The Impact of N-Power(Training and Empowerment)Program on the Duration of Youth Unemployment in Nigeria

Nwaobi, Godwin

VERITAS UNIVERSITY ABUJA, QUANTITATIVE ECONOMIC RESEARCH BUREAU NIGERIA

1 January 2019

THE IMPACT OF N-POWER

(TRAINING AND EMPOWERMENT) PROGRAM ON THE DURATION OF YOUTH UNEMPLOYMENT IN NIGERIA

GODWIN CHUKWUDUM NWAOBI

PROFESSOR OF ECONOMETRICS

DEPARTMENT OF ECONOMICS

COLLEGE OF SOCAL SCIENCES

VERITAS UNIVERSITY

BWARI, ABUJA

FCT, NIGERIA

gcnwaobi@quanterb.org

gcnwaobi@gmail.com

+2348035925021

JANUARY 2019

ABSTRACT

Nigeria is a lower income country (with extreme poverty status) characterized by very high youth unemployment and large informal sector. Consequently, the Nigeria government have implemented youth empowerment training (N-power) program to tackle the critical issues. However, youth training programs and their evaluations is complex. Yet there is relatively little evidence on the mechanisms through which they operate and their effect on outcomes beyond the labor market. Using detailed administrative records for program participants, follow-up surveys and field experiments; we shall construct a panel data model that will allow us to establish the effects of the new program (in the short run, medium term and long run) on the Nigerian economy:

KEYWORDS: N-POWER, NIGERIA, YOUTH UNEMPLOYMENT, RANDOMIZATION, FIELD EXPERIMENT, N-SIP, DYNAMIC PANEL, IMPACT EVALUATION EMPOWERMENT PROGRAM

JEL NO: J24, 015, J21, C90, C93, J64

(1.0) BACKGROUND AND POLICY PROBLEM

"Accelerating the creation of productive jobs through private sector growth and improvements in education (skills) remains the major medium term challenge while the pace of job creation has been inadequate leading to increasing frustration among the underemployed Nigerian youths" (UNDP, 2017).

Since the turn of century, Africa's development efforts have been affected by severe capacity deficits such as shortage of critical skills, inadequate leadership and weak institutions yet, to maintain the development momentum.

Socio-economic transformation has become the main focus of African countries at continental, regional and national levels. These include the transformative continental vision of Africa (Agenda 2063) ECOWAS VISION 2020 and the United Nations sustainable Development Goals (SDG 2030). Despite these institutional arrangements, African countries still face many challenges (Macroeconomic, socio-political, security and environmental). Consequently, priority has been given by the African governments to the implementation of appropriate economic policies for employment and investment in education and health. The observed trends also made inclusive growth as a means for eradicating poverty and promoting shared prosperity. In other words, such growth needs to be rich in job creation as well as strengthening livelihoods resilience. Unfortunately, intra-migration and increasing youth unemployment challenge continue to undermine progress, peace and security in many African countries such as Nigeria.

Structurally, Nigeria consists of thirty-six states, six regions, seven hundred and seventy-four local government areas, and a federal capital territory. At independence (of the late 1960s) after a shift from agriculture to crude oil (gas), Nigeria's growth has been driven by consumption and high oil prices. However, previous economic policies left the country unprepared for the eventual collapse of crude oil prices and production. In fact, after more than a decade of economic growth, sharp and continuous decline in crude oil prices (since 2014Q3) along with a failure to diversity the revenue sources (foreign exchange) in the economy; led to a recession in 2016Q2 (FMNP, 2017). In other words, decades of increased consumption and high oil price-driven growth led to an economy with a positive (negative) but jobless growth trajectory. The observed scenario is complicated by the Boko Haram insurgency which has devastated public life, displacing millions of people and condemning them to a life of destitution in IDP camps. And by turning different communities into a war zone, these insurgents have unleashed a major destruction on all socio-economic infrastructures on their path along with massive loss of lives

(impoverishment) in the northern regions. Similarly, the Biafra agitations in the South eastern regions of Nigeria create alarming political instability.

Regrettably, unemployment rate in Nigeria has been on the increase since the economic crisis in the year of 2014. Numerically, the trend of unemployment in Nigeria between 2011 and 2015 that remained below 30% during most of the period, suddenly increased sharply from 25.1% in 2014 to 36% in 2015 (UNDP, 2017). In fact, the national youth survey conducted in 2012 indicates that the proportion of youth (15-24 years) not in education, employment or training was 20.5%. Similarly, the multiple indicators cluster survey showed that 14.7% of Nigerian children aged 5-17 years were engaged in child labor during the same period (NBS, 2011, 2013). However, more recently, of the 20.9 million persons classified as unemployed as at 2018Q3, 11.1 million did some form of work but for too few hour a week to be officially classified as employed, while 9.7 million did nothing. Then of these 9.7 million that were employed, 35% have been unemployed for less than one year, 17.2% for a year, 157% unemployed with no alternative for two years while the balance 32.1% unemployed persons have been doing nothing for three and above years (NBS, 2018).

Clearly, for the latest period (2018Q3) the unemployment rate for young people (15-35 years) declined to 29.7% from 30.5% in 2018Q2. However, there was an increase given the rate of 2015Q3 (13.7%) 2016Q3 (19.1%), and 2017Q3 (25.5%). However, underemployment within the youth population (15-35years) during the same quarter declined from 27.2% (2017Q3) to 25.7% in 2018Q3. Therefore as of 2018Q3, 55.7% of young people were either underemployed or unemployed (doing nothing) compared to 52.6% in the same period of 2017Q3 (NBS, 2018).

Indeed with the above figures, Nigeria now ranks 173 out of 177 countries that have published their unemployed statistics in 2018Q3. While these results show a rise in the rate of unemployment, it also depicts a slowing down in the rate of increase in unemployment. However, the increasing unemployment and declining underemployment rate imply that

the fragile economic recovery has begun to create employment, but hours worked within these jobs are not enough for full time employment. Again, while this is ongoing, the inflow of entrants into the labor market continues to grow geometrically and thus, minimizing the effect of any jobs created within the economy upon the overall unemployment rate. Consequently, given the huge number of youths who enter into the labor force (market) each year, the government, perhaps, should focus on creating the right environment (such as investing in entrepreneurial education and skills acquisition) for the purpose of reducing high unemployment rate. But how best can the Nigerian government do this?

The rest of the paper is organized as follows: section two looks at the study objective and research hypothesis. Literature Review is examined in section three. Section four identifies the government program structures in Nigeria while section five presents the methodology, Data collection process is explained in section six.

(2.0) STUDY OBJECTIVES/RESEACH HYPOTHESIS

The main objective of this project is to evaluate the impact of an empowerment training program (N-POWER) through a field experiment in Nigeria. Specifically the study shall focus on four outcomes of interest: employment, earnings, job quality and welfare. We shall also examine whether there are unintended effects associated with the program scheme.

The research hypotheses are

H_0: There is no significant impact of N-POWER program on formal employment in Nigeria

H_1: There is significant impact of N-POWER program on formal employment in Nigeria.

Indeed, most young people are better educated, wealthier, physically healthier and live longer than their elders; but changes in the labor market, family relations and social structures present them with new set of risks and challenges. Here, opportunities for those without skills are fewer, traditional sources of employment are disappearing while people are far less likely to hold a job for life. Yet young people usually face the prospect of periodic successive job change and the need to acquire new skills throughout their working lives to remain employable (Marshall and Butzboch, 2003). Thus, the best defense against social exclusion is a job and the best way to get a job is to have a good education with the right training and experience.

However, the international labor organization (1996) reports that unemployment rates are twice as high among the (15-24) and (25+) age groups than among adults across both developed and developing countries. This research also showed that youth unemployment rates were significantly higher in the 1990s than in the 1980s. Regrettably, early unemployment can permanently impair people's future productive capacity; and the longer an unemployment spell lasts, the more difficult it is to find job or work. Again, unemployment can prevent young people from making the passage from adolescence to adulthood that entails establishing a household (or family). It is also evident that unemployed young people suffer more health problems than those who are employed, including lower rates of general health; more anxiety and depression; high rates of smoking and higher suicide rates. Clearly, young people are at high risk of social exclusion if they fall into a downward spiral of worsening health with unemployment.

Yet, in seeking solutions to youth unemployment, we must clearly identify its causes. Perhaps, social exclusion is both a cause and effect of unemployment and this alone may not explain the high and persistent patterns of youth unemployment. In fact, changes in aggregate demand, the

growing demand for skilled workers and the rising participation of women who compete with the young for jobs appear to explain in large measure, the continuous rise in youth unemployment (ILO, 2000). And since a strong economy may create employment and not employability, then certain factors are of considerable importance: educational system, processes for enabling youth to make transition from education to employment as well as safety nets for catching those that are vulnerable.

Consequently, training (empowerment) programs are designed to build human capital and foster the acquisition of skills with the expected outcome of improved employment. Yet, these programs can equally facilitate the contact of beneficiaries with the labor market by providing work experience, labor market intermediation, contacts and references for future employment. In other words, if the program increases participants' human capital, beneficiaries become more employable and more productive once employed (reflecting in higher employment levels and higher labor earnings).

On the other hand, the program may be successful in contacting beneficiaries with future employers (Alzua, et.al, 2015). Indeed, most of the empirical literature on training programs examined the effects on employment and wage levels. However, there are reasons to expect effects on other dimension. In fact, it is possible that these training programs effects (on employment and earnings) may reduce welfare programs uses. Unlike developed countries experimental studies in developing countries are limited with some impact evaluations provided optimistic results. A comprehensive review of these studies is summarized in table I below.

TABLE 1 IMPACT EVALUATION STUDIES REVIEW

S/N	AUTHORS/YEARS	COUNTRIES	PROGRAMS/METHODS	FINDINGS
1.	HECKMAN LALONDE AND SMITH (1999)	UNITED STATE EUROPE	EXPERIMENTAL TRAINING PROGRAMS	MODERATE IMPACTS WITH SUBSTANTIAL HETEROGENEITY

2.	CARD,ET.AL (2011)	DOMINICAN REPUBLIC	4 MONTH YOUTH TRAINING PROGRAM (TECHNICAL/SOFT SKILLS) EXPERIMENTAL	MODERATE POSITIVE EFFECT ON EMPLOYMENT/STRONGER EVIDENCE OF IMPACT ON EARNINGS AND FORMALITY FOR MEN
3.	ATTANASIO, KUGLER AND MEGHIR (2011)	COLUMBIA	SUBSIDIZED PROGRAM FOR POOR AND UNEMPLOYED YOUTH RANDOMISED	POSITIVE IMPACTS ON EARNINGS EMPLOYMENT AND JOB FORMALITY FOR MEN AND WOMEN
4.	ALZUA, CRUCES AND LOPEZ (2016)	ARGENTINA	LOW-INCOME YOUTH TRAINING PROGRAM RANDOMISED	SHORT-TERM EFFECTS ON EMPLOYMENT AND EARNINGS WITH DISSIPATE MEDIUM AND LONG TERM EFFECTS
5.	KABOMBA, CHO, MOBARAK AND OROZCO (2013)	MALAWI	VOCATIONAL AND ENTRE-PRENEURIAL TRAINING PROGRAM EXPERIMENTAL	POSITIVE EFFECTS ON SKILLS DEVELOPMENT, INVESTMENT IN HUMAN CAPITAL AND WELL BEING WITH NO LABOUR MARKET OUTCOMES IMPACT IN THE SHORT TERM
6.	MAITRA AND MANI (2013)	INDIA	SUBSIDIZED STICHING AND TAILORING PROGRAM EXPERIMENTAL	POSITIVE SHORT AND LONG TERM IMPACTS ON EMPLOYMENT, EARNINGS AND WORKING HOURS
7.	BARHULUU	MONGOLIA	VOCATIONAL	POSITIVE AND

	M, ET.AL (2017)		TRAINING PROGRAM RANDOMIZED	SHORT-TERM IMPACT ON EMPLOYMENT/POSITIVE IMPACT ON MONTHLY EARNINGS IN SHORT (MEDIUM) TERMS
8.	DIAZ AND ROSAS (2016)	PERU	PERUVIAN JOB YOUTH TRANING PROGRAM (PROJOVEN) RANDOMIZED	HIGH LONG TERM POSITIVE IMPACT OF PROJOVEN ON FORMAL EMPLOYMENT WITH CERTAIN HETEROGENEITY OF PROGRAM IMPACT ACROSS SUBPOPULATIONS
9.	IBARRARAN ET.AL. (2015)	DOMINICAN REPUBLIC	YOUTH TRAINING PROGRAM NON-EXPERIMENTAL	POSITIVE IMPACTS ON THE QUALITY OF EMPLOYMENT SUGGESTING GOOD EFFECT OF THE PROGRAM IN EMPLOYMENT FORMALITY OVERTIME
10	DIAZ AND JARAMILLO (2006)	PERU	PERUVIAN JOB YOUTH TRAINING PROGRAM (PROJOVEN) NON-EXPERIMENTAL	STATISTICALLY SIGNIFICANT IMPACTS ON EMPLOYMENT RATES, QUALITY OF EMPLOYMENT AND BENEFICIARIES MONTHLY INCOME

Indeed, experimental evidence on the impact of youth training (empowerment) programs in developing countries has been increasing during the last decade. However, most of the existing evaluations measure

the program's impact in the short-term (less than two years after beneficiaries finished the program). Notably, youth training programs do not have an impact in terms of employment but in terms of employment quality (possibility of finding a formal job) as well as employment contract and medical insurance with retirement pension; and also in terms of labor-based income (Ibarraran and Rosas 2009). Comparatively, in the economics literature on the short-term impact of vocational training programs in developed countries; there was great heterogeneity in the observed effects which varies depending on the participants characteristics as well as training type and as regards to vocational training programs for young people; they were noted to have lower impact than Adult-based programs. However, there was less evidence of long term impact (Schochet et,al; 2008).

(4.0) NSIP STRUCTURES (N-POWER)

For a longtime, the increasing rate of poverty in Nigeria has remained a paradox, alarming and inevitable. In attempting to solve this problem, numerous efforts have been put in place at all levels of governance but without any significant impact. Perhaps, it may be necessary to state that inappropriate targeting (resulting to the exclusion of the needy and inclusion of the connected) have contributed mainly to the observed failure. Specifically, in the past, there have been more than twenty-six attempts at the implementation of federal Government driven social protection programs since 1990 (YESSO, 2016; FGN, 2018). In fact, no comprehensive and synchronized policy in place for social protection which resulted in poor implementation, overlapping of roles and programs with largely ineffective and immeasurable attempts at monitoring, evaluation and accountability. Yet other known problem include:

(1) Weak synergy between states, federal and local government areas
(2) Failure to address fundamental issues of identification

(3) Unreliable mechanisms for targeting beneficiaries
(4) Lack of a credible and harmonized data base for planning
(5) Weak monitoring and evaluation as well as grievance and redress management processes (systems)
(6) Poor donor, government and partner coordination (alignment)
(7) Lack of transparent and effective payment system for direct G2p payment
(8) Limited scale and coverage as well as lack of accountability and ability to accurately measure impact.

Consequently, the National Social Investment Programs (NSIP) were created in 2015 (and operational in 2016) to overcome the failings of the past so as to enshrine the values and vision for graduating Nigerian citizens from poverty circles through capacity building, investment and direct support (FGN, 2018). Strategically, the main objectives of NSIO are as follows:

(I) Objective leadership and proactive monitoring and evaluation;
(II) Standard delivery mechanisms;
(III) Proper coordination and synergy among key ministries, departments and avenues as well as with states and LGAs of Nigeria.
(IV) Built and implemented sustainable and long term vision for social investment in Nigeria;
(V) and elimination of duplication of roles and responsibilities as appropriate.

As a holistic approach for delivering the social investment portfolio, NSIP has four major arms:

(A) N POWER (JOB CREATION AND YOUTH EMPLOYMENT)
(B) NHGSFP (NATIONAL HOME GROWN SCHOOL FEEDING PROGRAMME)
(C) NASSCO (NATIONAL SOCIAL SAFETY NET PROGRAMME)

(D) GEEPL (GOVERNMENT ENTERPRISE AND EMPOWERMENT PROGRAMME)

However, NASSCO programme has three pillars:

(1) NCTP (NATIONAL CASH TRANSFER PROGRAMME)
(2) YESSO (YOUTH EMPLOYMENT AND SOCIAL SUPPORT OPERATION)
(3) CSDP (COMMUNITY SOCIAL DEVELOPMENT PROJECT)

In general, the operational objectives of the above programs are as follows:

(I) Increase the poor and vulnerable households with access to income (livelihood) by providing access to targeted funds so as to absorb economic shocks,
(II) Reduce inequalities and wide disparities,
(III) Increase access to education and health services so as to empower vulnerable sectors,
(IV) Reduce rate of youth unemployment by linking interested volunteers to address observed gaps,
(V) Eradicate malnutrition in school age children by establishing a sustainable school feeding program,
(VI) Provide affordable credit to MSMEs and thereby increasing business revenue and facilitating market linkages,
(VII) Stimulate productivity and growth (of the rural communities),
(VIII) Capturing identities of unregistered and vulnerable groups for proper planning,
(IX) And promotion of access to financial services so as to increase rate of financial inclusion.

However, the challenges associated with the process of N-SIP include

(A) Lack of awareness (publicity) due to diverse and huge territory covered

(B) Poor connectivity and internet access for technology-aided timely and secure payments
(C) Remoteness of the locations where beneficiaries reside
(D) Attempts by state officials to short-change field office and beneficiaries in their payments,
(E) Unresponsive and unmotivated state officials,
(F) Attempted racketeering around farmers-caterers food purchase process, and
(G) Attempts to exploit the low literacy and poverty levels of some program beneficiaries by extorting unapproved fees from them.

N-POWER is a job creation and empowerment program of the National Social Investment Program (NSIP) of the Federal Government of Nigeria (FGN).Basically, it is the employability and enhancement program aimed at imbibing the learn-work-entrepreneurship culture in youth between the ages of 18 and 35. Indeed, the FGN aggressive investment in youth development targets some of the perennial inadequacies in public services such as low teacher to Pupil ratio in public primary schools; high rate of preventable disease and lack of taxable persons within the tax net. And using N POWER, the Nigeria government aims at utilizing a large volunteer work-force to fix some of the problems in public services as well as stimulating the larger economy. It also focuses on providing our non-graduates with relevant technical and business skills that enhance their work outlook (livelihood). Essentially, the goals of N-POWER include:

(1) To intervene and directly improve the livelihood of a critical mass of young unemployed Nigerians;
(2) To develop a qualitative system for the transfer of employability, entrepreneurial and technical skills;
(3) To create an ecosystem of solutions for ailing public services and government diversification policies and
(4) To develop and enhance Nigeria's knowledge economy.

Consequently, the various categories of N-POWER are as follows:

1. GRADUATE CATEGORY: (A) N-POWER VOLUNTEER CORPS:
   (I) N-POWER TEACH
   (II) N-POWER TEACH (STEM)
   (III) N-POWER HEALTH
   (IV) N-POWER AGRIC
   (V) N-POWER VAIDS
2. NON-GRADUATE CATEGORY: (A) N-POWER KNOWLEDGE
   (B) N-POWER BUILD
   (C) N-POWER JUNIOR
   (D) N-POWER INNOVATION

Structurally, the N-POWER volunteer corps is the post-tertiary engagement initiative for Nigerians between 18 and 35 with a paid volunteering programme of two-year duration. Operationally, the graduates will undertake their primary tasks in identified public services within their proximate communities. They are also entitled to computing services that will contain information necessary for their specific engagement as well as information for their continuous training.

Specifically N-POWER Teach Volunteers will help improve basic education delivery in Nigeria by way of deployment as teacher assistants in primary schools. Again, as a component of the N-POWER teach program, N-POWER Teach (STEM) uses young graduates with the skills and interest in computer programing (and other related fields) to assist in the implementation of the Federal Government's STEM program for primary and secondary schools. Similarly, N-POWER Health volunteers will help improve and promote preventive healthcare in their communities to vulnerable members of the society (inclusive of pregnant women and children) as well as families and individuals. N-POWER Agro volunteers are expected to provide advisory service to farmers across the country by way of disseminating the required knowledge as well as gathering data of

Nigeria's agriculture assets. Similarly, the voluntary Asset and income Declaration scheme (VAIDS) seeks to encourage non-compliant and partially compliant taxpayers to voluntarily declare their correct income and assets and then pay the appropriate tax due to the government.

Essentially, this scheme is designed for one year after which participants who have performed commendably might be offered job opportunities by the relevant tax authorities while the remaining participants will be transferred to N-Power Teach to conclude their program duration.

Under the second category, for the N-POWER knowledge, young Nigerians are trained to build a knowledge economy equipped with world class skills and certification to become relevant in the domestic and global markets. Similarly, N-POWER Build is a vocational training component of the NSIP scheme that is dedicated to the training and certification of unemployed Nigerian youths aimed at building highly competent and skilled workforce of technicians, artisans and service professionals here N-POWER build is divided into seven trade disciplines: AUTOMOBILE, CARPENTRY and JOINERY, ELECTRICAL, INSTALLATIONS, MASONRY, PAINTING AND DECORATING, PLUMBING AND PIPEFITTING, WELDING AND FABRICATION. This program is designed to run for a period of twelve months which is made up of three months in training centers and nine months of apprenticeship with relevant industry employers. In addition to the provision of required training materials (consumables and tools) the beneficiaries (trainees) also get a monthly stipend of N10,000. However, trainees who qualify for the apprenticeship phase of the programme will be given their tool kits as a free exit package.

In order to foster a future for our young citizens where creativity and innovation find expression, the Nigeria government has also introduced the "every child counts education policy" (N-POWER JUNIOR) to revolutionize digital literacy, functional skills acquisition, school infrastructure and teacher retraining so as to transform Nigeria as

knowledge driven economy. In fact, through this programme, the government is facilitating practical creative and innovative skills that will enable Nigeria children are the catalyst for Nigeria's emerging economy with twelve model schools being developed across six geo-political zones. The FGN (in collaboration with states) also targets remodeling ten thousand class rooms every year (with improved training kits)

And more recently, through the N-Power (INNOVATION HUBS PROGRAMME), FGN plans to establish eight technology innovation hubs around the country with one in each geo-political zone (including Abuja and Lagos). Each hub is expected to incubate about twenty businesses annually with the potentiality of creating about five thousand jobs within a period of two years. Essentially, the hubs are intended to spur the spirit of innovation across the country while providing indigenous solutions to local problems. In general, as at August 2018, 500,000 graduate participants have been deployed to serve in the teaching, health, agriculture, tax and monitoring spheres; with a monthly stipend of N30,000. Operationally, these N-POWER volunteers are given devices with relevant content for continuous learning so as to facilitate their ability to successfully implement the selected vocation while enabling them take ownership of their lives. Similarly, about 20,000 non-graduate participants in the N-Build category have been trained in the 36 states and FCT (Abuja) with a monthly stipend of N10,000 for three months period in audited skill centers with tool boxes to facilitate learning and self-reliance. Subsequently, these beneficiaries are placed as interns for nine months through close collaboration with relevant agencies.

5.0 METHODOLOGY

Empirically, an impact evaluation seeks to establish and quantify how an intervention affects the outcomes that are of interest to analysts and policy makers. Thus, to establish causality between a program and an

outcome, we shall use impact evaluation methods to rule out the possibility that any factor other than the program of interest explain the observed impact (Gertler, et.al, 2011). Basically, the impact evaluation formula is given as:

$$\alpha = (Y_1 Ip = 1) - (Y_0 Ip = 0) \quad (5.1)$$

Where α⇒Causal import

P⇒Programme

Y⇒Outcome

$(Y_1 \, l \, P = 1)$ ⇒outcome with the programme

$(Y_0 \, l \, P = 0)$ ⇒outcome without the programme

As an empirical illustration, if P denotes a skill training program and Y denotes personal income; then the cause impact of the program (α) is the difference between a person's incomes (Y_1) after participating in the program (P = 1) and the same person's income (Y_0) without program participation (P = 0). Therefore, by comparing the same individual with herself at the same moment; we would have managed to eliminate any outside factors that might have explained the difference in outcomes. Indeed, the basic impact evaluation formula is valid for any unit that is being analyzed: person, household, community, business, school, hospital, other unit of observation affected by the program. Similarly, the above formula is valid for any outcome (Y) that relates to the program in context.

Practically, a key goal of an impact evaluation is to identify a group of program participants (treatment group) and a group of non-participants (comparison group) that are statistically identical in the absence of the program. In fact, if the two groups are identical, then any difference in outcomes must be due to the program. Thus, our key challenge is to identify a valid comparison group that has the same characteristics as the

treatment group. Critically, the treatment and comparison groups must be the same in three major ways:

I. The treatment group and comparison group must be identical in the absence of the program,
II. The treatment and comparison groups should react to the program in the same way, and
III. The treatment and comparison groups cannot be differentially exposed to other interventions during the evaluation period.

Therefore, when the above conditions are met, only the existence of the program of interest will explain any differences in the outcome (Y) between the two groups given an implemented program. However, it is important to note that the estimated impact (α) can be called "intention-to-treat" estimate (ITT) or "Treatment-on-the treated (TOT). Here, the difference will be attributed to sampling composition of possible vs actual participants,

Specifically, we assume OLS regressions where the regressor of interest is the indicator of whether an eligible applicant was randomly selected to participate in the N-POWER program (treatment group) or not to participate in the program (control group). Again, we shall include controls for individual characteristics and pre-treatment outcomes to control for minor chance imbalance in the randomization as well as gaining precision in our estimates. Thus, the empirical regression equation is of the following form:

$$Y_1 = \alpha + \beta \text{Treatment Group}_i + d' X_i + \varepsilon_i \qquad (5.2)$$

Where Y_1 = the outcome of interest such as employment earning, welfare for each individual (i) in the sample

α = constant

Treatment Group_i = the indicator for being assigned to the treatment group (Treatment Group = 1) or

Control group (Treatment group = 0)

α_i = vector of individual characteristics (including individual's age, sex, educational achievement and marital status)

Clearly, the estimate of β from the regression equation (5.2) corresponds to an intention to treat (ITT) estimator. We shall also perform an analysis of heterogeneous effects by sex and by age group for some of the outcomes of interest by including interactions between the treatment group indicator and relevant variables. Furthermore, we shall compute the effect of the N-POWER program from regressions of the outcomes of interest as a function of actual participation in the program (D) of the following form:

$$Y_i = \alpha + \beta D_i + dX_i + \varepsilon_i \qquad (5.3)$$

with participation (D) instrumented by the random assignment variable (Treatment Group)

And since in the case of N-POWER, none of the individuals in the control group will end up participating in the program; then as one sided non-compliance, implies that the estimate of β in the instrumental variables regression will capture the Treatment on the Treated (TOT) effect of the program. Therefore, this implies up scaling the ITT effects by the first stage effect of the instrument on the participation variable. However, ITT is fundamentally the policy relevant parameter: since in most cases individuals are free to decide whether to take up a program or not. Technically, ITT provides policy makers with the effect of offering a program. In fact, the selection of individuals into the program after the random assignment and the different alternatives for defining actual participation complicates the interpretation of TOT effect (Hirshleifer, 2014; Angrist et.al. 1996).

Indeed, the promoters of N-POWER program have specified increased employability as one of the training objectives. Essentially, this

implies that training would raise the probability of moving from non-employment to employment as well as lowering the probability of moving from employment to non-employment, consequently, using retrospective data on monthly employment outcomes (collected as follow-up survey). We wish to test whether candidates assigned to N-POWER training had different employment transition rates than members of the control group. We also intend to use the dynamic model to examine the effects of the N-POWER program on transitions into and out of jobs with employer – provided pension scheme (as a measure of job quality), given the availability of a continuous record of monthly outcomes in the period between the end of training and the follow-up survey. However, a full understanding of the impact of the N-POWER program requires a model that can separate the initial conditions effect from the post-program effects on transition rates (Card, et.al 2011).

Therefore, the proposed dynamic model of the effects of the N-POWER program has two components:

i. A model for the initial condition in month one (a period just after the end of training) and
ii. A model for the rate of employment transitions over the next six months.

Given this framework and context, the N-POWER program has two prototype effects:

(A) An effect on employment (or pension scheme average) in first month that could be negative if the training does not create job,
(B) An effect on the subsequent transition probabilities.

Thus, the econometric problem is to develop a model of the following format:

$$\Pr(Y_{it,}\, Y_{12,}\ldots Y_{17} \mid T_{i,}, X_i) = \Pr(y_{it} \mid T_i, X_i) \times P(Y_{12}, Y_{13}, \ldots Y_{13,}\ldots Y_{17} \mid Y_i, T_i, X_i) \quad (5.4)$$

where Y_{it} = employment status of person i in month t

X_i = a set of observed baseline covariates for individual i

T_i = indicator for program status

Here, we shall assume that there is unobserved heterogeneity across the population represented by the random effect (α_i). Again, we assume that the distribution of the random effects is identical for the realized treatment and control groups. Specifically, in the absence of the N-POWER program, we assume that in months 2-7, the probability that person i is employed in month ŧ depends on α, linear trend (T) observed α's and employment status in the previous month; which is given as follows:

$$\Pr(Y_{it} = 1 \text{ I } Y_{it-1}, T, = 0, X_i, \alpha_i) =$$
$$\Pr(\beta_0 + \beta_{it} + X_i\beta_x + \lambda Y_{it-1} + \alpha_i + e_{it} = 0) \quad (5.5)$$

Where e_{it} = independent and identically distributed logistic random variable

Therefore, equation (5.5) can be re-written as

$$\Pr(Y_{it} = 1\text{l } Y_{it-1}, T, = 0, X_i, \alpha_i) =$$
$$\text{Logit}(\beta_0 + \beta_{it} + X_i\,\beta_x + \lambda Y_{it-1} + \alpha_i) \quad (5.6)$$

Where logit (z) = exp(z)/[1+ exp(z)] is the logistic distribution function. And for participants in the treatment group, we assume that exposure to treatment potentially increases 'employability' and this is captured by two treatment effects:

(A) A potential increase in the probability of being employed in period (t) if the person was not working in period (t - 1)

(B) And a potential increase in the probability of being employed in period t if the person was working in period t – 1

Basically, we assume that

$$\Pr(Y_{it} = 1 \mid Y_{it-1}, T_i = 1, X_i, \alpha_i) = \text{Logit}[\beta_0 + \beta_{it} + X_i \beta_x + \lambda Y_{it-1} + \emptyset_0 (1 - Y_{it-1}) + \emptyset_1 Y_{it-1} + \alpha_i] \quad (5.7)$$

Where $\emptyset_0$ = represents the effect of the N-POWER program on the probability of moving from non-work to work $\emptyset_1$ = represents the effect on the probability of remaining employed.

In general, using the full monthly panel date, we can estimate a dynamic Panel model of the following form:

$$Y_{it} = \alpha + \beta \text{Treatment Group } XY_{i,t-1} + P\text{Treatment Group } X (1-Y_{i,t-1}) + \emptyset Y_{i,t-1} + d' X_i + \emptyset_t + \varepsilon_{it} \quad (5.8)$$

Where Y_{it} = employment outcome of interest (taking values 0 or 1)

$Y_{i,t-1}$ = the same employment outcome in the previous month

Treatment Group = indicator for being assigned to the treatment group

β = coefficient of the interaction between the treatment group indicator and the outcome in the previous period captures the degree of persistence of formal employment (= probability of continuing in employment once an individual is employed)

P = coefficient of the interaction between the treatment group indicator and the transformation $1-Y_{i,t-1}$,which indicates whether individual i was not employed in the previous period

= access effect (which is the probability of entering employment when the individual is unemployed)

$Ø$ = coefficient that captures the overall degree of dependence of current employment status on that of the previous period for individuals in both the treatment and the control group

$Ø_t$ = controls for every month

X_i = set of individual characteristics

ε_{it} = cluster standard errors by individual

6.0 DATA COLLECTION PLAN

The dataset of the study will be mainly collected from the N-POWER administrative data as well as follow-up survey. The administrative dataset is expected to contain information on the participants, including names and addresses, telephone numbers, date of application etc. critically, the personal information will be used to re-contact the applicants for the follow-up purposes. Again, the questionnaire design to be used for the follow-up survey will follow the formal of YESSO Single Register, N-SIP Social Register and Nigeria's living standard measures study of the General household survey. However, three groups of variables will be used in the study:

(A) Individual and household level baseline characteristics which comprises demographic and socioeconomic characteristics of the applicants including age, marital status, education level completed and occupational status; household size and composition, sex and relationship to the candidate.

(B) Main outcome variables: labor market insertion and quality of employment (is employed, has health insurance, pension, salaried employment, contract, weekly hours worked); income (per month, expressed in logarithms); and income conditional to remunerated income (per month expressed in logarithms).

(C) Institutional variables

Statistically, our sample design will follow two stages: determining the primary sampling units required for randomization and power calculation for survey sample. In the proposed project, the sampling will be designed to be representative of the unemployed youths in Nigeria as well as generating sufficient statistical power for external validity.

YESSO SINGLE REGISTER (SR) is a database of community identified and community-ranked poor households/families, containing relevant socio-economic information on individual in the household. The information collected here is established through a community based information gathering (CBIG) process where the community members across its social strata as the main progenitors identify the poor amongst them using community established and agreed criteria.

THE N-POWER PORTAL having processed over 2.5m applicants, hosts a database of unemployed graduates seeking employment and thus provides a veritable platform for engaging graduates for the country; private and public sector alike, with data providing details of qualifications, BVN, age, numbers, interests, etc.

NASSCO SOCIAL REGISTER (NSR) is information systems that support the outreach, intake, registration, and determination of potential eligibility for one or more social programs. It provides a gateway for people to register and be considered for potential inclusion in social programs. It is also an information systems that support registration and determination of potential eligibility for social programs as well as containing information on all registrants whether or not they are deemed eligible for (or enrolled in) selected social programs.

NBS GENERAL HOUSEHOLD SURVEY (GHS-PANEL) is a nationally represented survey of 5,000 households, which are also representative of the geopolitical zones (at both the urban and rural level). It is basically a long term project to collect household-level panel information, such as data on household characteristics, welfare and agricultural activity, in fact, the

ability to follow the same household's overtime makes the GHS-Panel, a new and powerful tool for studying and understanding the role of agriculture in household welfare overtime as well as how households add to their human and physical capital; how education affects earnings as well as the role of government policies and programs on poverty (inter alia).

REFERENCES

Alzua, M, and P. Brassiolo (2006) "The impact of training policies in Argentina: an Evaluation of proyecto Joven, working paper OVE/WP-15/06/IDB

Alzua, M, G Cruces and C.Lopez (2015) "Youth Training programs Beyond Employment evidence from a randomized controlled trial, Document of Trubayo Nro, 177

Alzua, M.L. et.al. (2016) "Long-run effects of youth training programs: Experimental Evidence from Agentina", Economic inquiry, 54 (4)

Angrist, J. et.al. (1996) "Identification of causal effects using instrumental Variables", Journal of American Statistical Association, Vol.91(434)

Attanasio, O, et.al. (2011) "subsidizing vocational training for Disadvantaged Youth in Colombia: Evidence from a Randomized trial", American Economic Journal of Applied Economics, 3(3)

Bamberger, M. (2006) Conducting Quality Impact Evaluations under Time And Budget Constraints, Washington World Bank

Batchuluum, et.al. A. (2017) "Impact of short term Vocational training on Youth unemployment: Evidence from Mongolia, PEP working paper 12

Card, D. et.al. (2011) "The Labor market impacts of youth training in the Dominican Republic" Journal of Labor Economics, 29(2)

Diaz, J.J. and Y.M. Jaramillo (2006) "An Evaluation of The preuvian youth Labor Training program projoven" Working paper OVE/WP-10/06

Diaz, J.J and D. Rosas (2016) "Impact of the Job Youth Training program projoven"IDB Working paper seriesIDB-WP-693

FGN (2018) Investing in our people: policy Brief, Abuja: Federal Government of Nigeria (FGN)

FMNP (2017) Nigeria: Economic Recovery And growth plan (2017-2020) Abuja: Federal ministry of Budget and National Planning (FMNP)

FMLE (2015) National Directorate of employment Annual Report Abuja: Federal Ministry of labor and employment (FMLE)

Gertler, P.J. (2011) Impact Evaluation in practice, Washington: World Bank

Hall, R.E and J.B Taylor (1997) Macro-Economics New York: W.W. Norton

Heckman, J.J. et.al (1999) "The economics and econometrics of active Labor Market Programs", Hand book of labor

Economics, 3

Hirshleifer, S. et al (2014) "The impact of vocational Training for the Unemployed: Experimental Evidence from Turkey" World Bank Policy Research Working Paper 6807

Ibarrahan, P. et.al. (2012) "Life skills, Employability and training for Disadvantaged youth: Evidence from a Randomized Evaluation Design", IDB Working paper No IDB-WP- 342

ILO (1996) Social Exclusion and Anti-poverty Strategies, Genera: International labor organization (ILO)

ILO (2000) "Employing Youth: promoting Employment Intensive Growth" ILO interregional Symposium report, December, 13-14

Ibarraran, P. et.al. (2015) "Experimental Evidence on the long term Impacts of a Youth Training Program" mimes, Washington

Ibarraran, P. et.al. (2014) "Life skills, Employability and Training for Disadvantaged Youth: evidence from a Randomized Evaluation Design", IZA Journal of labor and Development, 3(1-24)

Kluve, J. (2010) "The Effectiveness of European Active labor Market Program" Labor Economics, 17(6), 904-918

Marchall, K and O. butzbach (2003) New Social Policy Agendas For Europe
And Asia: Challenges, Experience and Lessons, Washington: World Bank

Meier, G.M and J.E. Stigliz (2001) Frontiers of Development Economics New York: Oxford University Press

NBS (2011) The Multiple indicators cluster survey, Abuja: National Bureau of Statistics

NBS (2013) National Youth Survey Study, Abuja: National Bureau of Statistics

NBS (2018) Labor Force Statistics: Volume 1 Abuja: National Bureau of Statistics (NBS)

Nwaobi, G.C. (2001) Modern Econometric Modeling for Developing Economies I Abuja: Goodtimes Press

Nwaobi, G.C. (2018) Modern Econometric Modeling for Developing Economies IV Abuja: Vine Press

Olajide, D. et.al (2014) "Randomized Evaluation of Unconditional cash Transfer Scheme For the elderly in Ekiti State Nigeria", SEP Base line survey

Schochet, P., et.al (2008) "Dues Job corps Work? Impact findings from the National Job Corps study" American Economic Review, 98(5)

UNDP (2017) Nigeria: Sustainable Development Goals (Indicators baseline Report): Abuja: National Bureau of Statistics (NBS)

Virod,T. et.al (eds) Restructuring Economies in distress Oxford: Oxford University Press

World Bank (2009) Youth and Employment in Africa: the Potential, the Problem, the Promise, Washington: World Bank

YESSO (2016) Targeting the poor and vulnerable in Nigeria: use of a Single Register, Abuja: Federal Operations coordinating Unit