

Youth Employability and Peacebuilding in Post-conflict Côte d'Ivoire: Evidence from a Randomized Controlled Trial

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Abstract: This paper investigates the impact of alternative economic opportunities for the youth in consolidating positive peace. Using data from randomized control trial from a cash-for-work program for unskilled youngsters, with no opportunities in the labor market, we capture the causal effect of employment on social cohesion and trust in institutions in post-conflict Côte d'Ivoire. We estimate the short term and midterm impacts of the program from a sample of 4,160 youngsters randomly drawn including 3,125 beneficiaries and 1,035 in the control group in 16 municipalities nationwide. We also include in the analysis the prediction of youth behavior in favor of peace conditional to their participation in the program by running a LASSO model. In the short term, participation in the program decreases the odds to trust out-community youth by 29% and the odds to trust colleagues by 16%. In the long term, having a paid-job significantly increases the likelihood to attend community meeting by 20%, trust in family members by 17% and trust in colleagues by 25%. Further, participation in the program is found to significantly predict behavior to peace. Lastly, while training in entrepreneurship negatively predict social cohesion, training in paid-job positively predict attitude to peace.

Keywords: Randomized control trial, peacebuilding, youth employment, Côte d'Ivoire

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1. Introduction

In Côte d'Ivoire, the youth aged between 15 and 24 accounts for 20% of the population in 2010, and the proportion of people aged between 25 and 49 is around 30%. This demographic explosion is a challenge, especially in a post-conflict context marked by precariousness and widespread unemployment. Youth between the ages of 14 and 35 are on the average, very much affected by unemployment than other demographic groups, exhibiting an unemployment rate of 12% compared to the national average rate of 9.2% (AGEPE, 2012).

This is undoubtedly one of the reasons why despite significant improvement of the economic situation after the post-election turmoil, with an average annual growth rate of GDP over 8% since 2012, Côte d'Ivoire remains among nations with high risk of fragility (Peace Fund, 2014). Yet, apart from strong economic performance, the government to consolidate peace has initiated a package of measures among which, the Youth Employment and Skills Development Project (PEJEDEC) for the improvement of their employability and the promotion of their skills. The PEJEDEC¹ implemented several programs including the Cash-for-work project (THIMO²). While these initiatives are in line with a sustainable management of the post-conflict period, the poor results of the National Truth and Reconciliation Commission (CDVR³) seem to question the contribution of the youth employment policy to the strengthening of the reconciliation and peace-building process.

Bigombe, Collier and Sambanis (2000) note that peace-building in the post-conflict period will have to focus primarily on identifying risk factors. The main factors highlighted are the dependence of the economy on natural resources, the lack of economic opportunities, especially for the youth (young men in particular) and ethnic dominance. While the issue of dependence on natural resources can be mitigated by a diversified economy and ethnic dominance thwarted by a strengthening of democracy and institutions, youth occupation is a major challenge given their role in the fragmentation of the social fabric in Côte d'Ivoire (Akindès and Fofana (2011), Arnaut, 2012).

As Chen, Loayza and Reynal-Querol (2008) showed, even if war has devastating effects, the initiation of a long-lasting peace-building process right after the end of the conflict can lead to reviving and improving post-conflict situation. Collier, Hoeffler and Soderbom (2008) rightly

¹ Programme Emploi Jeunes et Développement des Compétences

² Travaux à Haute Intensité de Main d'Œuvre

³ Commission Dialogue, Vérité et Reconciliation

pointed out that the post-conflict period is subject to two major challenges: economic recovery and the risk of resurgence of conflict.

Côte d'Ivoire is still a fragile state given its vulnerability to violence (OECD, 2016). Indeed, despite the improvement in the security situation, 575 counts⁴ of violent events including battles between the army and unidentified armed groups, violence against civilians and riots related to protest were reported over the period between 2010 and 2013. Côte d'Ivoire remains on the list of the top ten fragile countries in the world according to the World Bank's 2018 Harmonized Index of Fragility.

Those broad pictures raise the following questions: What is the impact of youth employment on peacebuilding? Does participation in the Cash-for-work program strengthen community interactions? What is the effect of such program on trust in institutions and political authorities? Does this impact differ according to gender or place of residence? Does this contribution differ in term of the employment policy option adopted? What is the prospective behavior of the youth in peacebuilding conditional to the participation in the cash-for-work program? Does this propensity for peaceful behavior vary across the employment status after exiting the program?

The main objective of this paper is to show the causal effect of access to youth employment on peace-building. More specifically, the research aims at:

- Assessing the impact of participation in an employment promotion program on the extent to community interactions;
- Measuring the effect of the program on participation in activities of public interest;
- Capturing the effect of the program on trust in the institutions (security forces and political and administrative authorities);
- Determining the propensity of youth to adopt behaviors in favor of peace according to their employment status.

The significance of this work is multi-folds: firstly, the paper accounts for confidence in transition in a peaceful socio-political environment; secondly the methodological approach (RCT) makes it possible to rigorously capture the effect of the integration of youth at-risk on peacebuilding; thirdly, we gauge the subsequent behavior of youth conditional to the several employment policy options; lastly, the results give better guide for public interventions in a post-conflict context.

⁴ Armed Conflict Location Event Data (ACLED)

The main hypothesis examined in this research is that access to employment improves the individual contribution to actions in favor of peace; in terms of increased intra and inter-community interactions; increased participation in activities of public interest; trust in authorities and institutions.

Our findings results indicate that there is on the average, a significant difference between beneficiaries and controls over actions and attitudes in favor of peace. In addition, the impact of the program (causal effect) on peace behavior is significant only in the short term because of its negative effect on building trust between youth from diverse communities and between colleagues participating in the program while no significant medium-term impact is exhibited. However, the prospect of having a paid-job increases the likelihood to attend community meeting by 20%, trust in family members by 17% and trust in colleagues by 25%.

Further, participation in the program is a significant factor explaining later attitudes to peace. Program beneficiaries who have been trained in job seeking have a positive attitude towards peace, while those who have received entrepreneurial training have a negative attitude. This finding may highlight deficiency in strong government support for youth entrepreneurship as a long-term employment policy.

The remaining of the paper is structured as follows: Section 2 highlights literature review, Section 3 presents the program being evaluated, Section 4 describes the methodology and Section 5 shows results and discussion.

2. Literature Review

The United Nations (2009) defined by peace, promotion of any action which purpose is to consolidate peace and avoid a return to conflict. From this conception, Adedokun (2017) in a critical review of the literature distinguishes three approaches to peacebuilding in the post-conflict period namely, the minimalist standard or negative peace, the maximalist standard or positive peace and the intermediate situation.

While negative peace refers to the absence of hostilities or the absence of conflict (Hoeffler, 2017), the positive peace or lasting peace, (Galtung, 1964) refers to the efforts that address the "root causes" of conflict. These efforts incorporate two elements: to prevent an immediate relapse into the war and to build long-term sustainable peace by promoting a culture of peace and non-violence (UN, 2009).

Empirical research on the sustainability of post-conflict peace focused on several issues such as the outcome of the conflict, particularly in terms of a negotiated settlement or a decisive

military victory (Toft, 2010); the impact of external peacebuilding and peacekeeping operations, the presence or absence of third parties, the United Nations peacekeeping forces in this case (Doyle and Sambanis, 2006); and institutional arrangements for power-sharing (Mukherjee, (2006), Hoeffler, (2017).

In addition, a good number of studies indicate that youth are major actors in conflicts in Africa, especially in fragile post-conflict states (Collier et al, (2008). Brett and Sprecht (1992) note that more than 300,000 young Africans have fought in the majority of current armed conflicts and identified explanatory factors for youth involvement in these conflicts. Among these factors are poverty and unemployment.

Collier and Hoeffler (1999, 2002) found, among other things, that low employment opportunities for out-of-school youth and low per capita income are positively associated with the likelihood of resumption of a civil war. Collier (2009) argues that an effective strategy to reduce the risk of conflict is to combat youth unemployment. Indeed, when unskilled youth are employed, they are less likely to be recruited for violence. This is also confirmed in the work by Brett and Sprech, (1992) who highlight the fundamental role of unemployment on the decision to participate in Jihad in Pakistan.

A strategy used by the United Nations to reduce the risk of resumption to armed conflict is to provide employment and sustained income for ex-combatants from Disarmament, Demobilization and Reintegration (DDR) programs (UN, 2006). The first generation of DDR program focused only on the reintegration of ex-combatants. But to take into account the risk of dissatisfaction with other vulnerable or war-affected social categories (unemployed youth, IDPs, war orphans, women), the second generation of DDR programs uses a comprehensive reintegration approach by tackling stabilization using a grassroots approach. The underlying idea, is that reintegration could help the community rebuild itself and promote social cohesion and thereby strengthen peace (Fearon et al, 2009).

Spencer (1997) argues that if the reintegration program provides the ex-combatant with valuable skills in the labor market and knowledge, then it can contribute to the improvement of human capital, which in turn can positively affect the post-conflict reconstruction, development and peacebuilding. Subedi (2014) shows that Nepal's Reintegration Program led to an improvement in the employability of ex-combatants through the education received in cantonments. King (2013) shows using a quasi-experimental approach that participation in a youth integration program (KVMP) (ex-combatants included) has a positive impact on some indicators of social cohesion in post-conflict period in Liberia. According to King (2013), these different programs have allowed ex-combatants to re-establish relationships with their

relatives and build networks with their counterparts, thus strengthen social capital and peace. However, the approach used by Subedi (2014) is qualitative and that of King (2013) may suffer selection bias due to the use of non-experimental approach.

The experimental approach used by Blattman et al (2015) shows that the combination of transfer and therapy reduces the violent behavior of young Liberians in the post-conflict period. Blattman and Annan (2015) also indicate, in a randomized approach, that the evaluation of a program of young farmers in Liberia is found to reduce their propensity to engage in mercenary activities, with a greater impact of training, mentoring and supply of capital assets.

It should also be noted that even in an experimental context, the contribution of these programs to the construction of peace is found to be limited. As a result, it is important not only to capture the causal effect of these programs, but also to measure their propensity to contribute to long-term peace (Blair et al 2015). Our study adopts this approach to evaluate the impact of participation in Cash-for-work program on strengthening positive peace in Côte d'Ivoire using a random assignment experiment approach.

3. Presentation of the Cash-for-work program

In the aftermath of the 2010 post-election crisis, Côte d'Ivoire initiated the Youth Employment and Skills Development Project (PEJEDEC) thanks to the \$ 50 million emergency grant from the International Development Association (IDA) of the World Bank. The project which was implemented on 27 December 2011 and aims, until 2015, aimed at improving access to employment and the development of vocational skills of 27,500 young men and women of all skill levels, aged between 18 to 30 years, unemployed or underemployed. The beneficiaries of the program are selected by public drawing among youth who meet the criteria mentioned above. The PEJEDEC offers a range of programs and support for innovative pilot activities to improve employment and skills development for youngsters (Vocational Training, Apprenticeship, Training and Temporary Employment Opportunities).

The aim of the PEJEDEC cash-for-work program⁵ was: (i) to reduce the vulnerability of unemployed young men and women by giving them the possibility of temporary employment

⁵ THIMO (Travaux à Haute Intensité de Main d'œuvre) in french

and hence earn income and (ii) to improve the social and economic infrastructure of the communities.

The Road Management Agency (AGEROUTE) implements it in 16 municipalities of Côte d'Ivoire. The program targeted 12,500 young people between the ages of 18 and 30, with at least 30% women. It has particularly targeted low skilled or unskilled young people or those who do not attend a vocational training center; or who do not have a regular and legal source of income from all over the country including urban and rural areas.

Over 12,693 youngsters participated in the PEJEDEC Cash-for-Work program from 2012 to 2015. The program consists, for six (6) months, to implement routine maintenance activities on the network of urban roads, the maintenance and/or the rehabilitation of communal infrastructures according to the needs of the communities. Each young person receives an income of 2,500 FCFA (\$ 5) per day (55,000 FCFA / month for 6 months). This income is paid to a bank account opened by the beneficiary; encouraging them, therefore to save.

Related capacity-building programs for youth were associated to the program, including training for paid-employment research in the modern sector and the creation and management of Income Generating Activities (IGAs). The three (3) years of execution of the program show that: 12,693 youth benefited from temporary employment for the maintenance of 2597.72 km of road; 11,882 were sensitized on HIV / AIDS, Civics and Citizenship, Environment and Public Hygiene and 3,749 people were trained in job research and the development of IGAs.

4. Methodology

This section presents the conceptualization that shapes our empirical strategy, the empirical approach, the data and descriptive statistics.

4.1. Conceptual framework

We build our research from the conceptualization of positive peace by Gatung (1964) where positive peace is understood as the absence of structural violence and culture of violence. While negative peace (Hoeffler, 2017) that is related to the cessation of hostilities may not be compatible with justice; positive peace presupposes reconciliation, the restoration of psychological integrity and social fabric at the grassroots level. More specifically, the consolidation or construction of peace focuses on the basic economic, psychological and social environment at the individual and community level. Peacebuilding is a dynamic process

based on justice, fairness, cooperation and addressing the root causes of conflict so as to reduce their resurgence in the future (Gawerc, 2006).

According to Kelman (2005) positive peace in an environment with a long history of civil conflict, is understood by mutual acceptance in communities, cooperation through enhanced interaction, improved sense of security, the existence of a space for the promotion of human dignity, the institutionalization of a problem-solving mechanism and the promotion of reconciliation in general.

Yet, in a post-conflict context, violent behaviour would be seen as an occupational choice between violence and participation in the legal labour market (Becker (1968), Ehrlich (1973, 1996) and accumulation of criminal human capital can lead to a trap for violence in the presence of random shock (Mocan et al, 2000). Therefore, occupation on the labour market can provide some social returns. For the individual, decent Jobs can convey identity, status, and self-confidence and individual's overall life satisfaction. Regarding society, decent jobs also contribute to social cohesion by shaping identities and how individuals relate to one another, connecting people to one another through networks, shaping people's expectations and aspirations for the future, improving sense of having a stake in society and enhancing perceptions of fairness World Bank (2012). These are the conceptual basis upon which we have formulated the empirical approach.

4.2. Empirical approach

Measuring peace is not easy in the sense that peace is intangible and some crucial aspects of peacebuilding are essentially psychological. As a result, analyzing the effect of a project on peacebuilding can be confounding in the sense that efforts to measure the impact of the project can also be confounded by the fact that the "dependent variable" will imply something that does not happen (Gawerc, 2006). Based on this observation, the methodology used will be of two folds: a standard project impact assessment method on the one hand and the prediction of peace behavior, given participation to the labor market on the other hand.

• *Measuring the impact of the program on peacebuilding*

Following Banerjee et al (2014), we compare peacebuilding indicators between the treated and the control groups. We postulate, thanks to the random assignment to treatment, that the two groups are identical ex-ante. For this purpose, a pre-treatment difference test is carried

out in order to make a comparison between the treated and the control group by estimating the following model:

$$X_{it} = \alpha + \beta T_i + \eta_l + \varepsilon_i \quad (1)$$

Where X_{it} is a vector characteristics of the youth i residing in the locality l , T_i is a dummy variable which is equal to 1 if the individual i is in the treatment group η_l are the area fixed effects and ε_i , being the errors. The estimation of the β coefficients represents the differences between the treated and the control groups before the experiment.

To capture the short-term and medium-term effects of the intervention on the propensity of the youth to participate in the actions to peace, we estimate the following equation:

$$Y_{it} = \alpha + \beta T_i + \eta_l + \varepsilon_{it} \quad (2)$$

Where Y_{it} is the outcome variable for the individual i from the locality l for the period T (during and after the program), the error term ε_{it} being specific to the locality. The estimate of the coefficient β makes it possible to apprehend the effect of the program, where T is the treatment period (short term and medium term).

Initially, three categories of variables are set as dependent variables.

Category 1: This group shows discrete dependent variables, namely: Number of membership / associative groups; Number of participation in intra-community activities; Number of participation in inter-community activities (meetings); Number of participation in public works.

Category 2: This is the category of dichotomous dependent variables, namely: leadership and participation in meetings.

Category 3: This last group indicates categorical dependent variables, namely: degree of trust in family, community, other communities, colleagues, police and authorities (government and local officials).

This latter category was redesigned into dichotomous variables for the sake of simplification in the Least Absolute Shrinkage and Selection Operator (LASSO) estimates and also for ease of interpretations. Initially categorized in three modalities, namely: "a little, a lot, not at all", these modalities were groups into two: "a little" and "not at all" coded as "0", and «many" coded as "1".

• *Predicting behaviors for peace*

Given that the experiment is not specifically designed to capture changes in peace behavior, following Blair et al (2015), we use a constrained linear regression model or Least Absolute Shrinkage and Selection Operator ("LASSO") to determine the likelihood to have a peace attitude, given participation in different employment options. This approach is important to understand the type of employment policy to consider over time to strengthen positive peace. LASSO uses a penalty to reduce the coefficients of a regression. According to Bloniarz et al (2015), in randomized experiments, if there are a large number of covariates relative to the number of observations, regression may perform poorly because of overfitting. In such cases, the least absolute shrinkage and selection operator (LASSO) may be helpful. The estimator is more efficient than the simple difference-of-means estimator. Lasso based adjustment can be advantageous even when the number of covariates is less than the number of observations. Specifically, a variant using LASSO for selection and ordinary least squares (OLS) for estimation performs particularly well.

We use the LASSO penalization associated with the Ordinary Least Squares regression to estimate the different linear models.

Formally:

$$y_i = b_0 + \sum_{j=1}^{p-1} b_j x_{ij} + \varepsilon_i \quad (4)$$

$$\hat{b} = \underset{b \in R^{(p)}}{\operatorname{argmin}} \frac{1}{2} \sum_{i=1}^N (y_i - (b_0 + \sum_{j=1}^{p-1} b_j x_{ij}))^2 \quad (5)$$

But the OLS LASSO:

$$\underset{b \in R^{(p)}}{\operatorname{min}} \frac{1}{2} \sum_{i=1}^N (y_i - (b_0 + \sum_{j=1}^{p-1} b_j x_{ij}))^2 \text{ Under the constraint } \sum_{j=1}^p |b_j| \leq q$$

As shown by Fonti and Bellister (2017), the LASSO method puts a constraint on the sum of the absolute values of the model parameters, the sum has to be less than a fixed value so that to select features variables and to minimize the prediction error.

Thus, the Lagrangian is written:

$$\frac{1}{2} \sum_{i=1}^N (y_i - (b_0 + \sum_{j=1}^p b_j x_{ij}))^2 + \mu (\sum_{j=1}^p |b_j| - q) \quad (6)$$

$0 \leq q \leq 1$, the upper bond is positive, but less than one and $\mu \geq 0$.

$$\hat{b}(\mu) = \underset{b \in R^{(p)}}{\operatorname{argmin}} \frac{1}{2} \sum_{i=1}^N (y_i - (b_0 + \sum_{j=1}^{p-1} b_j x_{ij}))^2 + \mu \left(\sum_{j=1}^p |b_j| - q \right)$$

The parameter " q ", controls for the level of regularization of the estimated coefficients. The Lagrangian multiplier is the regularization parameter. And these two parameters are linked by a data dependency relationship. This constraint aims to contract the value of the coefficients, and the form of this penalty will lead some coefficients to be zero. If the regularization parameter is zero, then we will have exactly the standard OLS estimate.

4.3. Descriptive Data and Statistics

4.3.1. Data source: description of experiment

AGEROUTE (implementing partner of THIMO) uses public draws to transparently allocate places available in the program among the large number of youth who applied. The assignment (treatment) was based on this randomized allocation of places available in the program. It should be noted that the random assignment is preceded by intense awareness campaigns that favored popular support (over 44,000 applicants).

The random draw ensured that the beneficiaries and the control group are comparable before the program. In this context, the differences between the beneficiaries and the control group after the program make it possible to identify precisely the impact of the program.

The program was launched in a wave of 3,125 people for a period of six (6) months. For each wave, the youth are organized in mixed intervention brigades of 25 people. The experiment focuses on the second wave: 3125 beneficiaries and 1,035 in the controls group were selected in 16 municipalities.

A survey was conducted in June / July 2013 to collect baseline data on 4160 applicants. Beneficiaries were selected among the applicants in 16 localities and regrouped into brigades to work on road maintenance under the supervision of AGEROUTE. In the second phase, some brigades were randomly selected in order to benefit from additional training (either entrepreneurship or paid-job research) at the end of the program.

A first short-term follow-up survey was conducted in December 2013 / January 2014 approximately 4-5 months after the launch of the program, in order to measure the short-term impact of the program, but before the implementation of additional training. A second medium-term follow-up survey was conducted from March to July 2015, i.e. approximately

12-15 months after the end of the program, in order to understand the impact on professional integration. This second survey makes it possible to study the relative additional effect of training received by some beneficiaries at the end of the program.

Ten (10) teams of enumerators were deployed throughout Côte d'Ivoire with a very precise chronogram. Due to the mobility of youth (especially in the control group), a process of "tracking" was set up in order to better monitor displaced people. This strategy enabled to largely mitigate the attrition problem, for both the test group and the control group. The short-term survey indicated a 97.4% response rate and the mid-term survey 93.8% response rate, exhibiting almost a full compliance.

Apart from the individual characteristics, the questionnaire covers a multitude of topics on various modules. These are (i) employment module capturing the employment status, (ii) the job search module taking into account future prospects and assets, (iii) the personal traits module capturing a set of psychological indicators, (iv) the expenditure module including transfers, (v) the savings and expenses module, (vi) the time allocation module, (vii) the attitudes module and (viii) the social relations module. The latter is the module of interest for this study since it makes it possible to identify a set of indicators of improvement of the social interactions, of the relations with the authorities, all things likely to measure the behaviors to peace. These indicators take into account political legitimacy (perception of central or local government and societal relations), the quality of security in terms of public confidence in the performance of justice and security institutions (performance and independence of law enforcement institutions), and the economic allocation (productive resources, distribution of income, etc.), since peacebuilding involves legitimacy, security, justice and economic foundations (International Dialogue Working Group (2013).

We capture intra-group and inter-group social interactions, trust in the authorities, participation in socialization activities, and reinforcement of social cohesion and dialogue with other communities. It should be pointed out that in addition to job opportunities, the program also includes citizenship training and social cohesion actions. The following information was collected in each survey (referring to the last 30 days prior to the survey):

- Number of membership / associative groups;
- Leadership
- Number (of times) of participation in intra-community activities;
- Number (of times) of participation in inter-community activities;
- Number (of times) of participation in public interest activities

- Degree of trust (few, many, not at all) in other communities, law enforcement agencies, authorities (governmental, local,)

4.1.2 Descriptive statistics

The database contains 4,160 observations including 3,125 for the group of beneficiaries and 1,035 for the control group. The use of relatively large size of the beneficiary group aimed at capturing different employment scenarios, specifically including beneficiaries selected for the job-search training (1,000 observations), the ones for entrepreneurship training (1,000 observations) and the ones who did not receive any additional training (1,425 observations). Descriptive statistics focus on pre-treatment analysis (baseline survey) and the test difference on outcome variables related to peacebuilding.

4.1.2.1. Descriptive Statistics: Baseline Survey

Comparison between the treatment and the control groups focused on socio-demographic characteristics and employment prior to the launch of the program namely, age, gender, education, the employment status can be done from the information in table 1. As shown in Table 1, the random assignment produced "*identical*" groups prior to the experiment. There is no significant difference between beneficiaries and non-beneficiaries before the implementation of the program.

Most of the young people selected are men (about 70%) and the average age in both groups is around 24 years old. The youth generally show poor educational attainment, almost 78% of them have barely completed primary school; 80% of the youths in both groups reported having an occupation prior to entering the program; only about 14% were jobless when they started. Actually, the type of jobs reported is informal, with low productivity and insignificant salaries. The average income in these groups is about 19,000 francs CFA and about half (49%) had a savings account before the implementation of the PEJEDEC program.

The random draw assures that beneficiaries and control group are fairly identical before the program. Differences between the two groups after the implementation of the program could be attributed to the impact of the program. This finding is essential to ensure the internal validity of the short- and medium-term impact identification strategy. The baseline survey data therefore enables to test the validity of the impact evaluation design (Bertrand et al., 2016).

Table 1 : Baseline survey: test difference, individual characteristics (before the program)

Variables	Group	Control (a)	Beneficiaries (b)	Difference (a-b)
Marital status				
Age	24.596	24.549	24.612	-0.062
Male	0.685	0.702	0.68	0.022
Single	0.709	0.714	0.708	0.006
Married	0.131	0.139	0.128	0.010
In relation	0.149	0.135	0.153	-0.018
Others	0.009	0.011	0.009	0.002
Education				
No education	0.213	0.211	0.213	-0.002
Primary school	0.786	0.788	0.786	0.002
Secondary school	0.280	0.284	0.278	0.006
Higher education	0.444	0.429	0.45	-0.020
Employment status				
Previously Occupied	0.795	0.808	0.790	0.018
Unemployed	0.138	0.135	0.138	-0.003
non-active	0.065	0.056	0.068	-0.012
In school	0.005	0.007	0.005	0.002
Multi activities	0.194	0.196	0.193	0.003
Monthly income	19230.35	18669.09	19410.92	-741
Saving account	0.488	0.497	0.486	0.011

4.1.2.2. Descriptive statistics: Mean comparison tests

The comparison is made on two sets of outcome variables: the discrete variables namely the number of groups of membership (network), the number of activity of general interest realized; the number of meetings in the community and other meetings attended by the individual and the dichotomous and categorical variables related to participation in meetings and trust. The comparison took also into account short-term and long-term differences.

In the short term as well as in the mid-term (see Table 2), there is no significant difference in participation in community activities (number of activity of public interest and number of in-community meeting attended) and networking (number of groups in the community).

This result could be explained by the fact that the Cash-for-work program, largely related to public works, is a short-term response to youth unemployment. It is therefore likely that the relatively short duration of youth in the labor market is not long enough to strengthen the social networks of the beneficiaries of the program. It is rightly that even a year and a half after the exit of the program, the already existing social capital seems to not significantly improve a long period without occupation in the labor market.

Table 2: Descriptive statistics: Difference test for participation and network

	Short term			Mid-term		
	Control (a)	Beneficiaries (b)	Diff. (a-b)	Control (a)	Beneficiaries (b)	Diff. (a-b)
Number of group in the community	0.857	0.847	0.0104	0.737	0.725	0.011
Number activities of public interest	0.849	0.639	-0.089	0.341	0.360	-0.019
Number of group activities attended	1.429	1.449	-0.019	0.925	0.865	0.059
Number of in-community meetings	2.908	2.723	0.185	2.166	2.225	-0.058

(* , ** , ***) Significance at 10%, 5% and 1% respectively

However, regarding participation (see table 3) in meetings (to the question *did you participate in meetings in your community during the last 30 days?*), there is a significant difference between the two groups in the short-term with a likelihood more important for the beneficiaries of the program in the short-term, but no effect is observed in the mid-term.

Regarding trust in community members, while there is a significant difference in the two groups regarding interactions with other communities (trust in out-communities), with a more important outcome for beneficiary groups in the short term. In the mid-term, no significant difference is observed for trust in in-community youth. Indeed, while trust in in-community youth has increased in the short term, there is a significant decline in the mid-term. Indeed, 56.3% of youth in the control group declared having attended meeting in the community during the last thirty days preceding the short-term survey against only 52% of the youth in the group of the treated. This may suggest that compared to youth of the control group, at-

work youth do not have enough time to interact with other community members due to occupation.

This difference is little bit mixed as far as is trust concerned (to the question *to what extent do you trust?*). Specifically, trust in youth of out-community members is quite low in both groups no matter the time frame considered. In the short term, the difference is significant with only 4.7% of youth in the control group asserted trusting youth from other community compared to 3.4% in the group of the treated. No significant difference is however observed in the mid-term with 5.9% and 5.7% of youth respectively of the control and treated groups, who declared trusting members of other communities. The extent to distrust among youth shows the magnitude of dislocation of the social fabric following the post-electoral violence in Cote d'Ivoire.

Meanwhile, participating in the program seems to significantly restore legitimacy of the State only in the short term. In fact 30.6% of youth in the treatment group declared trusting the government compared to 27.5% in the control group. One year and half after the exit of the program, however, no significant difference is observed, with 24.2% and 25.2% of youth respectively of the control and treatment groups who declared trusting the government.

Further, in the mid-term, significant difference in trust only holds for family members; 59.4% of youth in the treatment group declared trusting their family members compared to 56.3% of youth in the control group (Table 3).

Table 3: Descriptive Statistics: community participation and trust: Test Difference

	Short term			Mid-term		
	Control (a)	Beneficiary (b)	Diff. (a-b)	Control (a)	Beneficiary (b)	Diff. (a-b)
Trust in in-community youth	0.179	0.170	0.087	0.178	0.185	-0.007
Trust in out-community youth	0.047	0.034	0.012*	0.059	0.057	0.002
Trust in colleagues	0.207	0.185	0.022	0.202	0.215	-0.012
Trust in family members	0.531	0.555	-0.024	0.563	0.594	-0.031*
Have attended in-Community meeting	0.529	0.563	-0.033*	0.458	0.474	-0.016
Trust in security forces	0.234	0.240	-0.006	0.201	0.213	-0.011
Trust in government officials	0.275	0.306	-0.031*	0.242	0.252	-0.010

(* , ** , ***) Significance at 10%, 5% and 1% , respectively.

5. Results and interpretation

The empirical analysis is focused on the impact of the program, the intensity of the interactions in favor of peace by apprehending the treatment using Ordinary Least Squares method on both the short-term and mid-term periods as well as the probability to interact and trust estimated by of Logit modeling. Tables 4 and 5 present the results.

5.1. Contribution of the program to peacebuilding

Regarding the intensity of the interactions, the contribution of the program to the number of networks and the level of participation in group activities and activities of public interest are not significant in the short and medium runs. Participation in the program has no effect on intensity of social interactions in term of increased in community networks and involvement of groups and public activities. Two main reasons may explain these results. First the program was implemented a few months after a decade of a traumatic political unrest. Communities, mostly youth are still struggling to cope with post-conflict recovery. The expected social returns from access to the labor market were not important enough to curb mistrust among citizens. Second, it is likely that youth employed during the implementation of the program have few moments to build in new social network, since they spend largely their time in their occupation. However, the program has a significant impact regarding the likelihood to interact (see table 4).

In the short-term, a discreet change in non-participation in the program to participation in the program reduces by 29% the odds of trusting in youth from other communities. A discrete change from not participating to the program, to benefiting to the program, also reduces by 16% the odds to trust colleagues. In the medium term, however, participation in the program has no impact on the likelihood of trusting out-community members.

To sum up, the cash-for-work program which was a short-term response to unemployment of unskilled youth aftermath the post-electoral unrest resulting from a decade of conflict did not increase social cohesion *per se* among youth in term of community interactions in Cote d'Ivoire.

Table 4: Impact of the project on the probability of social interaction and trust: Logistic regression

	Short term: ATE			Medium term: ATE		
	Coeff (std. Err).	Odds ratio	Z	Coeff (std. Err)	Odds ratio	Z
Have attended community meetings	0.0773 (0.079)	1.080	0.97	0.024 (0.072)	1.024	0.34
Trust in family members	0.052 (0.083)	1.054	0.67	0.075 (0.077)	1.078	1.05
Trust in in-community youth	-0.090 (0.092)	0.913	-0.89	0.023 (0.090)	1.023	0.26
Trust in out-community youth	-0.33* (0.193)	0.7168	-1.72	-0.053 (0.137)	0.948	-0.37
Trust in colleagues	-0.163* (0.082)	0.8487	-1.69	0.048 (0.088)	1.049	0.57
Trust in security forces	0.0101 (0.092)	1.010	0.11	0.038 (0.088)	1.039168	0.45
Trust in government officials	0.132 (0.087)	1.141	1.52	0.024 (0.080)	1.025182	0.31

(* , ** , ***) Significance at 10%, 5% and 1% respectively

Robustness check

Since we had a compliance rate around 95%, we wonder whether, running an ATE will be robust (see appendix on compliance tests). For that matter, we first performed a correlation test between theoretical assignment and actual assignment after the experiment. In the short run, we saw perfect compliance; i.e. 100% compliance. In the long run however, taking into account different employment policy, this correlation was around 95%, suggesting that our specification may be biased. In that case, computing ATE will likely not provide robust results.

For that matter, we run a local average treatment effect (LATE) to capture the effect of the treatment on the treated. However, the results were not consistent, indicating that the level of compliance is relevant enough to run the ATE (see tables 5 and 6).

Further, we tested whether there is any difference between groups in term of the impact of the intervention. For that purpose, we implemented a cluster analysis for location. However, the estimates were not consistent, since the experiment only covered 16 locations. Therefore we

performed standard regression of sub-groups such as gender (female and male groups) and participants from mostly affected neighborhood by the post-electoral turmoil, namely Abobo and Yopougon. Here again, regressions do not exhibit significant results.

Overall, LATE and ATE show the same results, indicating that there is a good compliance rate. Therefore, in the average, the effect of the program is the same compared to its effects on the treated. Our interpretation could therefore rely on conclusion drawn from the ATE estimates.

Table 5: impact of employment options on social networks: comparison LATE and ATE estimates

Dependent variables	LATE Coeff (std. Err)			ATE Coeff (std. Err)		
	Paid-job	entrepreneur	No-training	Paid-job	entrepreneur	No-training
Number of group in the community	0.0843* (0.0321)	-0.0032 (0.0319)	.01655 (0.0311)	0.0828* (0.0319)	0.0016 (0.0310)	0.0189 (0.0304)
Number of activities of public interest	0.01377 (0.029)	-0.01098 (0.0302)	-0.0207 (0.0282)	0.0304 (0.0379)	-0.0435 (.0372)	0.0190 (0.0370)
Number of group activities attended	0.02401 (0.0382)	-0.0477 (0.0384)	0.01944 (0.0378)	-0.05778 (0.0976)	0.182873 (0.1014)	0.0672 (0.0972)

Table 5 and 6 show that only paid-job has a significant impact on peacebuilding in terms of community interactions and intra-group trust. The prospect of having a paid-job increases the number of groups in the community by 8 percent points in the long run. Further having a paid-job significantly increases the likelihood to attend community meetings, trust family members and colleagues.

A discrete change from not been trained in paid-job research to being trained to paid-job search increases the odds to attend community meeting by 20%, trust in family members by 17% and trust in colleagues by 25%.

Table 6: impact of employment options on trust and participation: comparison LATE and ATE estimates

Dependent variables	LATE Coeff (std. Err)			ATE Coeff (odds Ratio)		
	Paid-job	entrepreneur	No-training	Paid-job	entrepreneur	No-training
Attend community meetings	0.0466** (0.0229)	-0.0112 (0.0234)	0.0213 (0.0226)	0.1878** (1.2066)	-0.0324 (.9681)	0.0901 (1.094)
Trust in family members	0.03817* (0.0221)	0.0015 (0.0228)	0.0011 (0.0221)	0.1647* (1.1790)	0.0151 (1.0152)	0.0113 (1.0114)
Trust in in-community youth	-0.0015 (0.0181)	-0.00209 (0.0185)	0.0140 (0.0181)	-.0093468 (0.9906)	-0.0131 (0.9869)	0.0840 (1.0877)
Trust in out-community youth	-0.00113 (0.0115)	-0.0160 (0.0111)	-0.0044 (0.0112)	-0.0215 (0.9787)	-0.2723 (0.7615)	-0.0726 (0.9299)
Trust in colleagues	0.0404** (0.0193)	0.0013 (0.0192)	0.0140 (0.0185)	0.2275** (1.2554)	0.0222 (1.0225)	0.0894 (1.0936)
Trust in security forces	0.0254 (0.0189)	0.0162 (0.0193)	0.00055 (0.0183)	0.1500 (1.1618)	0.1010 (1.1063)	0.00980 (1.0098)
Trust in government officials	0.0304 (0.0200)	0.0004 (0.0201)	0.0168 (0.0194)	0.1603 (1.1739)	0.0127 (1.0128)	0.0945 (1.0991)

5.3. Predicting attitude to peace

The regression of the LASSO model aims to determine factors that affect behaviors to peace conditional to participation in the cash-for-work program. The regression was run on outcome variables applying the LASSO function to the whole data in normal analysis. Several covariates have been controlled for, including participation to the program (treatment), gender, location, education, ethnicity, income, age, etc. The estimate takes into account all sixteen (16) implementation municipalities of the program at the national level. Consideration of area of residence is relevant in the specific context of Cote d'Ivoire since it exhibits challenges of community interactions, hence peacebuilding in the post-conflict period. Indeed, location is associated with ethnicity and political affiliation therefore may reflect the level of likelihood to grassroots peacebuilding attitudes. For instance, municipalities such as Yopougon (in Abidjan) and Gagnoa may be associated to opposition strongholds while Abobo (in Abidjan), Bouake or Korhogo could be considered as localities favoring the ruling coalition.

We implemented the regression both for the short and the long term. For the long term, we considered the different policy options i.e. paid-job training, entrepreneurship training and participation to the cash-for-work program.

The LASSO regression only selected the variables that significantly predict (at 10% and 5%) the outcome of interest. However, due to the large number of covariates selected (see appendix A4), we only focused on the variables related to participation to the program. Table 7 presents the results of the LASSO model.

Table 7: Predicting Attitudes Toward Peace : LASSO Results

Outcome variables	Short-term		Long-term	
	Treatment	Paid-job	Entrepreneurship	No additional training
Participation to meeting	-0.0355**	0.0038**	-0.0301**	
Trust in the family members	0.0157**	0.0289**		
Trust in the in-community youth	-0.0075**			
Trust in the out-Community of other youth	-0.0074*		-0.0067*	
Trust in colleagues	-0.0392*	0.0216**		
Trust in the police	0.0087*	0.0119**		0.0042*
Trust in the authorities	0.0296**	0.0119**	-0.0045**	-

(**), (*) significance at 5% and 10%

Treatment from the program (short term) appears to be a significant but contrasting factor in predicting the likelihood of participating in peace actions. Indeed, there is a negative and significant relationship between participation in the program, the likelihood of attending meetings, trusting out-community youth, and trusting colleagues on the one hand. On the other hand, benefit from the program shows a positive prediction in trust to the family members and trust to the police and to the government. These findings are consistent with King (2013) and Blair (2015) showing that participation in a youth employment program in Liberia has a positive impact on peacebuilding in post-conflict Liberia.

One of the central research questions is to understand the impact of different policy options on the behavior to peace. This is an important issue since the cash-for-work program is only a short-term response to youth unemployment. The effect of long-term occupation is the one that is relevant especially in a context of fragility. Table 7 also presents the results of the LASSO model fifteen months after program exit. The results presented are significant variables selected by the Lasso model as predicting factors.

The results indicate that the different policy options are significant predictors of attitudes to peace, but in a contrasted manner. Indeed, there is a negative and significant relationship

between entrepreneurship training and willingness to participate in meetings in the community, to trust youth from other communities as well as trust in the authorities. This negative and significant linkage is also observed between the beneficiaries of the program (without further training) and trust to the institutions, the police, namely. Contrary to our hypothesis, entrepreneurship and participation to a short term employment policy seem to negatively affect peacebuilding.

In reverse, the benefit of training in paid-job research in the modern sector enables a positive prediction for community participation (meeting in the community), intra-social capital (confidence in family and colleagues) and trust in institutions (police and authorities). These different results can highlight the relevance of youth employment interventions.

Discussion

The paper shows that in the short term the program did not result in changes of attitude toward peace. The comparison test difference as well as the ATE and the LASSO results predict negative effect of the program in trust of other youth, colleagues and participation. However, the program seems positively impacting trust in government, institutions and family.

These findings suggest that first and foremost that, the short-term employment policy does not seem to be an effective provision to address the issue of fragility through youth occupation in the labor market. However, short-term employment positively predicts intra-social capital ties (trust to family members) and legitimacy through trust in institutions and government (police and authorities). This result advocates that in a highly divided country, adequate employment policy is an important step towards the restoration of state legitimacy. This finding is in accordance with Carter (2011) who showed that in South Africa, when citizens positively rate the government on the creation of jobs, they are more likely to see the state as legitimate.

To consolidate peace through economic opportunities, short term responses seem not to be adequate to provide sustainable peace. Indeed, there is not a long-term effect of the program no matter which peacebuilding indicators are considered. Therefore, policies that are prone to deliver sustainable economic opportunities to the citizens are more likely to induce peace at the grassroots level. Our results highlight that, one year and half after the exit of the program; beneficiary youth who have received training in paid-job research in the labor market are more likely to develop positive attitudes to peace.

In fact, the prospect of being sufficiently capacitated to face the labor market and to have a paid-job in the modern sector will lead to an inhibiting effect on trust in the authorities (legitimacy) and the reinforcement of social ties in the post-conflict period. Indeed, as showed by Filmer and Fox, (2014), though relatively small, the formal wage employment sector in Africa provides significant multiplier effects on household income

Lastly, regarding training in entrepreneurship, although there are very high returns of capital in many independent activities especially when investment levels are low (Falchamps et al, 2012), the negative relationship between peacebuilding and training in income-generating activities (IGAs) can exhibit the difficulties inherent in entrepreneurship in Africa in general and in Côte d'Ivoire in particular.

In fact, IGA training recipients did not receive any additional supports (coaching, capital) to perform their businesses after they left the program. A large number of them funded their project using the modest amount of cash saved along the project; savings which have also been used to mitigate income shocks. The difficulties of access to credit and coaching in the implementation of investment projects can be a source of frustration and dislocation of the social ties built after the exit of the program despite the training received in entrepreneurship.

This argument is consistent with the results by Blattman and Annan (2015) that showed in a randomized controlled approach that training in entrepreneurship combined with provision of financial (capital) support to start a business reduces the propensity of young Liberians to switch to other illegal and violent activities i.e. mercenary. This in return led to the strengthening of peace in the post-conflict period.

Conclusion

Côte d'Ivoire has experienced a long period of instability marked by a decade of civil war and a severe post-election crisis that has resulted in armed conflict. This situation exacerbated inter-community tensions; eroded social capital and alienated social cohesion especially among the youth. Youth are both actors and victims of conflict to the extent that they can be recruited as labor for destabilization. One of the challenges to post-conflict stabilization is to provide alternative economic opportunities for youth through the promotion of a legitimate occupation in the labor market.

Referring to the concept of positive peace and the theoretical linkage between youth occupation and attitude towards a culture of peace and non-violence, we use data from a youth employment program to assess return to peace in Côte d'Ivoire. These data were collected from a randomized control trial involving a sample of 4160 youth, including 3125 beneficiaries and 1,035 controls in 16 municipalities nationwide.

The experiment provides both the short term (four months after the launch of the program), and medium-term (fifteen months after the exit of the program) information on series of outcomes including social ties at the individual and community levels. A sub-sample of 2000 youth was randomly selected from the beneficiary population for additional training activities including 1000 for paid-job research in the modern sector and 1000 in entrepreneurship for the implementation Income Generating Activities projects.

The underlying hypothesis we test is that participation in the program restores state legitimacy and strengthens the social bonds and trust among citizens, which attitudes are necessary for peacebuilding.

On this basis we apprehend positive peace by a set of variables relating to social relations in the communities of Côte d'Ivoire, namely the number of membership / associative groups, leadership, participation in intra and extra community activities, participation in activities of general interest and the degree of trust in other communities, security forces (the police) and the government officials.

Two methods of investigation are used. On the one hand, we measured the causal effect of the program by estimating ordinary least square models and Logistic Model to capture the average treatment effect (ATE) and on the other hand, we gauged factors that predict the behavior in favor of the peace through the regression of a LASSO model. Several robustness check regressions have also been implemented including, local average treatment effect (LATE), cluster analysis and exogeneity tests for sub-groups such as gender and war-affected

neighborhoods. Concerning the impact assessment, two aspects are considered: the short-term and the medium-term impacts.

Results indicate that there is on average a significant difference between beneficiaries and non-beneficiaries in attitudes in favor of peace. In addition, the impact of the program (causal effect) on peace behavior is significant only in the short term because of its negative effects on trust between youth from diverse communities and between colleagues participating in the program. There are no significant medium-term effects. In the short term, participation in the program reduces the likelihood of trust in youth from other communities by about 29% and trust in colleagues by about 16% suggesting that the time frame of the program was too short to transform distrust accumulated throughout a decade of political unrest. However, there is a significant difference between the two groups in term of trusting the government, with a larger proportion in the treatment group, suggesting therefore a positive effect of the program to the improvement of state legitimacy.

Regarding the LASSO model, participation in the program is a significant factor in explaining later attitudes towards peace. While this relationship is mixed in the short term, there is a demarcation in term of policy option in the medium term. More specifically, fifteen months after the end of the program, beneficiaries who have received training in decent paid-job research have a positive attitude towards peace, while those who have benefited from training in entrepreneurship have a negative attitude.

To sum up, all of these findings corroborated results by recent other empirical evidences which pointed out the need to provide alternative opportunities for at-risk youth to support post-conflict peacebuilding. Nevertheless, employment policies should lead to promote youth employment overtime. Given the lack of decent employment in the modern sector, entrepreneurship in high productivity sectors is becoming a serious option to consider. For this reason, it is imperative to encourage these youth along their process of wealth creation by integrating the entire support channel including training, coaching, and capital.

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Appendices

Table A1: Compliance: correlation matrix

	Treatment baseline	Treatment endline
Treatment baseline	1.000	
Treatment end-line	1.000	1.000

Table A2 : Compliance: correlation matrix, policy options

	control	Paid-job	Self-emp	No training	control	Paid-job	Self-emp	No training
control	1.000							
Paid-job	-0.3237	1.000						
Self-emp	-0.3237	-0.3165	1.0000					
No traing	-0.3504	-0.3425	-0.3425	1.0000				
control	1.0000	-0.3237	-0.3237	-0.3504	1.0000			
Paid-job	-0.3423	0.9215	-0.2590	-0.3042	-0.3504	1.0000		
Self-emp	-0.3144	-0.2926	0.9443	-0.3210	-0.3144	-0.3249	1.0000	
No training	-0.3412	-0.3233	-0.3271	0.9578	-0.3412	-0.3526	-0.3239	1.0000

Table A3: Compliance: theoretical assignment vs. real world

Theoretical	Real world				total
	Control	Paid-job	Entrepreneur	No-training	
Control	1035	0	0	0	1035
Paid-job	0	981	11	8	1000
entrepreneur	0	59	936	5	1000
No training	0	47	9	1069	1125
Total	1035	1087	956	1069	4160

Table A4: other factors predicting peacebuilding : LASSO Results

Factors	Outcome variables							
	Participation to meeting	Trust in the family members	Trust in the in-community youth	Trust in the out-Community of other youth	Trust in colleagues	Trust in the police	Trust in the authorities	
Female	-0.0391		-0.0126	-0.0058	-0.0666	-0.0967	-0.0744	
Single								
Married	0.0662	0.0452	0.0227	0.0199	0.0437	-0.0932	-0.0997	
Income	0.0752	-0.0281			-0.0115	-0.0143	-0.0252	
Savings	0.0720				0.0326	-0.0098	0.0094	
schooling	0.0556				-0.0352	-0.0287	-0.0708	
Location: Marcory		-0.0190			-0.0318	-0.3169	-0.3724	
Location: Yopougon	0.0195	-0.0421	-0.0335	-0.0063		-0.2860	-0.3507	
Location: Yamoussoukro		-0.0340				-0.3346	-0.3924	
Location: San_Pedro	0.1178					-0.3173	-0.3005	
Location: Man	0.1546	-0.0054			-0.0164	-0.3283	-0.4044	
Location: Bondoukou			0.0578	0.0826		0.1193	-0.3639	
Location: Gagnoa	-0.0892					0.1064	-0.3106	
Location: Abobo	0.0440		0.0345	0.0132		-0.3008	-0.3434	
Location: Koumassi	0.0827	0.0072	0.0327		0.0265	-0.2392	-0.3288	
Location: Bouake	0.0224	0.0606		0.0016	0.0060	-0.3007	-0.4048	
Location: Korhogo	0.2144	0.0113		-0.0080		-0.3617	-0.3563	
Location: Dimbokro	-0.1017	-0.0201	-0.0580	-0.0042	-0.0473	-0.3472	-0.4082	
Location: Abengourou	-0.0593		-0.0162		-0.0618	-0.2925	-0.2772	
Location: Daloa		-0.0813			-0.0157	-0.3545	-0.4415	
Number of children			0.0060		0.0217	0.0035	-0.0031	
Number of days worked	0.0406	-0.0374	0.0114	0.0049	0.0586	-0.0153	0.0086	