# Participation in Public Employment Services in Francophone Sub-Saharan Africa

**FOMBA KAMGA Benjamin***
IZA, REMA & University of Yaoundé II-Soa
**WAMBA TINDO Joachim**
REMA & PhD Student, University of Dschang

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## Abstract

The objective of this article is to analyse participation in Public Employment Services (PES) in Francophone sub-Saharan Africa. In this light, the study used data from the Survey on Improving Employment Policies (SEPI) carried out in 2018 by the research centres of the different countries (Cameroon, Congo Brazzaville, Côte d'Ivoire, Chad and Senegal) with the support of the International Development Research Centre (IDRC). A Heckman and Smith (2004) approach was used for the analysis of participation in a public programme. In addition, a bivariate probit model was used to assess the relationship between the various public programs. The following results were obtained: (i) the main channel of information on the existence of a PES is the social network, it is used by more than one person in three in our sample (ii) the main reason to the non-take-up of public programs is that individuals think that the PES cannot help them. This feeling is shared by a quarter of the non-registered persons (iii) almost all applicants request a job offer (iv) results suggest that personal characteristics, socio-economic factors and labour market history determine participation in PES. Specifically, results indicate that being male, education, and the number of unemployment spells increase the probability of participating in public employment services by 15%, 5%, and 16% respectively. In addition, participation in the PES increases the likelihood of participation in others publics programs. Our results argue for the establishment of a one-stop shop for employment as well as the introduction of incentives to support job search.

***Keywords:*** Public Employment Services, Participation, Francophone sub-Saharan Africa.

*Corresponding author: fomba1@yahoo.fr
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# Note

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## 1. Introduction

Since the neoclassical period, the question of unemployment analysis has been a permanent and fundamental concern for countries. Indeed, even when the unemployment rate reaches low levels in some countries, it only takes an internal or external shock for many people to lose their jobs and unemployment to start rising again[1]. Its importance is felt both in the major macroeconomic aggregates (Kaldor, 1974) and in the programs of almost all the world's institutions and governments (MDGs, MDGs). The persistence of unemployment has led to the introduction of Active Labour Market Policies (ALMP) that can control it.

The fight against unemployment is done through passive and active employment policies[2]. Passive employment policies, which include unemployment compensation, unemployment insurance, work-sharing through reduced working hours and/or "early" retirement, require significant budgetary resources and maintain high levels of unemployment insofar as they delay entry or re-entry into the labour market through the high value of the reservation wage (Card and Levine, 2000). At the very least, they are recognised for their ability to create employment through their positive effect on aggregate demand, the financing of the costly job search process, and improvements in the quality of job matching (Addison and Portugal, 2008; Caliendo and al. 2013 ; Centeno and Novo, 2009). These policies are generally applied in developed countries such as those of the OECD, but appear to be inadequate in developing countries, particularly African countries. The budgetary constraints they generate have led several countries, including developed countries, to opt increasingly for ALMP.

ALMP in their original design aimed to reduce job search time by improving transparency between job offers and job applications. This intermediation function was gradually accompanied by other instruments such as capacity building for job seekers, reduction of labour costs through tax policies or wage subsidies, entrepreneurship policies or the promotion of labour-intensive jobs, etc. The aim was to reduce the time spent looking for job by improving transparency between job offers and job requests.

Whether passive or active, employment policies should be effective. They are implemented either by the State itself through dedicated ministries or Public Employment Services (PES)[3],

[1] For example, one of the consequences of the Covid19 pandemic is the considerable increase in the number of people looking for job in developed countries such as the United States of America, France, etc.

[2] However, the boundary between these two types of measurement is becoming increasingly blurred. Thus, the degressivity of unemployment benefits transforms this passive expenditure into active expenditure since it is supposed to encourage the unemployed to find a job quickly.

[3] PES is the public service responsible for implementing the active policy of the government. These PES were essentially created with the Structural Adjustment Programs within the framework of the "social dimension of structural adjustment".

or by private entities that have the State as their client or that benefit from a concession and have all or part of their services paid for by the beneficiaries. If the final objective of an employment policy is to reduce the unemployment rate, it must be noted that this is conditional on the support of potential beneficiaries. While the problem of participation does not arise in developed countries or those that apply passive policies, it is crucial in developing countries, particularly in African countries. In African countries, the absence of unemployment compensation policies or the failure to systematically require registration with the PES in the recruitment process reduces incentives to join. These low enrolments[4] raise the problem of the attractiveness of PES. The objective of this article is to analyse the determinants of the registration of job seekers with the PES. By considering the registration process, this article breaks it down into two blocks: Awareness and Enrolment.

This article contributes to the existing literature in two points. First, to our knowledge this study is the first to evaluate the treatment of registration with the PES and other employment programs and projects that have emerged since the mid-2000s in five countries in sub-Saharan Africa. In fact, this study proposes an identification strategy that makes it possible to take into account the interrelationships that may exist between different public employment programs in the labour market. Secondly, the work dealing with labour market integration in Africa does not often refer to the formal channels implemented in the search for employment. This is mainly due either to a lack of data or to the fact that existing databases often do not allow these issues to be addressed. This article is based on an original database collected in 2018 and aims to contribute to the literature on the evaluation of ALMP by analysing the determinants of participation in public employment programs in French-speaking sub-Saharan Africa.

The remainder of this paper is organised as follows. In section 2 we will give a short overview of determinant of participation in Public Programs. Section 3 will be concerned with the econometric evaluation approach. Finally in section 4 empirical estimates will be presented. Section 5 concludes.

[4] In Cameroon, the use of PES or private agencies is infrequent because this option is chosen by 2.3% of the unemployed according to the 2010 Employment and Informal Sector Survey. In urban Congo, 9.1% of the unemployed use the Manpower Department according to the 2012 Congo Employment and Informal Sector Survey. In Côte d'Ivoire, the proportion of the unemployed who use intermediation agencies is 8.5% and 10.6% respectively for the Youth Employment Agency and private employment agencies according to the 2016 National Survey on the Employment Situation and the Informal Sector. In Senegal, 1.5% of the unemployed are registered in an employment structure according to the 2015 National Employment Survey.

## 2. A Framework for Analysing Participation in Public Programs

The participation process to a public program can be decomposed into eligibility, awareness, application, acceptance, and enrollment (Heckman and Smith, 2004). Most studies indicate that personal characteristics, socio-economic factors and program specifics influence participation in PES.

### *2.1 Personal characteristics*

The main characteristics of labour suppliers that explain the behaviour towards the PES are: age, qualification, family situation, gender, language, career path. Weber (2008) shows that people with a low level of education are more likely to be accepted in a public programme because of their vulnerability than those with a high level of education. On the other hand, people with high levels of education have easy access to information about the existence of a social benefit. For example, those with higher levels of education have a better knowledge of support possibilities and are more likely to take the initiative in finding support that will be useful to them in the labour market. Thus, the level of education affects both the eligibility of potential beneficiaries and their acceptance into the program (Heckman and Smith, 2004).

Studies indicate that the level of education and language proficiency are the primary factors that may explain take-up of social rights. For example, Heckman and Smith (2004) find a positive relationship between program participation and language proficiency. In fact, individuals with a high level of education or those who understand and read English easily have a high probability of participating in the Job Training Partnership Act (JTPA). The reason is that language proficiency is favourable to potential beneficiaries in accessing information on their eligibility because those eligible for a program are often not aware of or do not believe in their eligibility. Dmitrijeva and al. (2015) note that young people aged 16-24 are more numerous in the RSA programme because it represents the layer most affected by unemployment in France. Heckman and Smith (2004) confirm the relationship between age and participation in the public programme. They show that age influences an individual's participation at each stage of the selection process in the JTPA program. Indeed, at the time of application, individuals over 30 years of age have a low probability of being eligible for the program compared to individuals under 30 years of age. In terms of acceptance into the program, individuals under 18 years of age are less likely to be accepted than those between 19 and 21 years of age.

Dmitrijeva and al. (2015) point out that recipients living as a male or female couple, with or without children, are more often away from public services than single people. Single-parent families are the most likely to receive public benefits. A proportion of lone parents may be self-

referring. Indeed, these families are the ones who most often report requesting assistance, in particular to pay for housing, childcare, holidays, canteen, clothing, transport, etc. Single-parent families are also the most likely to have regular contact with organisations offering social benefits.

With respect to career paths, early work (Ashenfelter, 1978; Ashenfelter and Card, 1985; Bassi, 1983, 1984) assumed that it is earnings dynamics that determine participation in a social program. This argument is refuted by Heckman and Smith (1999), who argue that it is the dynamics of unemployment that lead to participation in a social program. In the light of the information provided in the literature, one would expect that young job seekers would be more inclined to register in the PES. The same applies to qualified job seekers who have invested in their human capital and therefore wish to develop their skills on the labour market. On the other hand, people living in a couple have a lower probability of enrolling in the PES because they generally have other problems such as childcare for young children.

**2.2 The role of socio-economic factors**

Lack of information on support (Duflo and al., 2006; Saez, 2009) is a major obstacle to take-up a social support system. This may be due to a lack of awareness, which is frequently identified among groups of disadvantaged people, typically represented by young people with low educational attainment; people with poor language skills; individuals belonging to ethnic minorities, etc. (Duflo and al., 2006; Saez, 2009). Hernanz and al. (2004) or Currie (2006) point to the role of transaction costs in the take-up of public services.

For Moffit (1983), social and psychological costs such as stigmatization explain non-take-up. The author links stigmatization to educational attainment. He points out that the higher the level of education, the greater the sense of stigma attached to the aid. The level of education is therefore presented as a factor of discrimination between different recipients of social benefits. The same analysis was conducted by Dmitrijeva and al. (2015), in the framework of the RSA programme in France. It shows that the programme is made up mainly of beneficiaries with few qualifications, with around 70% of people who have not passed the baccalaureate.

Van Oorschot (1996) states the hypothesis of voluntary non-take-up. This work shows that the targeting of programmes, mostly towards vulnerable groups, is often perceived by potential beneficiaries as a form of assistance or charity. Indeed, potential beneficiaries form mental barriers that can lead to withdrawal (Warin, 2008). Domingo and Pucci (2013) establish a causal link between the fear of shame and the stigma associated with a targeted service. This raises the problem of targeting benefits that may not be well perceived, even by the targeted population. Duflo and Saez (2003) focus on individual motivation as a factor influencing access to

information. Thus, the most motivated applicants have a high probability of being accepted into the program.

### 2.3 The responsibility of "bureaucrats".

Dragos and al. (2010) believe that the complexity of procedures related to the demand for a public service is an undeniable argument. Briggs and Rees (1980) or Corden (1983; 1987) reveal that certain administrative practices increase the probability of non-take-up. These are mainly : (i) a treatment of requests and applicants experienced by the latter as humiliating or degrading; (ii) the combination of a "service" function (reception, information) and a "control" or "anti-fraud" function; (iii) poor quality of communication with users, resulting in insufficient information and advice ; (iv) the use of complicated forms; (v) poor quality of decision-making (e.g. decisions taken on the basis of insufficient information or by categorising users by means of stereotypes); (vi) poor quality of the technical tools used in administrative procedures; (vii) and, finally, misinterpretation by staff of the rules of the system. Warin (2008) argues that the first cause of low participation is the lack of effective provision of services, which corresponds to a situation of rationing. Weber (2008) continues the analysis by showing that the lack of resources devoted to the functioning of public services is at the origin of this rationing.

## 3. Data and econometric strategy

### 3.1 The Survey on Improving Employment Policies (SEPI)

The data used in this article are from the Survey on Improving Employment Policy (SEPI) collected in 2018. This survey is carried out by the Research Canter’s of the different countries (Cameroon, Congo Brazzaville, Ivory Coast, Chad and Senegal) with the support of the International Development Research Center (IDRC) as part of the research project "Improving Youth Employment Policies in Francophone Africa". The survey focuses on young people aged 15 years and over whose schooling was no longer the sole objective or who were already active in the labour market. This approach avoids the low participation rates observed in national surveys and provides a better appreciation of the factors determining participation in a public employment program. Detailed information on socio-demographic characteristics, knowledge of employment promotion programs, career path in the labor market, etc. was collected during this survey on a sample of 14936 individuals. However, after a basic treatment, 14688 individuals met the requirements of the models used.

### 3.2. Descriptive analysis of the variables of interest

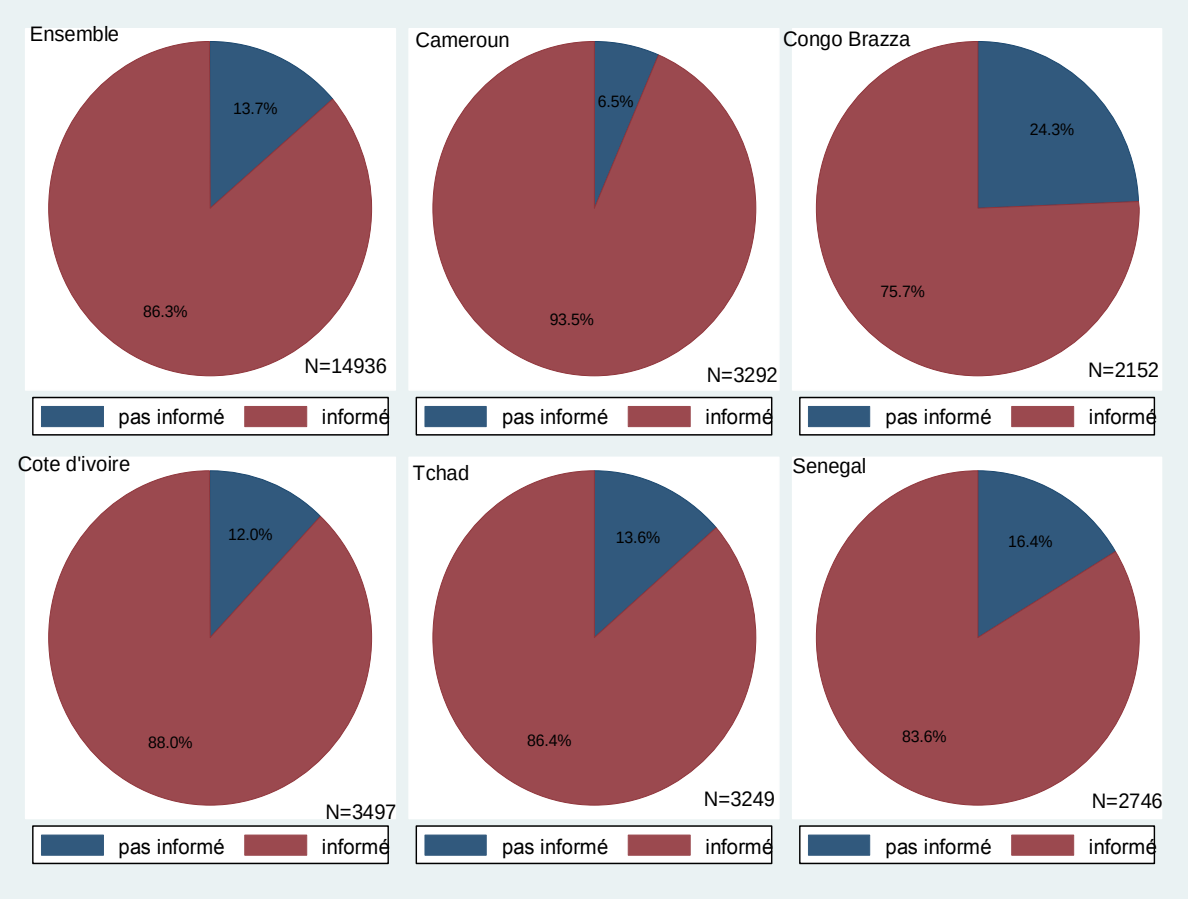
This sub-section discusses the experiences of young people with PES. Specifically, it discusses young people's pathways through the different PES (from knowledge of the PES to participation

in a programme) and their feedback (subjective evaluation). The rest of the paper is organized around the participation process of Heckman and Smith (2004).

**- Awareness**

With respect to awareness of the PES, the SEPI (2018) reveals that 86.3% of the individuals in the sample say they are aware of the PES, with only 13.7% saying they are not aware of the PES. However, the proportion of individuals who are aware of the existence of the PES varies between 75% and 94% depending on the country.

**Graph 1:** Awareness of the PES

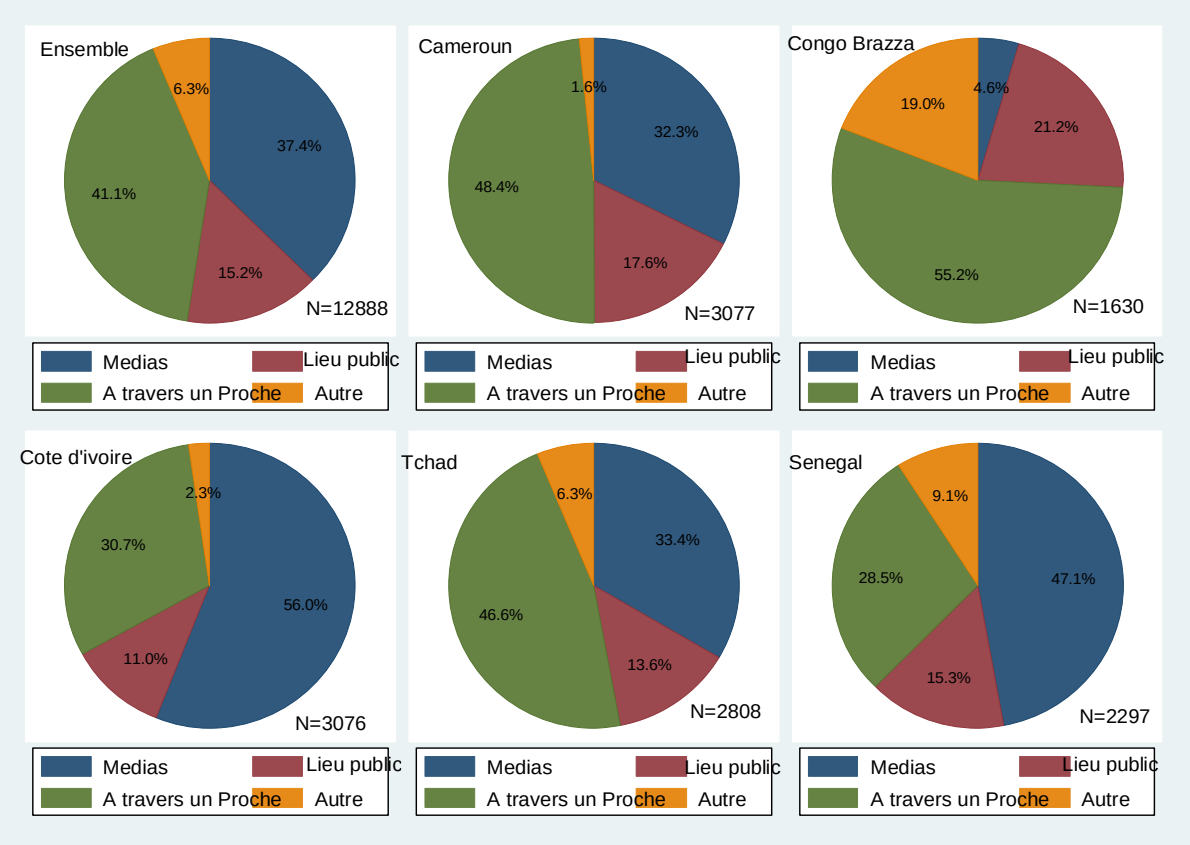



**Source:** SEPI (2018)

The question of the information channel is of prime importance in the jobseeker's strategy and makes it possible to assess the most informative medium with regard to the communication strategy implemented by the PES. In this regard, Heckman and Smith (2004) argue that the probability that an individual will be informed of the existence of a program depends on the individual's experience with the PES, his or her economic situation and the network of friends and acquaintances who have heard about or participated in the program. On this point, graph 2 indicates that more than 1/3 (41.1%) of the individuals know about the PES through a relative or acquaintance. This figure peaks at 55.2% in Congo Brazzaville. This result underline the

essential effect of "word of mouth" and shows that the PES is mainly known by its users. Moreover, the studies that deal with the channel of insertion in Sub-Saharan labour markets agree on the fact that job search or the obtaining of a job is essentially carried out through the mobilisation of the family solidarity network (see De Vreyer and Roubaud, 2013, page 21 for the case of urban labour markets in sub-Saharan Africa; Yogo, 2011 for the case of Cameroon). Information campaigns in the media through newspapers, Internet, etc. represent the second information channel, with 37.4% of individuals using this channel. This figure reaches 56% in Côte d'Ivoire. This means that formal PES campaigns in the media are beneficial. Now it is necessary to strengthen their dissemination at a more local level, for example by relying on community radios, remote schools, traditional and religious authorities, etc. Finally, less than 1/5 (15.2%) of the respondents say they learned about PES through an information campaign in a public place (school, fair, job exchange, etc.) and this figure varies between 11% and 22% depending on the country. Finally, 6.3% said they learned about the PES through another information medium. This figure rises to 19% in Congo Brazzaville, so special attention should be directed towards this channel, which seems to be adopted in this country.

**Graph 2:** Information channels on the PES




**Source:** SEPI (2018)

**-Application**

Knowing that the individual is eligible and informed, he or she must now decide to enrol in the PES. The candidate makes the decision to enrol in the program if and only if the earnings associated with enrolment are greater than the costs of enrolment. Table 1 shows that 68.61% of the job seekers in our sample are enrolled in the PES compared to 31.39% who are not enrolled in a PES. This proportion of people registered in the PES varies between 65% and 73% depending on the country.

**Table 1:** PES Application

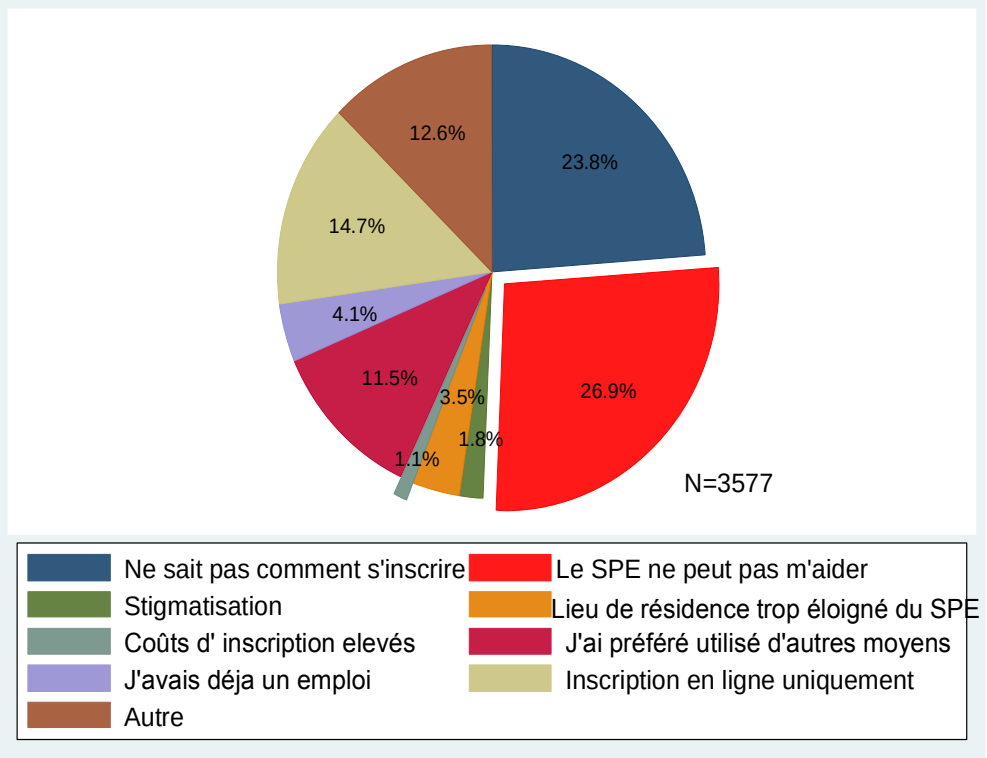
| | **Whole population** | **Cameroon** | **Congo Brazzaville** | **Côte d'ivoire** | **Chad** | **Senegal** |
|---|---|---|---|---|---|---|
| Applied | 10247 | 2172 | 1415 | 2458 | 2364 | 1838 |
| | (68,61) | (65,98) | (65,75) | (70,29) | (72,76) | (66,93) |
| Not Applied | 4689 | 1120 | 737 | 1039 | 885 | 908 |
| | (31,39) | (34,02) | (34,25) | (29,71) | (27,24) | (33,07) |
| **Total** | 14936 | 3292 | 2152 | 3497 | 3249 | 2746 |
| | (100,00) | (100,00) | (100,00) | (100,00) | (100,00) | (100,00) |

**Source:** SEPI (2018)

Individuals refuse to enrol in the PES for various reasons. Indeed, when asked the question: "Why have you never enrolled in a PES?" more than one person in four (26.9%) replied that they did not think the PES could help them. Similarly, 23.8% of individuals say they do not know how to register with the PES; 11.50% of jobseekers prefer to use other job search channels and 14.70% opt for registering on the internet and do not subsequently complete their registration at the nearest PES agency (Graph 3). 1.80% of non-registrants do not wish to be seen as assisted. Moffit (1983) already noted this state of affairs. In fact, individuals who are eligible for the various PES benefits choose non-take-up. This is because they believe that society will consider them to be "economically handicapped". This feeling of underestimation or the view of others leads these individuals not to enrol in the PES.

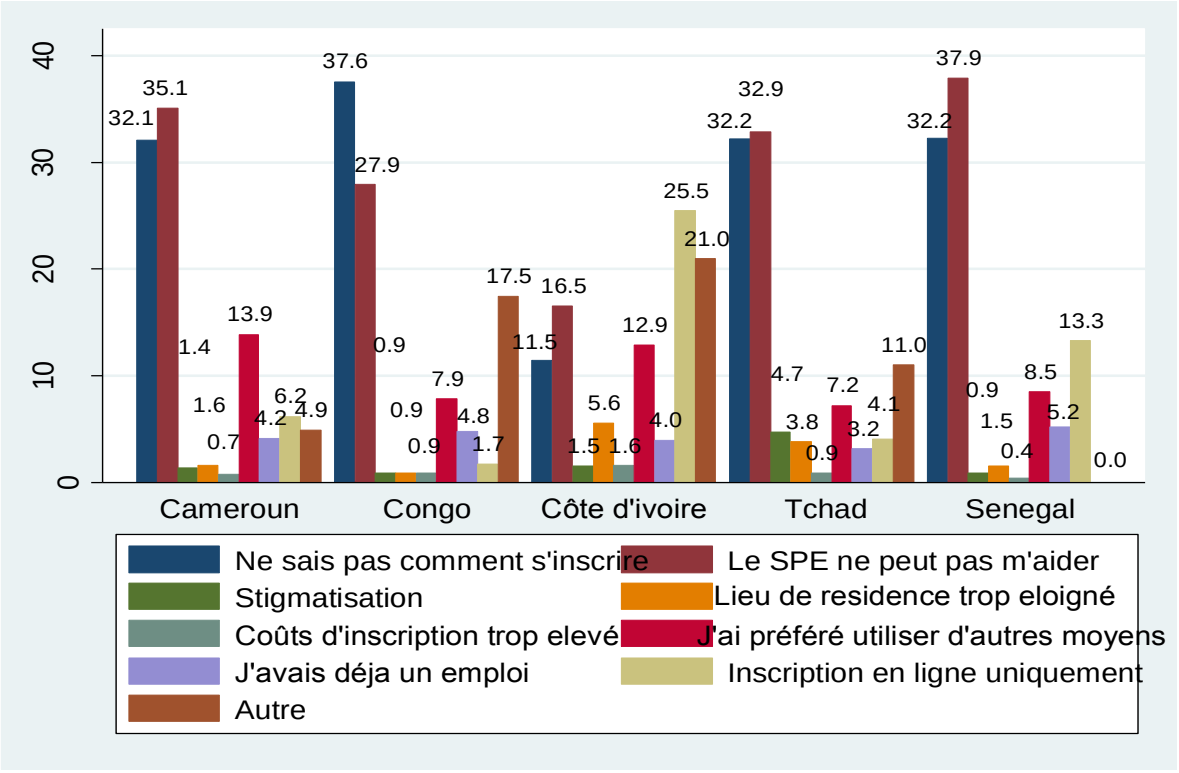
This trend of non-take-up with the public employment service had already been observed in previous studies on the Cameroonian labour market. Indeed, we note that nearly 94% of job seekers do not register in a job promotion structure. Moreover, when they are asked the question: "Why you are not registered with such a structure?" 57% reply that they do not know of such structures, 20% say that these structures cannot help them.

**Graph 3:** Reasons for non-take-up




**Source:** SEPI (2018)

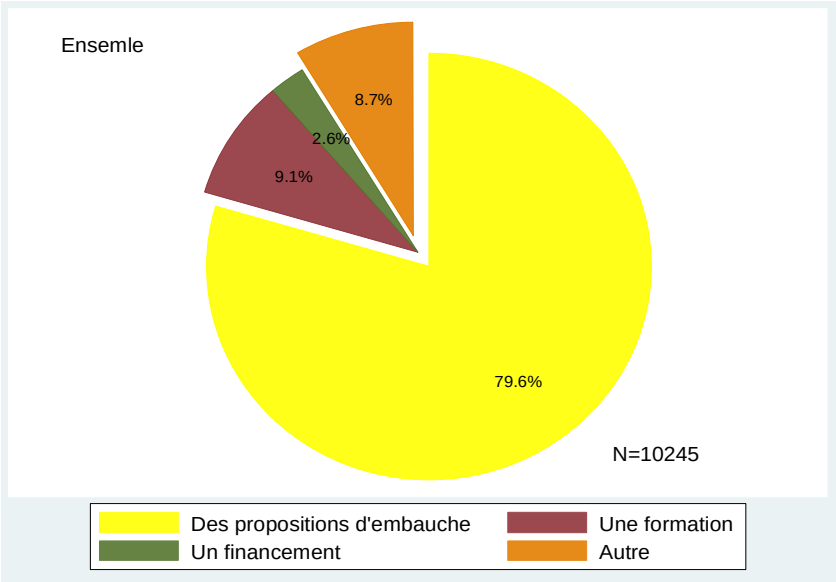
**Graph 4:** Reasons for non-take-up by country




**Source:** SEPI (2018)

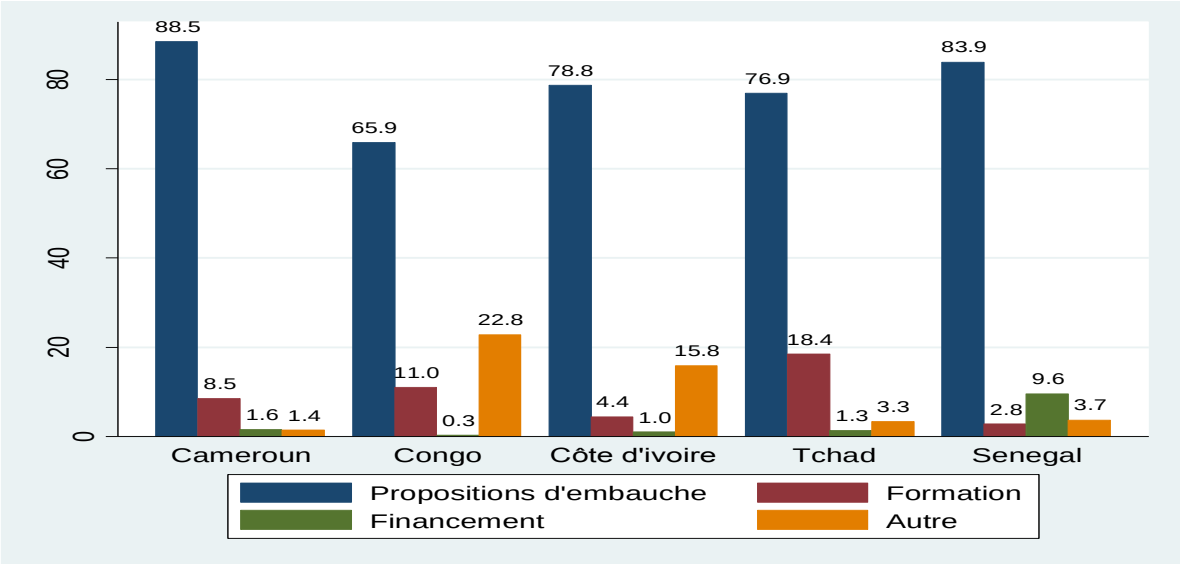
Almost all of the individuals in our sample (79.6%) request a job offer (Graph 5). These figures suggest a form of downgrading. In fact, most individuals would like a salaried job, but in practice, the majority are inserted as self-employed. This also reflects a lack of knowledge of the job seeker's objective potential. The proportion of registered individuals applying for a job offer varies between 89% and 65% depending on the country. The other services of the PES are requested by more than 1 person in 5 in Congo Brazzaville.

**Graph 5:** Expectations of the PES




**Source:** SEPI (2018)

**Graph 6:** Expectations of the PES by country




**Source:** SEPI (2018)

**-Enrolment**

The process of participation in public programmes ends with effective participation in a specific programme. On this point, the PES offers several forms of support, generally grouped in three forms: job offers, training and financing of activities.

**Table 2:** PES Enrolment

| | **Whole population** | **Cameroon** | **Congo Brazzaville** | **Côte d'ivoire** | **Chad** | **Senegal** |
|---|---|---|---|---|---|---|
| Job offers | 401 | 99 | 196 | 99 | 7 | - |
| Job assistance | 1137 | 674 | 203 | 210 | 50 | - |
| Training | 3563 | 542 | 197 | 953 | 985 | 886 |
| **Total** | 5101 | 1315 | 596 | 1262 | 1042 | 886 |

**Source:** SEPI (2018)

### 3.3 Econometric strategy

This paper uses a bivariate probit model to simultaneously analyse the determinants of participation in a PES and participation in other public employment programs in the labour markets of five sub-Saharan African countries. The specification of the bivariate probit model is as follows (Cameron and Trivedi, 2005):

$$Y_1^* = X_1^{'}\beta_1 + \varepsilon_1 \quad [1]$$

$$Y_2^* = X_2^{'}\beta_2 + \varepsilon_2 \quad [2]$$

$Y_1^*$ and $Y_2^*$ are unobserved latent variables corresponding to the observability criteria of the following two binary outcomes :

$$Y_1 = \begin{cases} 1 \text{ if } Y_1^* > 0 \\ 0, \text{ sinon} \end{cases} \quad [3]$$

$$Y_2 = \begin{cases} 1 \text{ if } Y_2^* > 0 \\ 0, \text{ sinon} \end{cases} \quad [4]$$

Where $Y_1$ and $Y_2$ are indicator variables, $Y_1$ takes the value 1 if the individual participates in the EPS and 0 otherwise, $Y_2$ is equal to 1 if he or she participates in at least one other public program and 0 otherwise. $X_1$ and $X_2$ are vectors of explanatory variables, $\varepsilon_1$ and $\varepsilon_2$ are error terms assumed to have a bivariate normal distribution with,

$$E\left[\varepsilon_1 / X_1, X_2\right] = E\left[\varepsilon_2 / X_1, X_2\right] = 0 \quad [5]$$

$$Var\left[\varepsilon_1 / X_1, X_2\right] = Var\left[\varepsilon_2 / X_1, X_2\right] = 1 \quad [6]$$

$Cov[\varepsilon_1, \varepsilon_2 / X_1, X_2] = \rho$ with $\rho$ the correlation coefficient between the two equations.

In the bivariate model with $\rho \neq 0$, there are four combinations of observed results. Using the relationships of equations [3] and [4], the joint probabilities are calculated for a given value of the observables (X). For example, the joint probability that $Y_1$ and $Y_2$ both take the value 1 is given by (omitting the observation index),

$$P_{11} = \Pr(Y_1 = 1, Y_2 = 1 / X_1, X_2) \qquad [7]$$

$$= \Pr(-\varepsilon_1 < X_1'\beta_1, -\varepsilon_2 < X_2'\beta_2)$$

$$= \int_{-\infty}^{X_1'\beta_1} \int_{-\infty}^{X_2'\beta_2} \phi(Z_1, Z_2; \rho) dz_1 dz_2$$

$$= \Phi(X_1'\beta_1, X_2'\beta_2; \rho)$$

where $\phi(.)$ and $\Phi(.)$ are the bivariate functions of standard normal density and cumulative density for $z_1 (= X_1'\beta_1)$ et $z_2 (= X_2'\beta_2)$. In general, the joint probabilities that enter the likelihood function are given as follows (for i, j=1, 0):

$$P_{ij} = \Pr(Y_1 = i, Y_2 = j / X_1, X_2) \qquad [8]$$

$$= \Phi(pX_1'\beta_1, qX_2'\beta_2; pq\rho)$$

Où $p = \begin{cases} 1 \text{ if } Y_1 = 1 \\ -1 \text{ if } Y_1 = 0 \end{cases}$

Et $q = \begin{cases} 1 \text{ if } Y_2 = 1 \\ -1 \text{ if } Y_2 = 0 \end{cases}$

The log-likelihood for bivariate probit is then given as follows,

$$l(\theta) = \sum_{Y_1=1, Y_2=0} \ln \Phi_{10}(\theta) + \sum_{Y_1=1, Y_2=1} \ln \Phi_{11}(\theta) + \sum_{Y_1=0, Y_2=1} \ln \Phi_{01}(\theta) + \sum_{Y_1=0, Y_2=0} \ln \Phi_{00}(\theta) \qquad [9]$$

Where $\Phi_{ij}(.)$, is the joint probability that $Y_1$ takes a value of i and $Y_2$ takes a value of j, for i, j= 0,1 and $\theta$ is the parameter vector composed of $\beta_1$, $\beta_2$ and $\rho$. Maximum likelihood estimates are obtained by simultaneously setting the derivative of the log likelihood function for the parameters of interest to zero. The bivariate probit model is used to calculate the marginal effects necessary to arrive at the relative magnitude of the specific effects. For example, taking $Y_1$ and $Y_2$ as binary outcomes for the use of PES and participation in other employment promotion programs, the impact of a unit increase in a continuous variable $X_k$ on

the probability that an individual will combine PES and other employment promotion programs is given by :

$$\frac{\partial P_{11}}{\partial X_k} = \frac{\partial(\Phi_{Y_1^1}\Phi_{Y_2^1/Y_1^1})}{\partial X_k} = \Phi_{Y_2^1/Y_1^1}\phi_{Y_1}\beta_1^{X_k} + \Phi_{Y_1^1}\phi_{Y_2^1/Y_1^1}\beta_2^{X_k} \quad [10]$$

Where $\Phi_{Y_1^1}$, $\Phi_{Y_2^1}$ et $\Phi_{Y_2^1/Y_1^1}$ are the probability of participation in PES, other employment promotion programs, and the combination of PES and other employment promotion programs respectively (Christofides and al. 1997). In this paper, the marginal effects on the joint probabilities are calculated at the mean value of the continuous explanatory variables. The same vector of variables is included in both equations, so the system is simply identified. The treatment effect of PES participation on the probability of participation in other labour market programs for individual X can be estimated as the difference between the predicted conditional probabilities of participation in other labour market programs with and without PES participation (Greene, 2003):

$$ET_1 = \hat{P}(Y_2 = 1/Y_1 = 1; X) - \hat{P}(Y_2 = 1/Y_1 = 0; X) \quad [11]$$

The estimation of this model is done by maximum likelihood simulated according to the GHK (Geweke-Hajivassiliou-Keane) method.

## 4. Empirical Results

### 4.1. The Determinants of Awareness of the Programs

The issue of information dissemination remains crucial because differential access to information on the existence of a program can reduce the number of people who are aware of the program and subsequently hinder participation in the program. For the estimated model, Wald's test suggests that the estimated specifications are globally significant at 1%. In addition, the overall significance test on the variance-covariance matrix associated with the bivariate estimation argues in favour of adopting this specification. Indeed, the statistic of the likelihood ratio test suggests that at the 1% there is at least one correlation coefficient except those of the main diagonal, which is not null. The estimated correlation coefficient between the error terms of the two equations of the bivariate probit model is significant at the 1% and indicates that the correlation between awareness of PES and awareness of at least one other public programs remains through the unobservable characteristics of the public employment assistance schemes and jobseekers after the joint estimates of the different public employment programmes studied are made. This result also makes it possible to validate the link between awareness of the PES and awareness of at least one other public programs and thus reinforces the choice of the bivariate probit model. The high and positive value of the correlation coefficient (0.596)

indicates that being aware of the existence of PES could raise the interest of jobseekers in other public programs and vice versa.

The results of the bivariate probit recorded in Table 3 suggest that personal characteristics, socio-economic factors and labour market history determine the awareness of publics programs. More specifically, having a father who works has a negative and significant impact on the probability of being informed of the existence of at least one other publics programs. This result is similar to that of Finn and Goodship (2014) who find that people from rich families are not aware of the existence of the public employment services. While having an executive father increases this probability for both awareness indicators.

In line with standard models of human capital (Becker, 1964), education increases the probability of being informed about the existence of PES and other public programs. This result corroborates that of the work showing that being in higher education facilitates the understanding of eligibility criteria. Indeed, Weber (2008) argues that people with high levels of education have easy access to information about the existence of a social benefit. For example, those with higher levels of education have a better knowledge of the possibilities of support and they are more likely to take the initiative in finding support that will be useful to them in the labour market.

Men are more likely to be aware of PES compared to women. This may be explained by the fact that man is usually the head of household and therefore has to provide for the family. It is therefore more applied in the job search process. The number of children in the household reduces the chances of experiencing PES but this effect is not significant.

**Table 3:** Bivariate probit estimates of the determinants of Awareness of the Programs

| VARIABLES | (1) PES | (2) Others Publics Programs |
|---|---|---|
| age | 0.274*** | 0.189*** |
| | (0.0189) | (0.0199) |
| $(Age/10)^2$ | -0.351*** | -0.232*** |
| | (0.0302) | (0.0318) |
| Gender (Male==1) | 0.113*** | 0.237*** |
| | (0.0305) | (0.0249) |
| Education | 0.0666*** | 0.0562*** |
| | (0.00535) | (0.00501) |
| Currently married | -0.0451 | -0.0515 |
| | (0.0425) | (0.0327) |
| Health (Good==1) | -0.136 | -0.121 |
| | (0.113) | (0.0892) |
| Number of children in the household | -0.0137 | -0.00539 |
| | (0.0148) | (0.0102) |
| Level of French (Master==1) | 0.182** | 0.232*** |
| | (0.0821) | (0.0834) |
| Level of English (Fluent==1) | 0.222*** | 0.190*** |
| | (0.0308) | (0.0257) |
| Financial situation (Good==1) | -0.0360 | -0.0459* |
| | (0.0290) | (0.0239) |
| Head of household | 0.156*** | 0.0210 |
| | (0.0345) | (0.0261) |
| Regional unemployment rate | -1.111** | 0.171 |
| | (0.497) | (0.440) |
| Father has a job | 0.00404 | -0.0991*** |
| | (0.0346) | (0.0283) |
| Father is an executive | 0.0861*** | 0.0935*** |
| | (0.0334) | (0.0265) |
| Political party | 0.0221 | 0.146*** |
| | (0.0508) | (0.0395) |
| Currently unemployed | 0.204*** | 0.0885*** |
| | (0.0181) | (0.0131) |
| Currently out of the labour force | 0.116*** | 0.0689*** |
| | (0.0220) | (0.0162) |
| Congo Brazzaville | -0.0285 | 1.014*** |
| | (0.0543) | (0.0439) |
| Ivory Coast | -0.377*** | 0.998*** |
| | (0.0462) | (0.0347) |
| Chad | -0.272*** | -0.0788** |
| | (0.0490) | (0.0352) |
| Senegal | -0.170*** | -0.437*** |
| | (0.0551) | (0.0447) |
| Constant | -4.712*** | -5.192*** |
| | (0.371) | (0.364) |
| Number of observations | 14688 | |
| Wald's Statistics | 4200,44*** | |
| Correlation coefficient | 0,596*** (0,0165) | |
| LR test of correlation coefficients of Bivariate probit | 718,308*** | |

**Source:** Authors' calculations using SEPI (2018) Study data.

**Notes**: The reference's modalities in the bivariate probit are: Female, not married, bad health, not fluent in French, not fluent in English, bad financial situation, not head of household, father is not employed, father is not an executive, does not belong to a political party and currently employed. Values in parentheses are robust standard deviations, *** p<0.01 significant at 1%, ** p<0.05 significant at 5% and * p<0.1 significant at 10%.

Previous labour force status (currently unemployed and currently out of the labour force) has a positive influence on awareness of PES. In fact, the variables currently unemployed and currently out of the labour force are positive and significant. This result is confirmed by many studies carried out in recent years (Heckman and Smith, 1999, 2004; Weber, 2008; Kluve and al. 2009) which all agree that it is the dynamics of unemployment that determine participation in public programmes. Indeed, Heckman and Smith (1999) indicate that individuals who enter the labour force and become unemployed have no change in earnings, but are more likely to participate in a public program. This is because the objective of these programs is to help individuals find job quickly. The authors conclude that it is therefore the dynamics of unemployment that lead to participation in a program.

Our results are consistent with previous studies. In fact, mastery of the languages in which the program is formulated, in this case English and French, increases the probability of being familiar with PES. These results are consistent with those of Heckman and Smith (2004) and Finn and Goodship (2014).

Table 4 presents some probabilities and treatment effects on indicators of awareness of PES obtained through population averages. Concerning the marginal probability, it indicates that after controlling for all characteristics, the average probability predicts that an active person knows the PES is 0.865 and is 0.483 when awareness of at least one other publics programs is taken into account. Moreover, the propensity to know at least one other publics programs tends to be higher in Côte d'ivoire and Congo Brazzaville respectively.

Table 4 also provides the joint probabilities between the different indicators of information. Indeed, the results of the estimates indicate that the average predicted probability of simultaneously knowing the PES and at least one other publics programs is equal to 46.5%. In other words, there is a little less than five chances out of ten of having an asset that knows both a PES and at least one other publics programs at the same time. These probabilities are higher in Côte d'Ivoire and Congo Brazzaville respectively. Thus, in our sample, it will be more likely to encounter individuals who know several publics programs. Lessons from conditional probabilities can be drawn from Table 4. An analysis of this table leads to the conclusion that the probability of knowing at least one other publics programs knowing the PES is 0.955.

Table 4 also highlights some treatment effects that indicate the impact of awareness of the PES on other publics programs. Thus, in our population, knowing the PES increases the probability of knowing at least one other publics programs by 80.3%. For Senegal and Cameroon the positive influence of PES is 96% and 94.9% respectively. Thus, awareness of PES improves knowledge of other publics programs.

**Table 4:** Some Treatment Probabilities and Effects

| | Whole population | Cameroon | Congo Brazzaville | Côte d'ivoire | Chad | Senegal |
|---|---|---|---|---|---|---|
| **Marginal probabilities** | | | | | | |
| P (A=1) | 0.865 (0.110) | 0.936 (0.064) | 0.758 (0.259) | 0.879 (0.037) | 0.864 (0.133) | 0.843 (0.135) |
| P (B=1) | 0.483 (0.137) | 0.416 (0.136) | 0.607 (0.271) | 0.784 (0.041) | 0.365 (0.153) | 0.227 (0.101) |
| **Joints Probabilities** | | | | | | |
| P (A=1, B=1) | 0.465 (0.142) | 0.410 (0.138) | 0.595 (0.276) | 0.744 (0.045) | 0.354 (0.155) | 0.215 (0.100) |
| P (A=1, B=0) | 0.401 (0.088) | 0.526 (0.106) | 0.162 (0.081) | 0.134 (0.027) | 0.510 (0.109) | 0.628 (0.094) |
| P (A=0, B=1) | 0.017 (0.014) | 0.005 (0.006) | 0.011 (0.015) | 0.039 (0.017) | 0.011 (0.012) | 0.012 (0.012) |
| P (A=0, B=0) | 0.116 (0.100) | 0.057 (0.059) | 0.229 (0.252) | 0.081 (0.024) | 0.124 (0.125) | 0.143 (0.130) |
| **Conditional probabilities** | | | | | | |
| P (A=1 \|B=1) | 0.528 (0.120) | 0.433 (0.128) | 0.733 (0.175) | 0.846 (0.032) | 0.397 (0.143) | 0.246 (0.098) |
| P (B=1 \|A=1) | 0.955 (0.049) | 0.982 (0.023) | 0.960 (0.062) | 0.949 (0.021) | 0.958 (0.060) | 0.927 (0.078) |
| P (A=1\|B=0) | 0.772 (0.157) | 0.901 (0.074) | 0.615 (0.192) | 0.679 (0.104) | 0.813 (0.119) | 0.805 (0.122) |
| P (B=1\|A=0) | 0.155 (0.162) | 0.042 (0.014) | 0.259 (0.078) | 0.403 (0.063) | 0.052 (0.020) | 0.021 (0.009) |
| **Treatment effects** | | | | | | |
| P(A=1\|B=1)– P(A=1\|B=0) | -0.243 (0.002)* | -0.463 (0.002)* | 0.081 (0.005)* | 0.154 (0.002)* | -0.406 (0.002)* | -0.541 (0.002)* |
| P(B=1\|A=1)– P(B=1\|A=0) | 0.803 (0.001)* | 0.949 (0.001)* | 0.631 (0.002)* | 0.531 (0.001)* | 0.924 (0.001)* | 0.960 (0.001)* |

**Source:** Authors' calculations using SEPI (2018) Study data.
**Note:** A=Awareness of PES (FNE in Cameroon, ONEMO in Congo Brazzaville, AGEPE in Côte d'Ivoire, Direction de l'emploi in Senegal and ONAPE in Chad), B=Awareness of at least one others publics programs. [*] indicates significance at [1%]. The values in brackets are standard deviations.

### 4.2 The Determinants of Enrolment in a program

For the estimated model, Wald's test suggests that the estimated specifications are globally significant at the 1%. Moreover, the overall significance test on the variance-covariance matrix associated with the bivariate estimation argues in favour of adopting this specification. Indeed, the statistic of the likelihood ratio test suggests that at the 1% there is at least one correlation coefficient except those of the main diagonal, which is not null. The estimated correlation coefficient between the error terms of the two equations of the bivariate probit model is significant at the 1% and indicates that the correlation between enrolment in the PES and enrolment in at least one other public program remains through the unobservable characteristics of the public employment assistance schemes and job seekers after the joint estimates of the different public employment programmes studied are made. This result also confirms the link between enrolment in the PES and enrolment in at least one other publics programs and thus reinforces the choice of the bivariate probit model. The high and positive value of the correlation coefficient (0.284) indicates that the transition to the PES could lead jobseekers to

prospect for other publics programs and vice versa. This result was expected and can be explained by the arsenal deployed by the PES during the application process in their structure. This strategy put in place by the PES means that individuals do not settle for the minimum and go on the attack of other existing publics programs depending on the country.

The bivariate probit results in Table 5 suggest that personal characteristics, socio-economic factors and labour market history influence enrolment in PES. Specifically, age has a positive impact on PES enrolment. However, this effect of age fades over time because the variable 'age squared' is negative and significant. The number of years of schooling increases the probability of enrolling in the PES and in at least one other publics programs. This result is sustained in the labour market. Indeed, in a study on Morocco, Bunel and Lenoir (2004) reveal that university leavers, faced with high unemployment, first mobilize the social network before resorting to the external market. The first strategy on the labour market is often the mobilization of the social network. Individuals generally resort to other job search methods such as institutional facilitators when the social network has failed. Moreover, Whaba and Zenou (2004) find that the least educated individuals are those who, on average, use social capital in job search.

Heads of households have a greater propensity to enrol in PES. The regional unemployment rate reduces the probability of enrolling in PES and another publics programs. This may be explained by the discouragement effect that often invades job seekers when labour market conditions become tie. They expect that the earnings from enrolment in a PES are lower than the costs (monetary or non-monetary) associated with such enrolment.

Being the son of a working father significantly reduces the probability of enrolling in the PES. This could be explained by the fact that parents in the labour market have a denser knowledge network, so they have access to a greater mass of information on job vacancies, and their offspring can benefit from this stock of information and thus become less dependent on institutional support in their job search process. Paradoxically, having an executive father increases the probability of enrolling in PES. When an individual remains unemployed for a long time, it is likely that he or she becomes discouraged and stops looking for a job because application in the PES does not provide any immediate benefits like unemployment benefits in theses African countries.

**Table 5:** Bivariate probit estimates of the determinants of enrolment in the Programs

| VARIABLES | (1) PES | (2) Others Publics Programs |
|---|---|---|
| age | 0.283*** | 0.095*** |
| | (0.028) | (0.034) |
| $(Age/10)^2$ | -0.377*** | -0.129** |
| | (0.046) | (0.052) |
| Gender (Male==1) | -0.157*** | 0.217*** |
| | (0.026) | (0.042) |
| Education | 0.053*** | 0.032*** |
| | (0.005) | (0.010) |
| Currently married | 0.028 | 0.004 |
| | (0.036) | (0.052) |
| Health (Good==1) | 0.003 | 0.211 |
| | (0.091) | (0.152) |
| Number of children in the household | -0.013 | -0.009 |
| | (0.013) | (0.023) |
| Level of French (Master==1) | 0.108 | 0.272 |
| | (0.082) | (0.205) |
| Level of English (Fluent==1) | 0.200*** | 0.081* |
| | (0.026) | (0.043) |
| Financial situation (Good==1) | -0.108*** | -0.002 |
| | (0.025) | (0.039) |
| Head of household | 0.206*** | 0.044 |
| | (0.028) | (0.040) |
| Regional unemployment rate | -5.539*** | -2.598*** |
| | (0.566) | (0.506) |
| Father has a job | -0.073** | -0.023 |
| | (0.029) | (0.046) |
| Father is an executive | 0.071*** | 0.084** |
| | (0.027) | (0.041) |
| Political party | -0.062 | 0.029 |
| | (0.041) | (0.066) |
| Currently unemployed | -0.425*** | -0.030 |
| | (0.017) | (0.022) |
| Currently out of the labour force | -0.288*** | -0.028 |
| | (0.019) | (0.027) |
| Congo Brazzaville | 0.304*** | -0.909*** |
| | (0.045) | (0.105) |
| Ivory Coast | 0.189*** | 0.263*** |
| | (0.037) | (0.044) |
| Chad | 0.341*** | -0.301*** |
| | (0.038) | (0.054) |
| Senegal | 0.066 | -1.103*** |
| | (0.048) | (0.115) |
| Constant | -3.160*** | -3.328*** |
| | (0.469) | (0.622) |
| Number of observations | 14688 | |
| Wald's Statistics | 2,459.69 *** | |
| Correlation coefficient | 0.284*** (0.025) | |
| LR test of correlation coefficients of Bivariate probit | 109.719 *** | |

**Source:** Authors' calculations using SEPI (2018) Study data.

**Notes**: The reference's modalities in the bivariate probit are: Female, not married, bad health, not fluent in French, not fluent in English, bad financial situation, not head of household, father is not employed, father is not an executive, does not belong to a political party and currently employed. Values in parentheses are robust standard deviations, *** p<0.01 significant at 1%, ** p<0.05 significant at 5% and * p<0.1 significant at 10%.

Table 6 presents some probabilities and treatment effects on PES enrolment obtained through population averages. In terms of marginal probability, the results indicate that after controlling for all characteristics, the mean probability predicts that an active person will enrol in the PES is 0.686 and is 0.058 if they enrol in at least one other public program. Moreover, the propensity to enrol in at least one other public program tends to be higher in Côte d'Ivoire.

Table 6 also records the joint probabilities between the different indicators of PES enrolment. Indeed, the results of the estimates indicate that the average predicted probability of simultaneously enrolling in the PES and at least one other public program is equal to 5%. These probabilities are higher in Côte d'Ivoire and Cameroon respectively. Thus, in our sample, it will be less frequent to encounter individuals who are enrolled in several public program.

Lessons from conditional probabilities can be drawn from Table 6. An analysis of this table leads to the conclusion that the probability of enrolling in at least one other public program knowing that the individual is enrolled in the PES is 0.855.

Table 6 also highlights some treatment effects that indicate the impact of enrolment in the PES on other public program. Thus, in our population, enrolling in the PES increases the probability of enrolling in at least one other public program by 82.8%. For Senegal and Chad, the positive influence of enrolment in the PES is 89.3% and 86.9% respectively. Enrolment in the PES thus increases the chances of enrolling in other public program.

**Table 6:** Some Treatment Probabilities and Effects

| | **Whole population** | **Cameroon** | **Congo Brazzaville** | **Côte d'ivoire** | **Chad** | **Senegal** |
|---|---|---|---|---|---|---|
| **Marginal probabilities** | | | | | | |
| P (A=1) | 0.686 (0.191) | 0.662 (0.201) | 0.659 (0.242) | 0.696 (0.170) | 0.728 (0.174) | 0.675 (0.169) |
| P (B=1) | 0.058 (0.053) | 0.080 (0.027) | 0.007 (0.005) | 0.127 (0.044) | 0.039 (0.016) | 0.004 (0.002) |
| **Joint Probabilities** | | | | | | |
| P (A=1, B=1) | 0.050 (0.048) | 0 .067 (0.030) | 0.007 (0.005) | 0.108 (0.048) | 0.036 (0.016) | 0.004 (0.002) |
| P (A=1, B=0) | 0.636 (0.180) | 0.594 (0.179) | 0.652 (0.238) | 0.587 (0.138) | 0.692 (0.162) | 0.671 (0.167) |
| P (A=0, B=1) | 0.008 (0.010) | 0.012 (0.009) | 0.001 (0.001) | 0.018 (0.012) | 0.003 (0.002) | 0.001 (0.001) |
| P (A=0, B=0) | 0.304 (0.187) | 0.325 (0.194) | 0.339 (0.242) | 0.284 (0.159) | 0.267 (0.172) | 0.323 (0.168) |
| **Conditional probabilities** | | | | | | |
| P (A=1 \|B=1) | 0.071 (0.062) | 0.101 (0.028) | 0.009 (0.005) | 0.153 (0.042) | 0 .048 (0.016) | 0.005 (0.002) |
| P (B=1 \|A=1) | 0.855 (0.138) | 0.815 (0.160) | 0.859 (0.164) | 0.832 (0.126) | 0.883 (0.113) | 0.894 (0.107) |
| P (A=1\|B=0) | 0.678 (0.192) | 0.649 (0.203) | 0.658 (0.242) | 0.678 (0.173) | 0.723 (0.175) | 0.674 (0.169) |
| P (B=1\|A=0) | 0.026 (0.026) | 0.036 (0.013) | 0.001 (0.001) | 0.061 (0.018) | 0.013 (0.005) | 0.001 (0.001) |
| **Treatment effects** | | | | | | |
| P(A=1\|B=1)– P(A=1\|B=0) | -0.606 (0.001) | -0.548 (0.003) | -0.648 (0.005) | -0.525 (0.003) | -0.675 (0.003) | -0.669 (0.003) |

| | | | | | | |
|---|---|---|---|---|---|---|
| P(B=1\|A=1)– P(B=1\|A=0) | 0.828 (0.001) | 0.778 (0.002) | 0.857 (0.003) | 0.770 (0.002) | 0.869 (0.002) | 0.893 (0 .002) |

**Source:** Authors' calculations using SEPI (2018) Study data.
**Note:** A=Enrolment in PES (FNE in Cameroon, ONEMO in Congo Brazzaville, AGEPE in Côte d'Ivoire, Direction de l'emploi in Senegal and ONAPE in Chad), B=Enrolment at least one others publics programs. [*] indicates significance at [1%]. The values in brackets are standard deviations.

## 5. Conclusion

This study uses the Survey on Improving Employment Policies (SEPI), which is the only database in sub-Saharan Africa that measures participation in PES among both the employed and unemployed, to examine the determinants of PES participation. Theoretical arguments and empirical evidence, which indicate that personal characteristics, socio-economic factors and programme specificities influence participation in PES are taken into account. The study is based on the conceptual framework for analysing participation in a public program developed by Heckman and Smith (2004). The authors construct a participation process around five stages: eligibility, awareness, application, acceptance, and enrolment. The study uses this architecture to highlight job search behaviour, taking into account the fact that individuals often combine multiple search channels. This mix of job search methods led to a bivariate probit specification. The results of the econometric analyses reveal that personal characteristics, socio-economic factors and labour market conditions explain participation in PES. In addition, participation in the PES increases the likelihood of participation in other public program.

## Appendix

**Table A.1:** Description of variables used in the estimations

| Variables | Definition |
|---|---|
| Sex | Indicator variable which takes the value 1 if the individual is a man and 0 otherwise |
| Age | Continuous variable indicating the age of the individual |
| Education | Continuous variable that captures the number of years of schooling reached |
| Health | Indicator variable that takes the value 1 when the individual is in good health before enrolment in the PES and 0 otherwise. |
| Currently married | Variable indicating marital status. It takes the value 1 if the individual lives as a couple and 0 otherwise. |
| Head of household | Dummy variable that takes the value 1 if the individual is the head of the household and 0 otherwise. |
| Number of children in the household | A continuous variable that indicates the number of children in the individual's household prior to enrolment in the CPS. |
| French | Indicator variable indicating knowledge of the French language. It takes the value 1 if the individual can read, write and speak French and 0 otherwise. |
| English | An indicator variable that indicates knowledge of the English language. It takes the value 1 if the individual can read, write and speak English and 0 otherwise. |
| Unemployment rate in the region of residence | Continuous variable that specifies the unemployment rate in the region where the individual resides. |
| Father's employment status | This variable indicates whether your father was working when you were 15 years old. It takes a value of 1 if the individual states that his father was employed when he was 15 years old. |
| Father's socio-professional category | A dummy variable that takes on a value of 1 if the individual states that his father was an executive when he was 15 years old. |
| Migration status | Indicator variable that takes the value 1 when the individual has changed department of residence and 0 otherwise. |
| Financial situation of the individual | Indicator variable that takes on the value 1 when the individual reports that his or her financial situation was satisfactory prior to enrolment in the PES. |
| Political affiliation | Indicator variable that takes the value 1 when the individual is a member of a political party. |
| Currently employed | Continuous variable that captures the number of times the individual was actively employed prior to enrolment in the PES. |
| Currently unemployed | Continuous variable that captures the number of times the individual was looking for work prior to enrolment in the PES. |
| Currently out of the labour force | Continuous variable that captures the number of times the individual was out of the labour force prior to enrolment in the PES. |

**Source:** Authors using SEPI (2018) Study data.

**Table A.2:** Bivariate Probit of Participation in PES and Other Employment Programs (Marginal Effects)

| | Awareness | | | Enrolment | | | | |
|---|---|---|---|---|---|---|---|---|
| | **(5) SPE=1, Autres=1** | **(6) Autres=1, SPE=0** | **(7) SPE=1, Autres=0** | **(8) SPE=0, Autres=0** | **(9) SPE=1, Autres=1** | **(10) Autres=1, SPE=0** | **(11) SPE=1, Autres=0** | **(12) SPE=0, Autres=0** |
| age | 0.065 | -0.006 | -0.015 | -0.044 | 0.009 | -0.002 | 0.075 | 0.075 |
| | (10.22)** | (9.38)** | (3.34)** | (13.50)** | (3.42)** | (3.55)** | (9.71)** | (9.71)** |
| $(Age/10)^2$ | -0.082 | 0.009 | 0.016 | 0.057 | -0.011 | 0.003 | -0.100 | -0.100 |
| | (7.93)** | (8.30)** | (2.28)* | (10.78)** | (2.75)** | (3.19)** | (7.90)** | (7.90)** |
| Gender (Male==1) | 0.071 | 0.003 | -0.054 | -0.019 | 0.017 | 0.006 | -0.064 | -0.064 |
| | (9.14)** | (2.18)* | (7.17)** | (4.18)** | (4.64)** | (6.55)** | (8.02)** | (8.02)** |
| Education | 0.021 | -0.001 | -0.007 | -0.013 | 0.003 | -0.000 | 0.013 | 0.013 |
| | (13.67)** | (6.43)** | (4.71)** | (15.35)** | (3.38)** | (1.04) | (8.54)** | (8.54)** |
| Currently married | -0.023 | 0.001 | 0.010 | 0.012 | -0.001 | -0.000 | 0.008 | 0.008 |
| | (2.20)* | (0.51) | (0.96) | (1.83) | (0.15) | (0.50) | (0.74) | (0.74) |
| Health (Good==1) | -0.043 | 0.001 | 0.021 | 0.021 | 0.015 | 0.003 | -0.013 | -0.013 |
| | (1.54) | (0.25) | (0.79) | (1.20) | (1.12) | (1.10) | (0.48) | (0.48) |
| Number of children in the household | -0.002 | 0.001 | -0.001 | 0.002 | -0.001 | 0.000 | -0.003 | -0.003 |
| | (0.69) | (0.81) | (0.22) | (1.12) | (0.39) | (0.00) | (0.69) | (0.69) |
| Level of French (Master==1) | 0.041 | -0.002 | -0.015 | -0.023 | 0.003 | -0.000 | 0.021 | 0.021 |
| | (1.72) | (0.77) | (0.74) | (1.98)* | (0.24) | (0.17) | (0.89) | (0.89) |
| Level of English (Fluent==1) | 0.066 | -0.004 | -0.024 | -0.038 | 0.010 | -0.001 | 0.050 | 0.050 |
| | (8.22)** | (2.88)** | (3.11)** | (7.96)** | (2.64)** | (0.95) | (6.17)** | (6.17)** |
| Financial situation (Good==1) | -0.019 | 0.001 | 0.007 | 0.011 | -0.001 | 0.001 | -0.030 | -0.030 |
| | (2.51)* | (0.92) | (0.95) | (2.47)* | (0.35) | (1.68) | (3.98)** | (3.98)** |
| Head of household | 0.000 | -0.004 | 0.015 | -0.011 | 0.006 | -0.002 | 0.055 | 0.055 |
| | (0.01) | (2.53)* | (1.85) | (2.17)* | (1.81) | (2.02)* | (6.58)** | (6.58)** |
| Regional unemployment rate | -0.063 | 0.075 | -0.258 | 0.246 | -0.290 | 0.019 | -1.403 | -1.403 |
| | (0.46) | (3.24)** | (1.87) | (3.30)** | (6.41)** | (1.77) | (8.51)** | (8.51)** |
| Father has a job | -0.029 | -0.003 | 0.030 | 0.002 | -0.003 | 0.001 | -0.021 | -0.021 |
| | (3.24)** | (2.03)* | (3.44)** | (0.43) | (0.66) | (0.61) | (2.27)* | (2.27)* |
| Father is an executive | 0.030 | -0.000 | -0.017 | -0.013 | 0.008 | 0.001 | 0.013 | 0.013 |
| | (3.66)** | (0.25) | (2.11)* | (2.57)* | (2.17)* | (0.81) | (1.61) | (1.61) |
| Political party | 0.047 | 0.003 | -0.040 | -0.010 | 0.003 | 0.001 | -0.021 | -0.021 |
| | (3.79)** | (1.29) | (3.20)** | (1.30) | (0.61) | (1.23) | (1.63) | (1.63) |
| Currently unemployed | -0.032 | 0.007 | -0.007 | 0.032 | -0.008 | 0.004 | -0.121 | -0.121 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | (6.43)** | (8.42)** | (1.62) | (11.82)** | (3.92)** | (8.73)** | (25.31)** | (25.31)** |
| Currently out of the labour force | -0.020 | 0.003 | -0.000 | 0.017 | -0.005 | 0.003 | -0.082 | -0.082 |
| | (3.62)** | (3.50)** | (0.06) | (5.37)** | (2.25)* | (5.43)** | (14.41)** | (14.41)** |
| Congo Brazzaville | 0.260 | 0.040 | -0.313 | 0.014 | -0.077 | -0.020 | 0.167 | 0.167 |
| | (19.50)** | (13.91)** | (24.51)** | (1.66) | (8.38)** | (8.67)** | (10.82)** | (10.82)** |
| Côte d'ivoire | 0.279 | 0.048 | -0.357 | 0.030 | 0.025 | 0.002 | 0.033 | 0.033 |
| | (27.13)** | (16.89)** | (35.94)** | (4.39)** | (6.36)** | (2.81)** | (3.09)** | (3.09)** |
| Tchad | -0.036 | 0.011 | -0.022 | 0.047 | -0.021 | -0.009 | 0.126 | 0.126 |
| | (3.33)** | (4.88)** | (1.88) | (6.36)** | (4.51)** | (7.70)** | (11.11)** | (11.11)** |
| Sénégal | -0.195 | 0.006 | 0.094 | 0.095 | -0.096 | -0.020 | 0.116 | 0.116 |
| | (14.32)** | (2.31)* | (6.51)** | (11.25)** | (9.13)** | (9.41)** | (6.66)** | (6.66)** |
| Mean Dép. Var | 0,462 | 0,021 | 0,398 | 0,118 | 0,051 | 0,008 | 0,635 | 0,305 |
| *N* | 14,688 | 14,688 | 14,688 | 14,688 | 14,688 | 14,688 | 14,688 | 14,688 |

**Source:** Authors' calculations based on EAPE data (2018).

**Notes:** The reference modalities in the bivariate probit are: wife, not in a couple, poor health, not fluent in French, not fluent in English, poor financial situation, not head of household, father is not employed, father is not an executive, does not belong to a political party, and number of episodes of activity. Values in parentheses are robust standard deviations, *** p<0.01 significant at 1%, ** p<0.05 significant at 5% and * p<0.1 significant at 10%.

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