 40

Experimental Design

Public lottery to select LIPW beneficiaries among applicants



Randomized assignment of complementary training by brigade



Which comparisons to make?

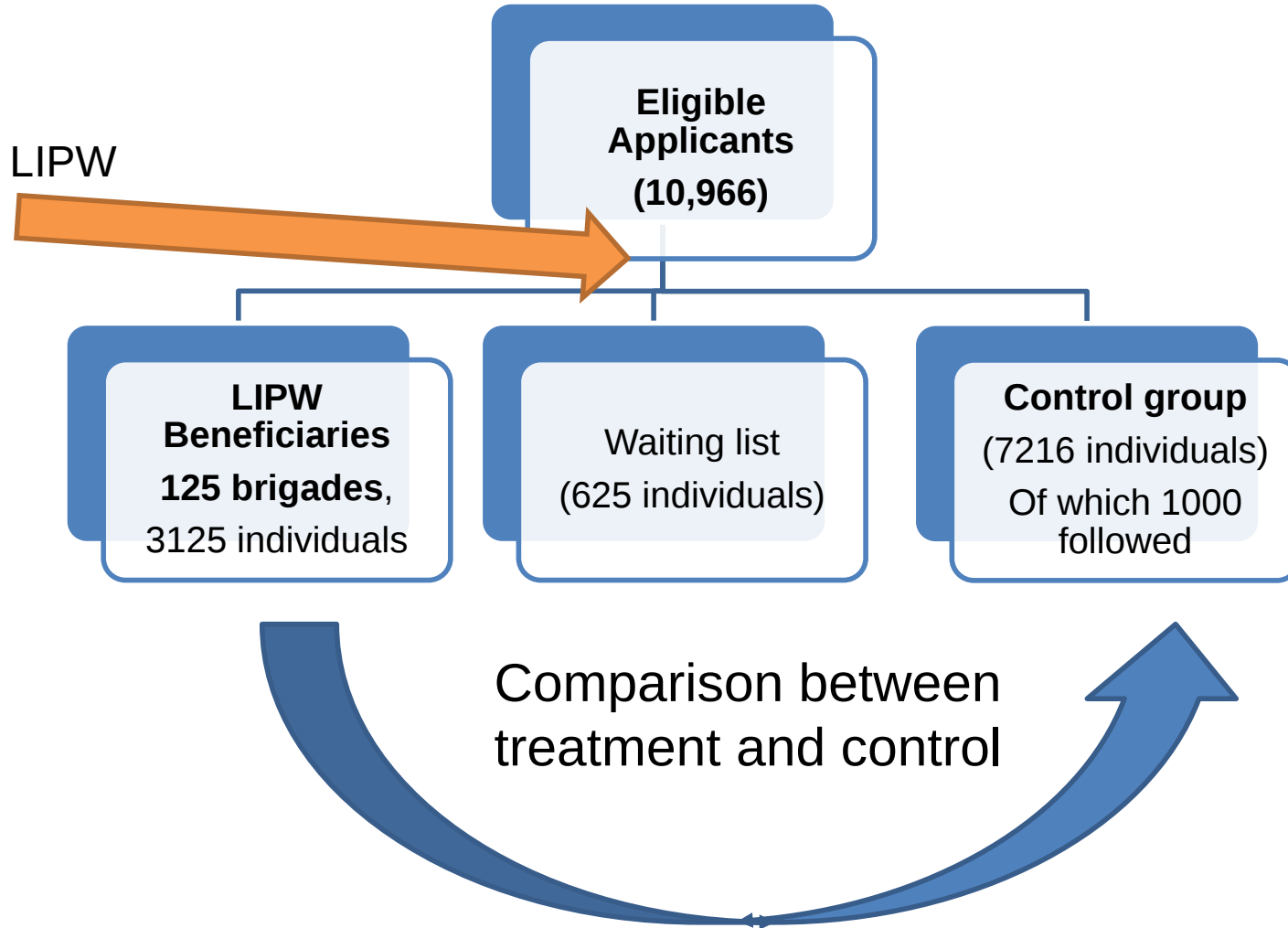
	Groupe test	Groupe Témoin
Medium term Midline survey	Participants	Non participants
Medium term Endline survey	40 brigades without additional training	Non participants
Training+LIPW Endline survey	45 brigades with additional training	Non participants
Training Endline survey	45 brigades with additional training	40 brigades without additional training

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Today: medium term results

Public lottery to select LIPW beneficiaries among applicants



Key partners



Cooperation between many different institutions

- PEJEDEC: provide funding and procurement (surveys – additional training)
- World bank : additional funding and technical advise to PEJEDEC, organize the work of the research team
- AGEROUTE run the program
- Research team: Pejedec – World Bank – researchers: design – additional training – surveys – monitoring and evaluation – analysis
- ENSEA : surveys
- Many different tasks : enrolment, lottery, surveys, program
- Time constraints, but rigourous implementation

Program Implementation

- Key to know if the program was really implemented
- We test programs as they have been or are implemented
- **But we first of all test ideas:** do the mechanism in the theory of change work?
- From this point of view it is very important that the program was correctly implemented
- We are not very interested in discovering that the evaluation did not find impact because the program was not well implemented

Implementation of LIPW

- AGEROUTE as a long experience in implementing the program
- They do that very rigorously
 - Participants are managed by competent brigade leader
 - They do the job they are asking for and get the corresponding work experience
 - They are paid the contracted amount in due time

Additional training

- They were tailored for the experiment
- A precise description of the training we wanted in the call for proposal
- A close monitoring of its conception: quality of the content and pedagogy. Not easy to train youth with very little education
- A close monitoring of the delivery of training in the field
- Was a long highly demanding process: one member of the team was almost exclusively working on that for two months
- Training were provided at the end of the LIPW
- A small extension of LIPW so that participants can attend training

Power calculation



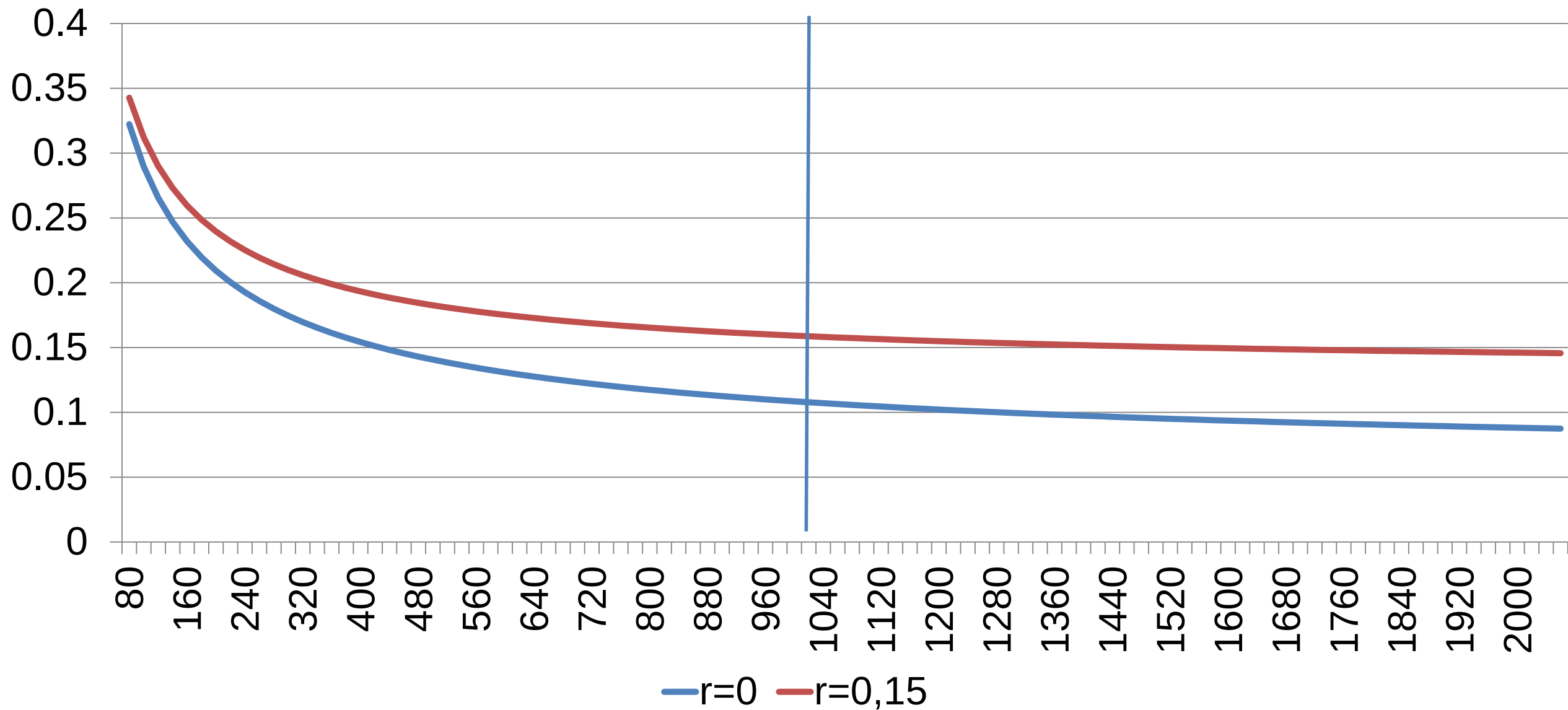
As you know: a first order question

- Number of participants in the LIPW is given : 3125 – however how many youth in the control group do we need?
- What is the power of the experiment in the midline if only 85 brigades are to be surveyed?
- What is the power of the endline comparisons?
 - 45 brigades in the LIPW without training
 - 40 in each LIPW with training

Example: number of youth in control group

- 85 brigades surveyed in the treatment group at midline
- How many youth in the control group do we need?
- Minimum Detectable Effect: what is the smallest impact that the experiment will be able to detect?
- Compute it as a function the standard error of the outcome variable
- Depend on the correlation between individuals within a brigade

MDE as a percent of standard error



Surveys lasted from 1 to 1.5 hours

- **Modules on employment :**
 - 2 main activities investigated in detail, along with a module on “remaining additional activities”.
 - Ask questions about type of activity, status, hours worked and earnings
 - Separate module main self-employment activities directly investigated (including investments and assets)
- **Module on job search :** channels, methods, reservation wage,...
- **Employment history module, including activities and earnings month by month** for the 12 months after exit from public works program (endline)
- **Modules on expenditures, assets and savings**
- **Modules on attitudes, socio-emotional skills and risky behavior** (list experiments)

Implementation of surveys: a huge work

- In person survey
- Several team of enumerators and supervisor moving in Cote d'Ivoire to survey the different areas where program was implemented
- A precise time schedule: can stay in a given area for a given amount of time
- Many youth were not surveyed in this first round because they were impossible to find (moving – travelling)
- At the end of this phase non response was **2.8%** in treatment group and **10.5%** in control group

Tracking non respondent

- Identify non respondent eligible to tracking
- Randomly assign part of them to be tracked
- We determined the share so that the power loss was less than 2.5% compared to surveying everybody
- **136** youth were eligible to tracking
- We ended up with the objective of finding **91** of them that were randomly chosen of which **84** were found
- Send a specific team tracking youth: phone contact – appointment – in person meeting.
- In the end non response rate : **1.7%** in treatment (98.3%) and **3.7%** in control (96.3%). A 2% remaining difference

Sample and Surveys

JUNE-JULY 2013

Baseline survey: 4 160 youths

- **3 125** in treatment group and **1 035** in control group
 - Individual Questionnaire (and modules on household)
 - Collected by ENSEA
 - Response Rate: **98,5%**
 - Balanced

NOVEMBER-DECEMBER 2013

Midline survey: 3 035 youths and their households

- **2 000** in treatment group and **1 035** in control group
- Individual Questionnaire (and modules on household)
- Collected by ENSEA
- Extensive tracking (Jan-Feb 2014)
 - Response rate: **97,4%**
 - Balanced

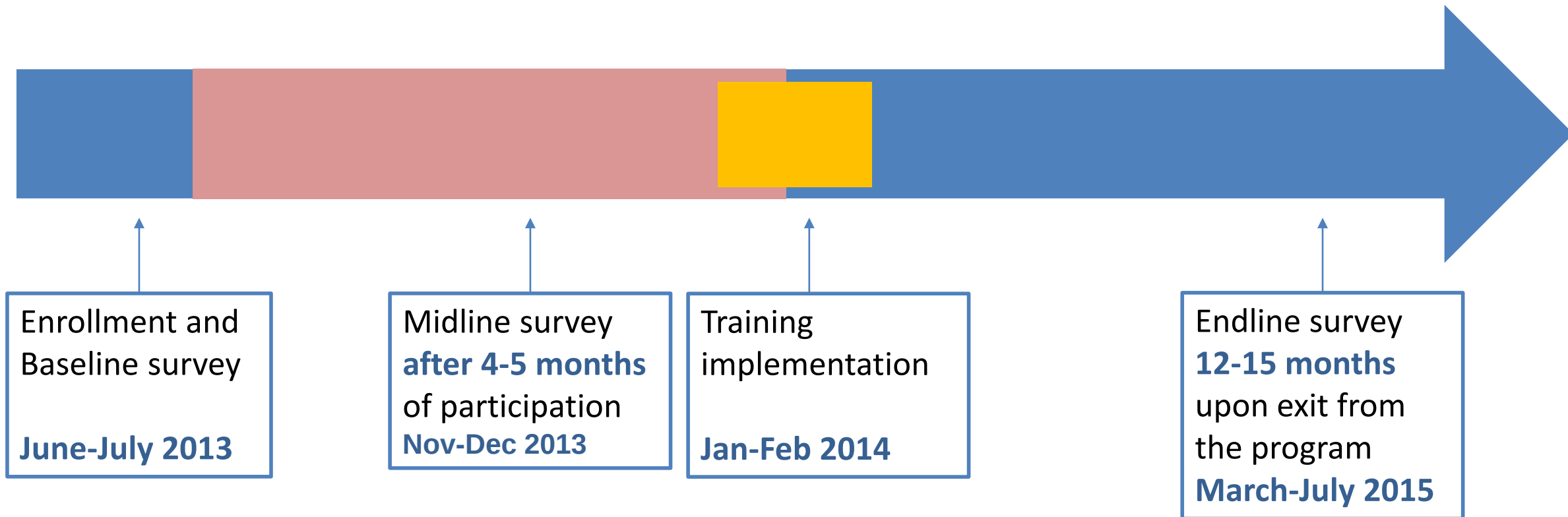
MARCH-JULY 2015

Endline survey: 4 160 individuals and their households, 200 additional controls

- **3 125** in treatment group
- **1 035 + 200** in control group
- Individual Questionnaire (and modules on household)
- Collected by BCP-Emploi
- Ongoing tracking (Sep 2015)
 - Response rate: 92.3%

Timeline

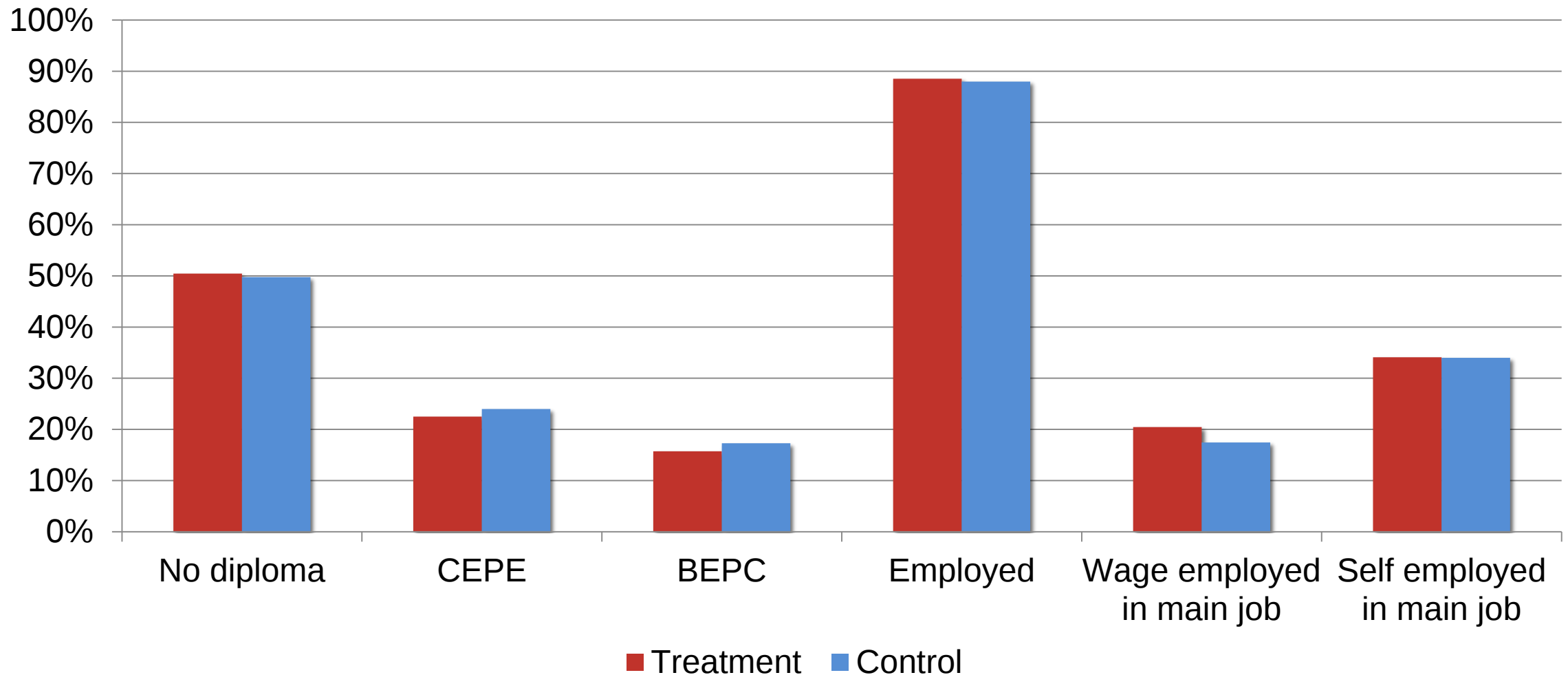
LIPW operates in 4 waves, impact evaluation focuses on **wave 2 : July/August to February/March 2014**



Balancing

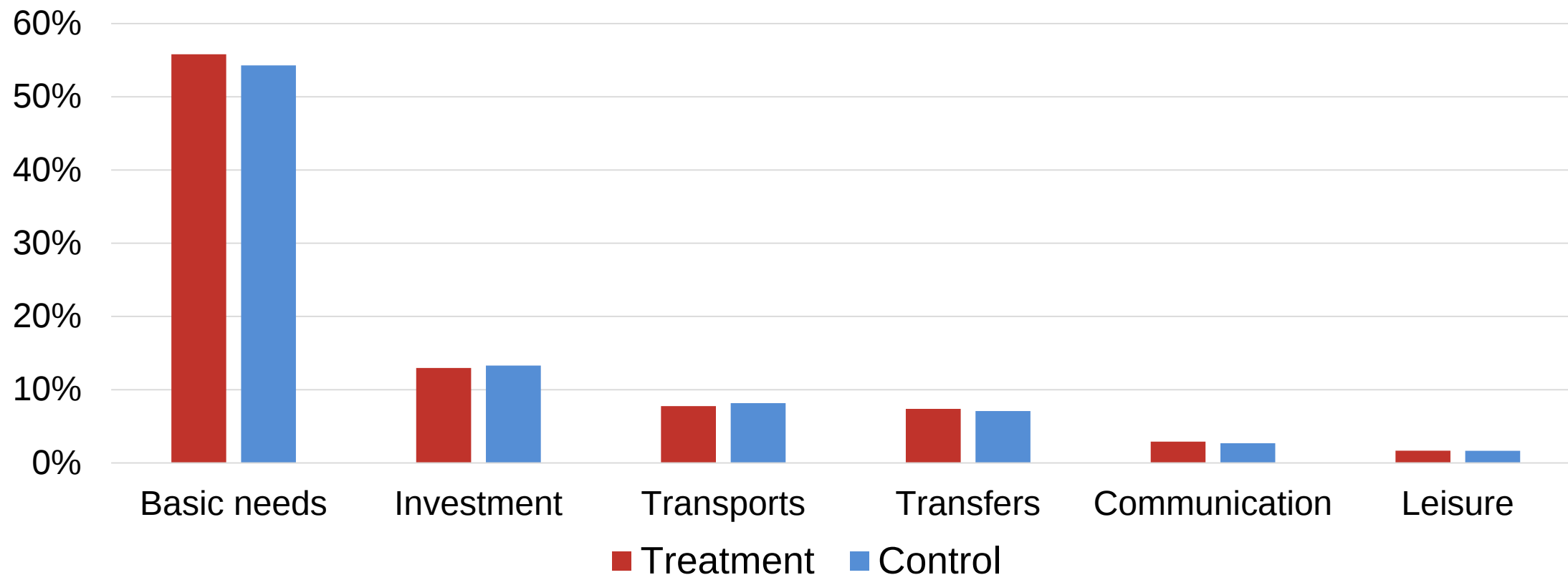


Randomization produced balanced samples at baseline



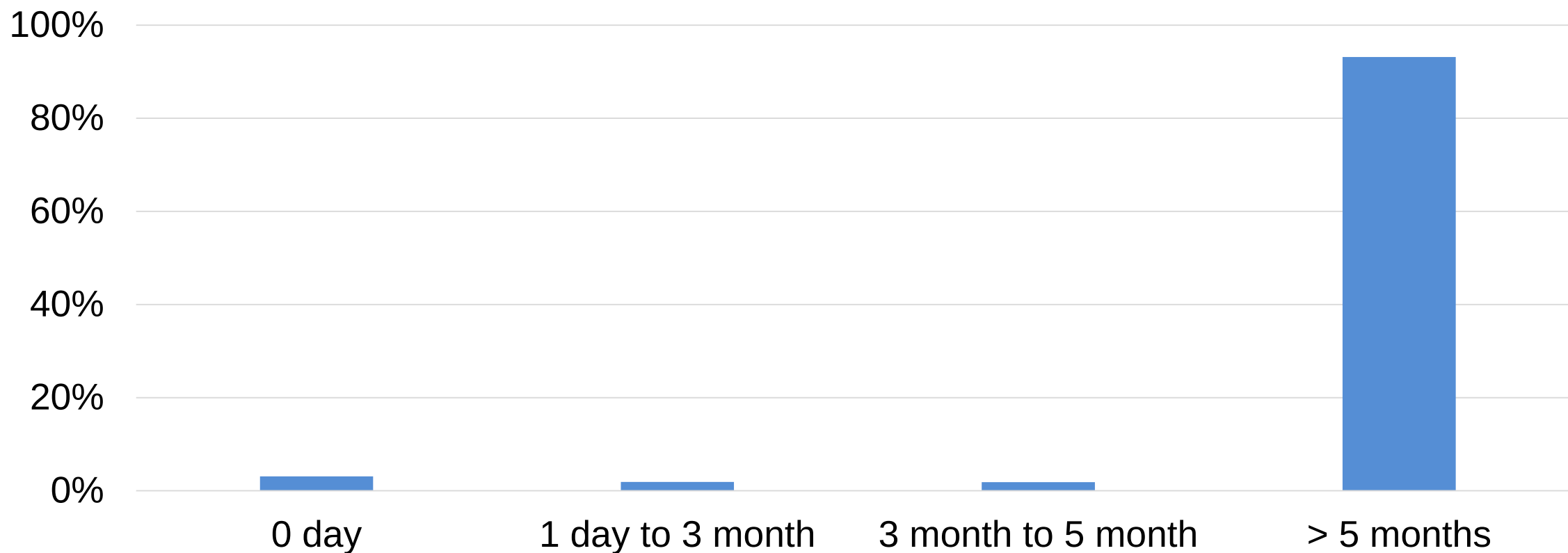
Randomization produced balanced samples at baseline (2)

Share of respondents declaring facing constraints in different types of expenditures



High compliance with participation in public works

Number of days in Public Works Program



93% of the treatment group stayed at least 5 months in the program.

Midline results

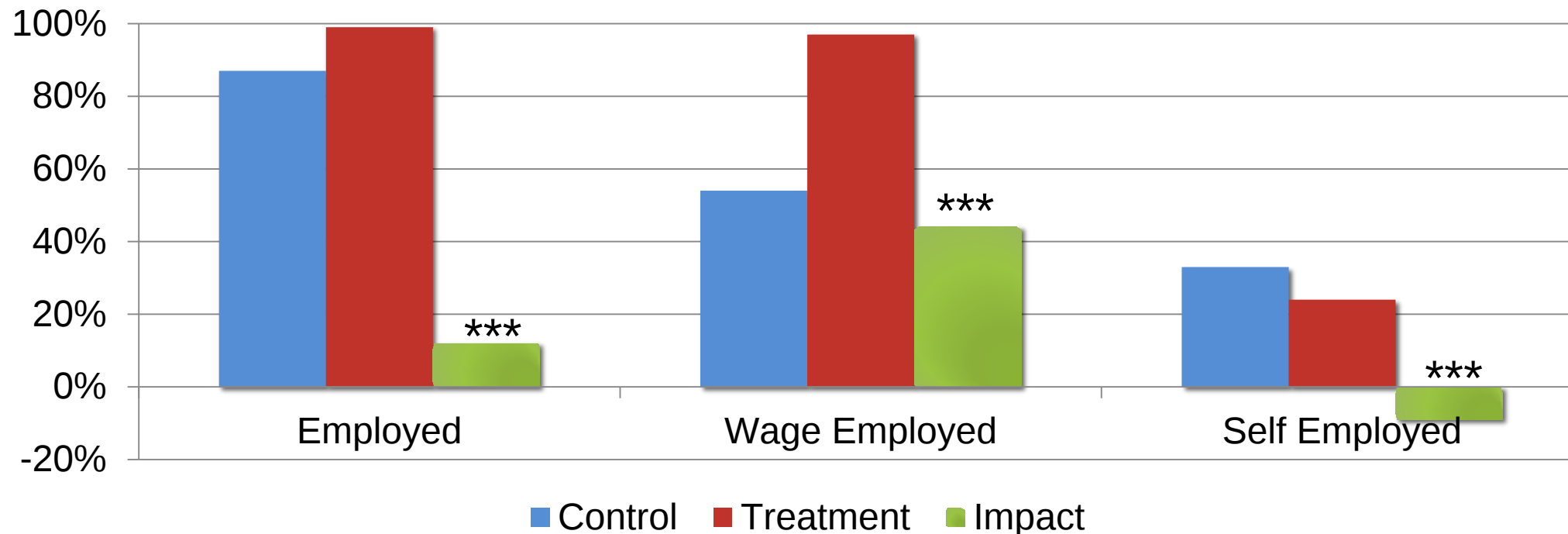
(~ 5 months after the start of the program, just before start of training, and 1-2 months before exit)



Several dimensions

- 1. Employment status, hours of work and earnings**
 - a. Important dimension is the quality of employment
 - b. Heterogeneity of impacts
- 2. Impact on usage of income**
 - a. Savings/ expenditures
 - b. Type of expenditures: Necessity – investment – temptation goods
- 3. Other important outcome variables: risky behavior, violence, time use, not discussed today**

A significant impact on wage employment

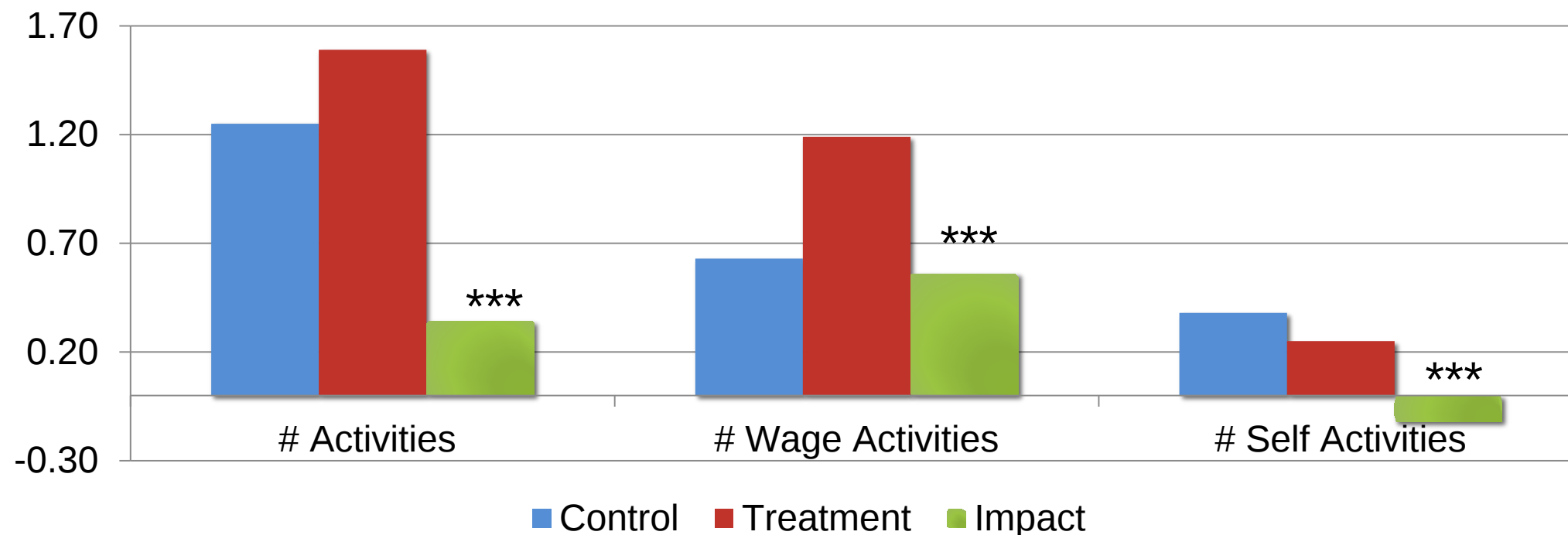


Small impact on overall employment (from 87% to 99%, +12 pp)

Strong impact on **wage employment (from 54% à 97%, +44 pp)**

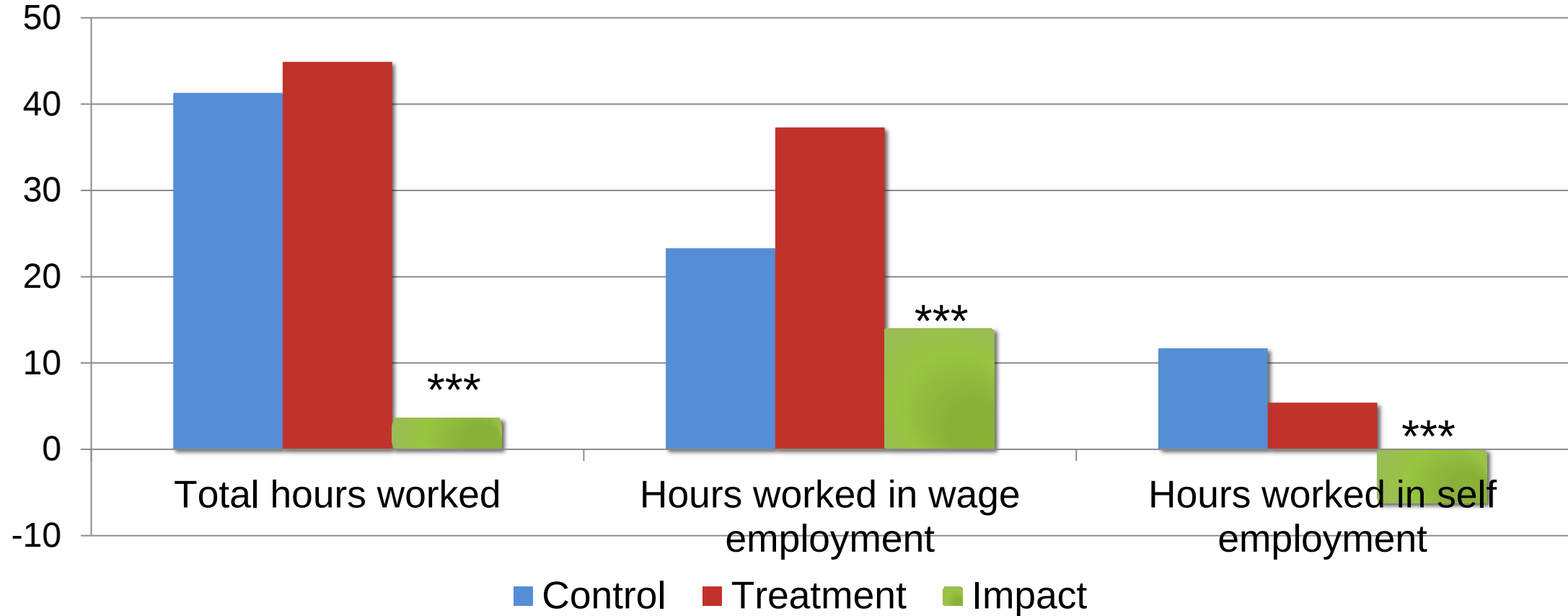
But small decrease in self-employment and other types of employment (-9 pp)

A significant impact on # of activities



An increase in the total number of activities due to wage activities, but a significant decrease in the number of self employment activities.

A significant impact on hours worked

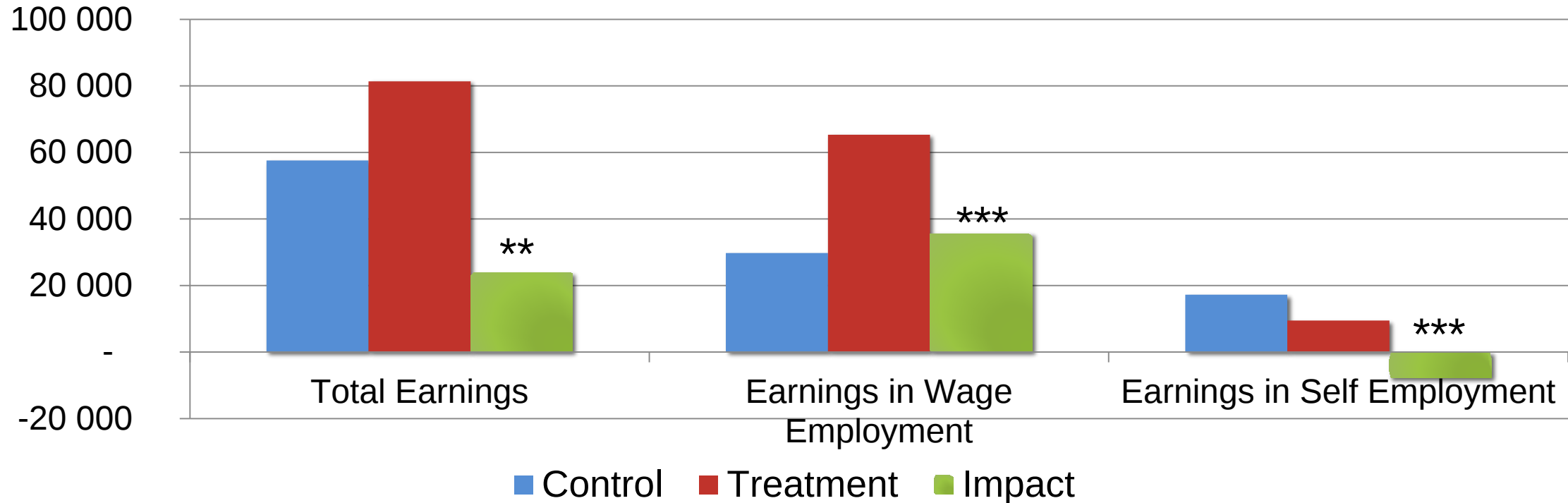


Small impact in overall hours worked (from 41.3 to 44.9; + 3.6 hours)

Strong impact on hours in **wage employment** (+14 hours)

Less hours in **self-employment** (-6.2 hours) and **other employment** (-3 hours)

Impact on monthly earnings

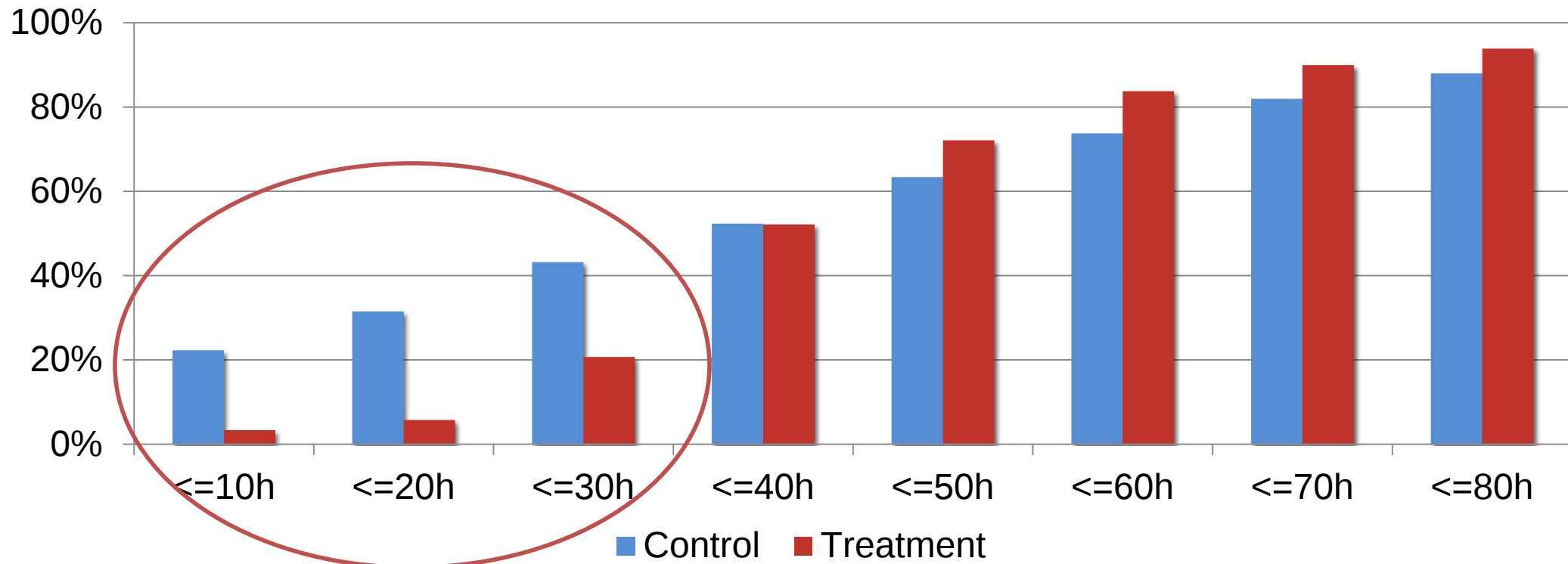


- Total earnings increase strongly from \$99.5 to \$141. A \$41.5 increase (42%)
- **LIPW wage is \$95: Earnings gain as a ratio of transfers $41.5/95 = 43\%$** (substantial opportunity cost)
- Strong increase in earnings from wage employment (+\$61) and decrease in earnings from self-employment (-\$13)

Results # 1

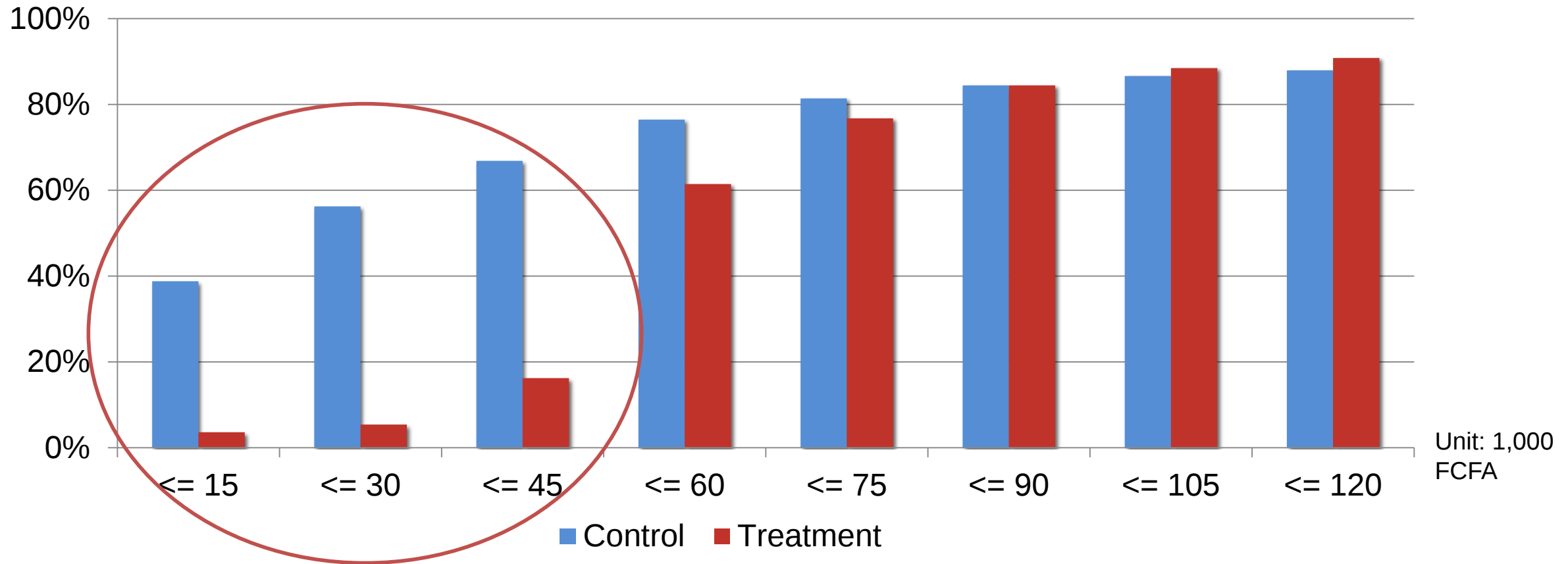
- Youths in the control group already have occupations and work long hours (41 hours per week)
 - Explains the small overall impact on employment
- For low earnings per hour worked: **370 FCFA/h (\$0.64/h)** for self-employment **320 FCFA/h (\$0.55/h)** for wage occupations
 - In comparison, LIPW pays 423 FCFA/h (\$0.73/h)
- **Participants reallocate their workforce to better paid occupation (LIPW)**
 - Explains the strong progression of wage occupations, detrimental to other type of occupations
 - **Total earnings increase by 24,000 FCFA (\$41.5) per month, that is 43% of the LIPW transfer 55,000 FCFA (\$95)**
- **Question** : What will happen at the end of the LIPW program ? Will they reorganize their activities to the same profitability level ?

Strong increase in hours worked for those who worked less



- 31% would have worked less than 20 hours without the LIPW, they are only 6% with the program
- 50% work more than 40 hours per week in both groups

Strong increase in earnings worked for those who earned less

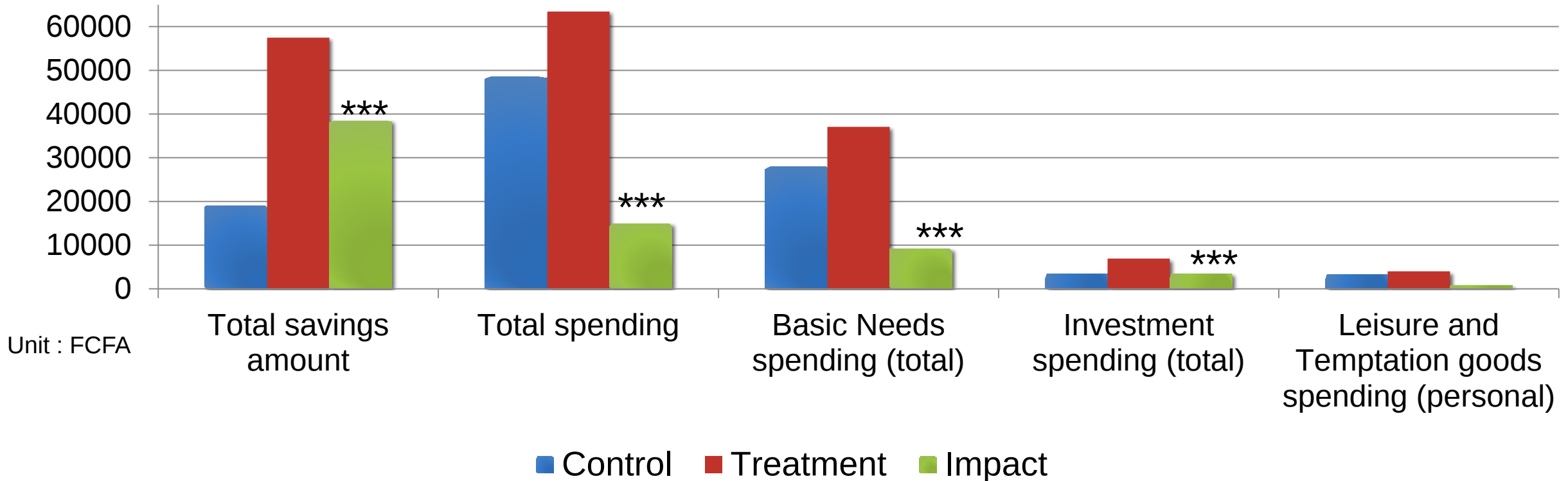


39 % would have earned less than 15,000 FCFA without the LIPW, they are only 4% with the program

Results # 2

- An important share of the **applicants** would have been «under employed», **receiving low earnings and working few hours**
- **For this sub-population, we observe a strong impact on total monthly earnings and on hours worked**
- However, for the rest of the population (a significant share) the impact is much more limited
- **Question** : 20% at least of LIPW participants do not really benefit from it in terms of earnings/hours. However, applicants are 4 times the places available in the program. Can targeting be improved?

Impact on savings and expenditures



- +38,000 FCFA impact on savings amount (4 month stock): **around +9000 FCFA per month**
- +15,000 FCFA increase on youth spending
- Results are very consistent: earnings (+24,000) = spending (+15,000) + savings (+ 9,000)
- High marginal savings rate $9,000/24,000 = 37,5\%$
- Limited leisure and temptation goods expenditure and no impact

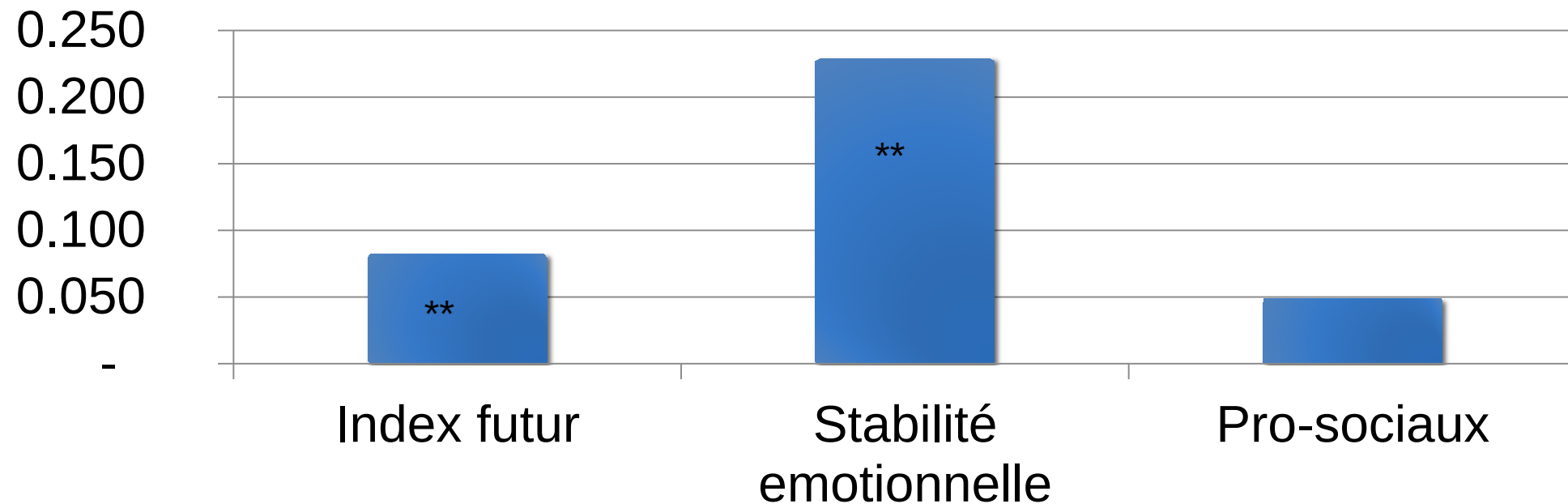
Results # 3

- **Safety net or support to productive investment?**
 - Basic need spending: **+9,000 FCFA** (from 27,900 FCFA to 37,000 FCFA)
 - Total Investment spending : (spending in training & education + productive assets investments) : **+3,000 FCFA** (from 2,700 FCFA to 5,600 FCFA)
- Huge impact on savings : + 9,000 FCFA / marginal rate 37,5%
 - **Future use ? Consumption smoothing or productive investments ?**
- Other results show that they perceive high financial constraints : 44,3% express high financial constraints on basic needs and 38,7% on investment spending
 - ***[The program partly relax the financial constraints but they remain strong : only a 4% reduction of the constraints expressed]***

How to measure impact on attitudes?

- Quite difficult to measure. Can be done in different ways
- Psychometric variables
 - A lot of existing available tests
 - Based on series of questions that are then aggregated. These tests are validated by psychometrist
- Different existing scaled that we use to measure
 - Future perception
 - emotional stability,
 - Pro-social behaviors

A strong impact on emotional stability



- Variables are normalized to have a standard error of 1
- A 0.20 impact is considered as strong

List experiments

- One other variable we would like to measure is criminality or sensitive variable like that
 - **Thief:** I have taken an object or money that was not mine
 - **Aggressions I hit somebody**
 - **Prostitution :** I had sexual intercourse with a new partner gave me some money or a present in exchange
- Quite unlikely to get the right answer when you directly ask this question
- Different techniques to recover some information however
- One is list experiments

List experiments

- Consider a set of 4 unrelated assertions
- Read these assertions to half the youth and just ask how many of them are true : get a number ranging from 0 to 4
- Read the same 4 assertions to the other half but add also the sensitive question **again just ask how many are true**: We get a number from 0 to 5
- Consider then the difference in the average of the number of assertions youth said they are true between the 2 groups:
 - This should measure the share of youth for whom the sensitive assertion is true

List experiments

Example for physical aggressions

1. I had some dispute with a friend
2. I frequently eat meat
3. I had a party with friends
4. **I hit somebody**
5. I like staying at home

List experiment example

- **Control**

- List 4 : $MC(4) = 2,40$
- List 5 : $MC(5) = 2,56$
- Share having done an aggression
- $AC = MC(5) - MC(4) = 0,16$

Test

List 4 : $MT(4) = 2,47$
List 5 : $MT(5) = 2,47$
Share having done an aggression:
 $AT = MT(5) - MT(4) = 0,00$

Impact on aggressions

$$\text{Impact} = AT - AC = (MT(5) - MT(4)) - (MC(5) - MC(4)) = 0,00 - 0,16 = \mathbf{-0,16}$$

Résultats # 5

- The program had an impact on youth attitudes
- When looking using at psychometric variables
 - More confident in the future
 - **Increased emotional stability**
- Based on list experiments
- A reduction in **aggressions**

To summarize ... in the short term

- The LIPW program represents a good economic opportunity in wage employment for young individuals
- They adjust their portfolio of occupations to benefit from it the most (partial substitution in occupations)
- Their total earnings increase significantly during the program, even more for those who would have stayed «apart»
- They use this additional income in the spirit of the design of the program : towards basic needs spending and towards investments and savings. No significant impact on leisure or temptations goods spending.
- Also positives effects on attitudes, socio-emotional skills and behavioral

What comes next

- Two main questions
 1. **Impact in the medium term.** Usual criticism: not much progress once the programs end
 - Is this true?
 - Very good aspects on that : large increase in savings. A real surprise
 - More worisome aspects: participants strongly reaorganized their labor force? Is it just possible to recover these activities as they were before?
- Almost done with endline surveys: answer to this question will come soon

What come next

2. Targeting

- One key result is the strong heterogeneity on impact on earnings in the short – run
- A large share of youth actually did not see their situation improving a lot
- However a lot of youth applying to the program
- Surely a better use of the money is possible
- How to target?
 - Targeting based on characteristics of the youth? Which one
 - Self targeting mechanism?

Thanks!

