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***Working Paper* GSYE-012**

AFRICAN ECONOMIC RESEARCH CONSORTIUM
CONSORTIUM POUR LA RECHERCHE ÉCONOMIQUE EN AFRIQUE

Bringing Rigour and Evidence to Economic Policy Making in Africa

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AERC Working Paper GSYE-012
African Economic Research Consortium, Nairobi
August 2022

THIS RESEARCH STUDY was supported by a grant from the African Economic Research Consortium. The findings, opinions and recommendations are those of the author, however, and do not necessarily reflect the views of the Consortium, its individual members or the AERC Secretariat.

Published by: The African Economic Research Consortium
P.O. Box 62882 - City Square
Nairobi 00200, Kenya

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List of abbreviations and acronyms

ADEPME	Bureau for the Promotion and Supervision of Small- and Medium-sized Enterprises (Agence de développement et d'Encadrement des Petites et Moyennes Entreprises)
AfDB	African Development Bank
AJEB	Bureau for the Employment of the Youth from the Suburbs (Agence pour l'Emploi des Jeunes des Banlieues)
ANAMA	National Bureau for the Support of Street Vendors (Agence Nationale d'Appui aux Marchands Ambulants)
ANEJ	National Youth Employment Bureau (Agence Nationale de l'Emploi des Jeunes)
ANIDA	National Bureau for Agricultural Integration and Development (Agence Nationale d'Insertion et de Développement Agricole)
ANPEJ	National Bureau for the Promotion of Youth Employment (Agence nationale Pour la Promotion de l'Emploi des Jeunes)
ANSD	National Bureau of Statistics and Demography (Agence Nationale de la Statistique et de la Démographie)
APDA	Bureau for the Promotion and Development of Crafts (Agence pour la Promotion et le Développement de l'Artisanat)
ATT	Average Treatment Effects on the Treated
CFEE	Certificate of Elementary Studies (Certificat d'Etudes Elémentaires)
CNEE	National State-Employer Agreement (Convention Nationale État-Employeurs)
CSS	Social Security Fund (Caisse de Sécurité Sociale)
DER	Rapid Entrepreneurship Devolution Office (Délégation de l'Entrepreneuriat Rapide)
EAPE	Survey on the Improvement of Employment Policies (Enquête sur l'Amélioration des Politiques d'Emploi)

ENES	National Survey on Employment in Senegal (Enquête Nationale sur l'Emploi au Sénégal)
ESPS	Poverty Monitoring Surveys (Enquête de Suivi de la Pauvreté)
ESAM	Senegalese Household Survey (Enquête Sénégalaise Auprès des Ménages)
FNPJ	National Youth Promotion Fund (Fonds National de Promotion des Jeunes)
FNR	National Pension Fund (Fonds National de Retraite)
GDP	Gross Domestic Product
IDRC	International Development Research Centre
ILO	International Labour Organization
IMR	Inverse Mills Ratio
IPRES	Institute for the Provident Insurance in Senegal (Institut de Prévoyance Assurance du Sénégal)
OLS	Ordinary Least Squares
PAP	Priority Action Plan (Plan d'Actions Prioritaires)
PESs	Public Employment Services
PSE	Plan for an Emerging Senegal (Plan Sénégal Émergent)
PSM	Propensity Score Matching
SME	Small and Medium-sized Enterprise
UN DESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme

Abstract

The issue of youth employment remains a major concern in Senegal. In recent years, the country has implemented several programmes aimed at combating unemployment and the precariousness of youth employment on the labour market. However, the results of those programmes are yet to be noticed. The aim of the present study is to assess the impact of employment support programmes on the integration of young men and young women into sectors of activity with a high capacity for quality job creation. The study has four specific objectives. The first objective is to identify the sectors of activity in which young people are employed most, based on data from national surveys on living conditions and employment in Senegal. The second is to analyse the quality of jobs held by the youth in the sectors where they are most employed, taking into consideration the level of visible and invisible underemployment and the degree of job security and stability. The third is to construct a composite index of job quality and to determine the sectors of activity most likely to provide quality jobs, by correcting for potential selection bias. The fourth is to use the propensity score matching method to assess the impact of employment support programmes on the youth's access to sectors of activity that offer quality jobs, based on survey data on the improvement of employment policies conducted in 2018 among 2,746 individuals in Senegal. The results of the descriptive data reveal that the bulk of jobs held by young people are concentrated in agriculture, trade, and manufacturing, respectively. The results also show that most young people employed in the three sectors work fewer hours than the norm, and would like to work more hours; they equally show that the same young people earn an insufficient income, which leads them to seek additional employment. They further indicate that less than half of the young people in those three sectors have regular employment qualifying them to benefit from the social security system. For their part, the results from econometric data reveal that young people in the trade sector are more likely to have high-quality jobs than those employed in the other sectors, suggesting that the trade sector offers young people better employment opportunities. Finally, the study finds that employment support programmes enable the young people that are beneficiaries to have access to high-quality jobs than their counterparts, the non-beneficiaries. These high-quality jobs are to be found mainly in the services and industrial sectors. The results of the present study attest to the precariousness of youth employment on the Senegalese labour market, hence the need to multiply employment support programmes in order to improve young people's employability in those sectors offering quality jobs.

Key words: *Employment; Employability; Young people; Labour market; Employment sectors.*

Acknowledgements

We wish to express deep appreciation to the African Economic Research Consortium (AERC) for all the support that facilitated the undertaking of this research. We are also eternally grateful to the INCLUDE Secretariat for technical and financial support, as well as the Economic Research Forum (ERF) and Overseas Development Institute (ODI) for intellectual support. We would like to as well acknowledge the resource persons who guided the whole process with in-depth comments and suggestions that shaped this study from inception to completion. The findings made and opinions expressed in this paper are exclusively those of the authors. They do not necessarily represent the views of AERC, or any other organization linked with this project. The authors are thus solely responsible for content and errors in this paper.

1. Introduction

The African countries that were hard hit by the economic recession of 1987 undertook a number of measures that led them to suspend recruiting people into the civil service, leaving the recruitment to the private sector, but one which was almost non-existent. This situation was aggravated by socio-political conflicts, inter-ethnic wars, and civil wars, which resulted in the destruction of the economic fabric. To compound matters, the demographic boom in Africa has seen its population grow fivefold between 1960 and 2020 (United Nations Development Programme [UNDP], 2019). However, the extent of disruption to the pace of job creation has exposed the weaknesses of a rent-based economic model, which led to a surge in unemployment and underemployment among young graduates (African Development Bank [AfDB], 2019). With unemployment rates having reached 40% in some African countries, getting young people into productive employment has become a major challenge (UNDP, 2015).

Sub-Saharan African countries are particularly confronted with many employment-related problems. The labour market in those countries is characterized by a high degree of precariousness, with 72% of the jobs available being vulnerable, and between 34% and 72% being available in the informal sector. On the other hand, while the youth unemployment rate is estimated at over 12%, a large proportion (38.1%) of the working youths lives in poverty (International Labour Organization [ILO], 2018). With a high population growth in those countries, the number of the working poor (about 250 million) is expected to increase by an average of four million per year (AfDB, 2019).

To address the challenge of youth employment, many African countries, including Senegal, have put in place active labour-market programmes aimed at integrating young people into wage employment and self-employment. That is why governments in those countries have transformed employment policies focusing on the recruitment of young people into the civil service and public enterprises into active employment policies that address unemployment in an economic way by tackling the causes of unemployment, and into passive employment policies that address unemployment in a social way by tackling the living conditions of the unemployed. Such a transformation, which integrates new aspects such as professional training, intermediation, and entrepreneurship support, has manifested itself in the creation of public services whose objective is to combat socioeconomic exclusion through the labour market.

Against this backdrop, Senegal has also taken several initiatives to address the issue of youth employment and employability. It has set up several agencies and funds, among which are the following: the National Youth Employment Bureau (*Agence Nationale de l'Emploi des Jeunes, ANEJ*), the Bureau for the Employment of the Youth from the Suburbs (*Agence Pour l'Emploi des Jeunes des Banlieues, AJEB*), the National Bureau for the Support of Street Vendors (Agence Nationale d'Appui aux Marchands Ambulants, ANAMA), and the National Youth Promotion Fund (*Fonds National de Promotion des Jeunes, FNPJ*). Although all these initiatives were important, they did not prove to be effective, which led the government to create a single structure called the National Bureau for the Promotion of Youth Employment (*Agence Nationale Pour la Promotion de l'Emploi des Jeunes, ANPEJ*),[1] mandated to coordinate all the youth employment actions. Since the creation of this structure in 2014, there has been a huge increase in the number of stakeholders offering programmes that have had a direct or indirect effect on the country's employment policy. Some of those stakeholders are the Bureau for the Promotion and Supervision of Small- and Medium-sized Enterprises (*Agence de Développement et d'Encadrement des Petites et Moyennes Entreprises, ADEPME*), the National Bureau for Agricultural Integration and Development (Agence Nationale d'Insertion et de Développement Agricole, ANIDA), the Rapid Entrepreneurship Devolution Office (*Délégation de l'Entrepreneuriat Rapide, DER*), and the Bureau for the Promotion and Development of Crafts (*Agence Pour la Promotion et le Développement de l'Artisanat, APDA*). In addition, there are the School-Enterprise Training Programme (*Programme Formation École-Entreprise*) and the National State-Employer Agreement (*Convention Nationale État-Employeurs*); the latter was first signed in 1987 and later renewed in 2000 and 2009.

In spite of all those initiatives, youth unemployment and job insecurity remain a major concern in Senegal, as shown by national statistics ([ILO], 2018; *PAP*, 2019–23; *ENES*, 2017). One in two Senegalese is under 18, and those aged under 20 represent more than half (63%) of the total population (UN DESA, 2019). Senegal recorded a real GDP growth of over 5% per year between 2014 and 2019, placing the country among the best performers in Africa (*Banque Mondiale* [World Bank], 2020). However, despite this rapid growth, job creation remains inadequate and the quality of the jobs available is still a worrying issue (see the 2019–23 *PAP*, p. 12). National statistics show that unemployment affects young people more than the other segments of the population. The unemployment rate is 19.5% for young people aged 20-24 and 17.5% for those aged 25-29, compared to 10% for adults (National Survey on Employment in Senegal [ENES], 2017) An analysis of the duration of unemployment according to education level has revealed that young people with a higher education level are the most affected by long-term unemployment. They are followed by those with primary school education (62%) and then by those with secondary school education (52%). The percentage of young people in long-term unemployment is lowest among uneducated young people (41%), which clearly shows that young people with formal education are more likely to remain unemployed (according to the National Employment Policy Document updated in 2017, and quoted by *BIT* [ILO], 2018). This seemingly counter-

intuitive situation could be explained by the fact that uneducated young people rarely decline job offers that come their way, since they have low salary expectations, unlike their educated counterparts who are more demanding. The latter may be led, in extreme cases, to choose to remain unemployed. This situation is also indicative of the formal labour market's limited absorptive capacity. For its part, the informal market is in fact more absorptive because of its greater readiness to recruit “its students” at the end of their apprenticeship.

Estimates show that more than 100,000 young people enter the Senegalese labour market each year, but the limited opportunities for formal and decent employment push most of them into the informal sector (2019–23 *PAP*). Indeed, almost all young people (90%) are employed in the informal economy where there is generally a high degree of job insecurity in terms of both working conditions and remuneration (*BIT* [ILO], 2018). The massive employment in the informal sector and the high youth unemployment rate can be partly explained by the mismatch between young people's training and needs of the market (ILO, 2018). It can also be explained by the lack of educational qualifications for most young people, as revealed by the 2013 General Population Census. This census found that, at the time, more than 1.5 million children aged between 7 and 16 had not received any formal education, either in the French or the Franco-Arabic system, while almost 47% of school-age children were not in school (*ANDS*, 2014). This suggests that most young people who entered the labour market at the time had never been to school, while those who had had the chance to do so had not acquired the basic skills needed before leaving school.

It follows from what precedes that the issue of youth employment in Senegal is far from being a simple or one-dimensional challenge. An implementation of well-targeted and suitable employment support programmes is required in order to improve young people's chances on the labour market. While the existing literature shows a positive effect of job-search support programmes on labour market indicators (Betcherman et al., 2007; Ehlert et al., 2012; Card et al., 2018; Groh et al., 2016; Ibarraran et al., 2014), very few studies have been done on the specific case of African countries in general and of Senegal in particular (Premand et al., 2016; Crépon & van Den Berg, 2016; Kane et al., 2020). While most of these theoretical and empirical studies have applied a meta-analysis on the available subsets of data and specific types of actions in some low-income countries, the issue of the effectiveness of job-search assistance programmes is still relevant. Moreover, those studies, important as they are, report divergent results on the effectiveness of such programmes (Attanasio et al., 2011; Chakravarty et al., 2019), and hardly do they focus on employment quality and on the job sectors that are likely to provide sustainable and gainful employment (Crépon & van Den Berg, 2016; Kane et al., 2021).

The aim of the present study is to assess the impact of employment support programmes on the integration of young men and women into sectors that provide quality jobs, notably the sectors of activity that offer better employment and income prospects for young people entering the labour market. The study has four specific objectives. The first is to identify, based on a descriptive analysis, the sectors of activity

that employ young people most. The second is to analyse the quality of jobs held by young people in the sectors where they are most employed, taking into consideration the level of visible and invisible underemployment and the degree of job security and stability. The third is to construct a composite index of job quality, and identify the sectors of activity most likely to provide quality jobs for young people on the labour market. The fourth is to assess the impact of the various employment support programmes implemented under the National State-Employer Agreement on young people's access to sectors of activity that provide quality jobs.

The National State-Employer Agreement (*Convention Nationale État-Employeurs, CNEE*) was chosen to serve as a reference for the present study because of the availability of data. Indeed, the survey on which the present study is based revolved around this Agreement, since this document is one of the few employment policy instruments that have been implemented for decades in Senegal: it was first signed in 1987 and was later renewed in 2000 and again in 2009. The Agreement is an effective partnership framework between the State and the employers, one which is aimed at ensuring active and regular promotion of employment for young people regardless of whether they live in urban or rural areas. The main target groups are young people with low education level (specifically those with just a general secondary school education and a technical and vocational education) and those with a higher education level.

The remainder of this paper is structured as follows. Section 2 is the problem statement on the issue of youth employment in Senegal; Section 3 is a review of the literature; Section 4 presents methodological elements and statistical results; Section 5 presents the econometric results; while Section 6 is the conclusion, at the end of which various avenues for further research are proposed.

2. Statement of the problem on the issue of youth employment in Senegal

In Senegal, young people represent a significant proportion of the population. Approximately one in two Senegalese is under 18 years of age and the average age of the country's population is around 23 years (National Bureau of Statistics and Demography [*ANSD*], 2020). At the launch of the Presidential Council on Youth Employment and Socio-Economic Integration in April 2021, the president of Senegal, speaking about the country's demographic structure, described it as “a major challenge” for the government and for the hundreds of thousands of young people who enter the labour market each year. Thus, while this young population can play an important role in Senegal's socioeconomic development, employing them is equally an enormous challenge.

It is against this backdrop that the issue of youth employment, employability, and entrepreneurship is becoming increasingly important in Senegal's political and economic discourse. The country's government, in its Plan for an Emerging Senegal (*Plan Sénégal Émergent, PSE*), has put job creation and the improvement of people's living conditions at the centre of its political priorities (Plan for an Emerging Senegal [*PSE*], 2014). Faced with a growing youth employment crisis that affects young graduates in particular, the government has set up an important intervention framework to translate its employment policy vision into specific actions. However, to date, the results of these actions are hardly visible. Youth employment issues remain a challenge, with a significant number of young people still being exposed to unemployment or being trapped in precarious jobs. This situation is partly due to a lack of coherence between the country's employment policies and its growth and development policies. Indeed, despite the country's rapid economic growth over the period 2014–2019 (*Banque Mondiale* [World Bank], 2020), its job creation has remained inadequate, while the quality of the jobs created still leaves a lot to be desired (see the 2019–23 PAP, p. 12). This overall situation is an indication that offering quality jobs to a large number of young people entering the labour market each year is far from being an easy challenge.

Therefore, to provide policy makers with a solid basis for formulating policies aimed at improving the quality of youth employment, it is necessary to first identify the sectors of activity in which young men and women are generally employed. The relevant information used in the present study is based on several surveys conducted by the National Bureau of Statistics and Demography (*Agence Nationale*

de la Statistique et de la Démographie, ANSD). The surveys in question are the following: the Senegalese Household Survey (*Enquête Sénégalaise Auprès des Ménages, ESAM-2002*), the first and the second Poverty Monitoring Surveys (*Enquête de Suivi de la pauvreté ESPS, 2006 and 2011*), and the National Survey on Employment in Senegal (*Enquête Nationale sur l'Emploi au Sénégal, ENES-2015*). These surveys were chosen because of their comparability and national representativeness. The first three are clearly comparable insofar as their sampling frame consists of the list of census districts obtained after the mapping that was done as part of the third General Population and Housing Census in 2002. The fourth survey, *ENES*, is a continuation of the previous ones. It is conducted nationwide in order to better integrate the issues of decent work and health insurance into the scope of employment analysis. These issues were not taken into consideration in a systematic way in the *ESPS* surveys (2006 and 2011) and the *ESAM* one (2002). Nevertheless, apart from these few specificities of the *ENES* survey, it remains comparable with its predecessors in many respects. Because of their national coverage, all these surveys make it possible to identify, with great precision, the main sectors of activity in which young people are employed.

The distribution of employed young people aged 15-35 by sector of activity shows a clear predominance of agriculture[2], regardless of the survey year considered (see Table 1). There was also an upward trend in the number of young people employed in agriculture between 2002 and 2015, with a peak of around 40% in 2011. Although the proportion of young people employed in agriculture declined over the period 2011–2015, it remains the largest employment sector in Senegal. Indeed, agricultural employment accounted for almost 30% of the total youth employment in 2015; it was almost 40% in 2011. The proportion of young people employed in trade has also declined over time, but the sector remains the second largest provider of jobs after agriculture.

After agriculture comes the industrial sector (manufacturing activities) whose share of jobs has changed slightly over time. Table 1 shows that the bulk of jobs held by young people are concentrated in three of the 15 sectors of activity identified: first, in agriculture, livestock, forestry, and fishing; second, in trade; third, in manufacturing activities. The structure by gender shows a predominance of young men in agriculture and manufacturing activities and a higher proportion of young women in the trade sector. Also noticeable is a relatively low presence of both young men and young women in the mining, restaurant, hotel, and finance sectors: whatever the year considered, the proportion of young people employed in these sectors was less than 4%.

Table 1: Distribution (in %) of employed young people by sector of activity, year, and gender

Sector of Activity	2002			2006			2011			2015		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
	%	%	%	%	%	%	%	%	%	%	%	%
Agriculture, animal breeding, forestry, fisheries	27.21	25.69	26.64	31.96	34.38	32.78	43.65	41.89	42.92	33.52	31.76	32.82
Extraction (mining, quarrying)	0.95	0.91	0.93	0.54	0.14	0.41	2.34	0.54	1.59	0.56	0.36	0.48
Manufacturing activities (industry)	11.34	5.39	9.12	12.09	5.01	9.69	14.17	4.99	10.37	10.62	6.26	8.89
Water, electricity, and gas	1.25	0.16	0.85	0.96	0.38	0.76	0.46	0.02	0.28	0.54	0.02	0.34
Construction and public works	11.98	0.32	7.63	10.51	0.73	7.19	6.36	0.37	3.87	11.00	0.45	6.82
Trade/sales	18.50	31.90	23.49	19.02	25.43	21.19	10.33	19.70	14.21	14.88	15.83	15.25
Restaurants and hotels	0.35	1.65	0.83	0.44	1.88	0.93	0.95	1.15	1.03	0.58	3.23	1.63
Transport & communications	9.70	0.71	6.35	7.70	0.55	5.28	5.08	0.53	3.19	8.67	0.66	5.50
Banking, insurance, and other financial institutions	0.35	0.35	0.35	0.41	0.42	0.42	0.34	0.27	0.31	0.30	0.46	0.36
Other commercial services	10.73	9.71	10.35	9.70	7.55	8.97	0.95	0.24	0.65	0.15	0.15	0.15
Domestic services	1.98	18.83	8.26	1.92	18.76	7.63	0.18	3.97	1.75	3.17	25.09	11.85
Public service	3.00	2.20	2.70	3.28	3.19	3.25	2.77	3.05	2.88	3.45	4.35	3.80
Private organizations	2.47	1.98	2.29	1.20	1.37	1.26	3.64	7.74	5.34	1.06	0.40	0.80
International organizations, Embassies	0.18	0.21	0.19	0.09	0.20	0.13	0.24	0.11	0.19	0.29	0.37	0.32
Other	0.00	0.00	0.00	0.18	0.03	0.13	8.54	15.44	11.40	11.21	10.64	10.98
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total number of employed young people	629,020	373,574	1,002,594	1,196,742	613 712	1,810,454	1,230,511	870,892	2,101,403	1,154,733	757,302	1,912,035

Note: Relative weighting applied to the calculation to ensure that the results were representative of Senegal's entire population.
Source: Calculated by the authors based on the *ESAM 2* [2002], *ESPS 1* [2006], *ESPS 2* [2011], and *ENES 1* [2015] surveys.

In order to better guide public policy choices, the rest of the analysis focuses on the main sectors where young people are most represented and those where they are least represented. The respective sectors are: (i) agriculture, livestock, forestry, and fisheries; (ii) trade; (iii) manufacturing; (iv) mining; (v) restaurants and hotels; and (vi) finance. The 2030 Agenda for Sustainable Development Goals, to which Senegal is a signatory, shows that the country seems well disposed to experiment with policy interventions aimed at facilitating the insertion of young people in the sectors of activity that offer them most employment opportunities. However, little information is available on the quality of jobs available in above-mentioned sectors. To fill this gap, the present study analyses the quality of jobs occupied by young people in the very sectors, by taking into consideration the level of visible and invisible underemployment and the degree of job security and stability. Visible underemployment is related to working time. This concerns the young people who had worked less than 40 hours in a week (before the survey) and were available to work more hours. In contrast, invisible underemployment is a measure of insufficient labour income. This concerns the young people who were looking for ways of increasing their income in the last seven days before the survey and who said they were ready to take up another job in the four weeks following the survey interview. Job security is measured based on workers' affiliation to a social security system[3] as part of their employment, affiliation which enables them to benefit from, among other things, a pension, a health insurance, and a work accident insurance. For its part, job stability is constructed from a variable having two modalities: one for which a job is said to be regular (with a permanent/open-ended employment contract) and the other for which a job is said to be irregular (which includes fixed-term contracts and jobs without contracts).

Table 2 reveals that the young people in visible underemployment were mainly employed in trade, agriculture, and manufacturing activities during the period 2002–2011. Between 2011 and 2015, however, this type of underemployment fell considerably in the trade sector but rose sharply in the manufacturing one: from 43.27% to 9.36% in the former, and from 12.81% to 47.62% in the latter. In relation to gender, the table shows that the bulk of underemployed young men were found in the agricultural and manufacturing sectors for all the years considered. On the other hand, while the underemployed young women worked mainly in the trade and agriculture sectors during the period 2002–2011, in 2015 most of them worked in the manufacturing (57.49%) and the restaurant and hotel sectors (33.9%).

Table 2: Distribution of young people's visible underemployment rates by sector of activity and by gender

Sector of Activity	2002			2011			2015		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
	%	%	%	%	%	%	%	%	%
Agriculture, animal breeding, forestry, fisheries	44.87	27.42	38.49	65.33	26.88	40.75	42.23	5.58	20.09
Manufacturing activities (industry)	19.41	11.22	16.41	13.41	12.81	13.03	32.54	57.49	47.62
Extraction (mining, quarrying)	2.41	0.94	1.88	1.95	0.04	0.73	4.32	0.00	1.71
Trade/sales	32.85	58.44	42.21	14.33	59.60	43.27	19.02	3.03	9.36
Restaurants and hotels	0.38	1.71	0.87	4.91	0.67	2.20	0.00	33.90	20.48
Banking, insurance, and other financial institutions	0.07	0.27	0.15	0.07	0.00	0.02	1.89	0.00	0.75
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total number of employed young people	88,773	51,223	139,996	17,614	31,220	48,834	2,949	4,501	7,450

Notes: The ESPS 1 [2006] survey was excluded from the calculation because it did not collect information on the number of hours worked per week. Relative weighting was applied to the calculation to ensure that the results were representative of Senegal's entire population.
Source: Calculated by the authors based on the *ESAM 2* [2002], *ESPS 2* [2011], and *ENES 1* [2015] surveys.

Table 3 shows that invisible underemployment mostly affected young people working in the agricultural and trade sectors. Out of every 100 young people employed in agriculture, almost half were actively seeking another job to increase their income. Invisible underemployment affected 37.51% of young people employed in trade sector in 2006 and 27.55% in 2011. Invisible underemployment also varied by gender. For example, in 2006 most underemployed young men worked in agriculture (54.43%), trade (33.02%), and manufacturing activities (10.91%). The same trend was observed in 2011. In the case of young women, this type of underemployment was more pronounced among those working in trade (48.45% in 2006 and 51.45% in 2011), agriculture (41.71% in 2006 and 36.68% in 2011), and manufacturing activities (7.93% in 2006 and 9.03% in 2011). Overall, the results show that the phenomena of visible and invisible underemployment were widespread in the sectors of activity that employed young people most. Tables 2 and 3 show that most young people employed in agriculture, trade, and industry sectors worked fewer hours than the norm and would have liked to work more; they earned insufficient income, which led them to seek additional employment.

Table 3: Distribution of young people's invisible underemployment by sector of activity and by gender

Sector of Activity	2006			2011		
	Male	Female	Total	Male	Female	Total
	%	%	%	%	%	%
Agriculture, animal breeding, forestry, fisheries	54.43	41.71	50.73	52.74	36.68	48.19
Manufacturing activities (industry)	10.91	7.93	10.04	22.46	9.03	18.66
Trade/sales	33.02	48.45	37.51	18.11	51.45	27.55
Restaurants and hotels	0.94	1.23	1.02	1.93	1.21	1.73
Extraction (mining, quarrying)	0.65	0.65	0.65	4.48	0.96	3.48
Banking, insurance, and other financial institutions	0.05	0.03	0.04	0.28	0.66	0.39
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total number of employed young people	213,556	87,698	301,254	179,385	70,879	250,264

Notes: The *ESAM 2* [2002] and *ENES* [2015] surveys were excluded because they did not have information on whether the individual sought (Yes) or did not seek (No) to increase his/her income. Relative weighting was applied to the calculation to ensure that the results were representative of Senegal's entire population.
Source: Calculated by the authors based on the *ESPS 1* [2006] and *ESPS 2* [2011] surveys.

Job insecurity is also a reality for young men and young women, to the extent that almost all employment in the agriculture, the industry, and the trade sectors was irregular. The trend was the same in both 2011 and 2015. In all the survey years, the proportion of regular employment was highest in the sectors with low rates of youth employment, namely restaurants and hotels, mining, and finance. For its part, irregular employment predominated, regardless of the sector in which young people were employed.

Table 4: Distribution (in %) of employed young people by nature of employment and by gender

Sector of Activity	2011						2015					
	Male			Female			Male			Female		
	Regular employ.	Irregular employ.	Total No.	Regular employ.	Irregular employ.	Total No.	Regular employ.	Irregular employ.	Total No.	Regular employ.	Irregular employ.	Total No.
	%	%	%	%	%		%	%	%	%	%	%
Agriculture, animal breeding, forestry, fisheries	0.27	99.73	530,680	0.10	99.90	362,780	1.14	98.86	387,087	0.20	99.80	240,484
Manufacturing activities (industry)	3.28	96.72	170,103	3.14	96.86	42,637	4.95	95.05	122,610	2.31	97.69	47,437
Extraction (mining, quarrying)	10.74	89.26	27,983	32.26	67.74	4,593	15.18	84.82	6,479	0.00	100.00	2,730
Trade/sales	1.05	98.95	124,081	1.07	98.93	167,328	3.67	96.33	171,812	2.67	97.33	119,861
Restaurants and hotels	30.43	69.57	11,344	5.88	94.12	9,238	33.62	66.38	6,708	7.21	92.79	24,467
Banking, insurance, and other financial institutions	12.83	87.17	4,219	39.15	60.85	2,312	40.22	59.78	3,471	80.87	19.13	34,489

Notes: The *ESAM 2* [2002] and *ESPS* [2006] surveys were excluded because they did not have information distinguishing between types of contracts.
Relative weighting was applied to the calculation to ensure that the results were representative of Senegal's entire population.
Source: Calculated by the authors based on the *ESPS 2* [2011] and *ENES 1* [2015] surveys.

A close look at the figures for job security (Table 5) sheds light on another facet of the precariousness of youth employment: the industrial sector shows the highest level of job security, with about 27% of young people benefiting from a social security system in their job in 2011 and 33% in 2015; it is followed by agriculture (26.49% in 2011 and 13% in 2015), and by trade (14.9% in 2011 and 18.27% in 2015). The same trend was observed for both young men and young women, even though job security for young women was higher in trade than in the other sectors in 2015. Overall, the table shows that less than half of young people benefited from a social security system as part of their employment. This low level of job security is an indication of the precarious situation faced by most young people on the labour market in Senegal.

Table 5: Distribution of social security rates for the employed youth by sector of activity, year, and gender

Sector of Activity	2011			2015		
	Male	Female	Total	Male	Female	Total
	%	%	%	%	%	%
Agriculture, animal breeding, forestry, fisheries	25.43	29.41	26.49	18.11	5.18	13.00
Manufacturing activities (industry)	32.40	11.59	26.87	42.94	17.04	32.70
Extraction (mining, quarrying)	11.88	6.09	10.34	9.16	ND	5.54
Trade/sales	8.85	31.63	14.90	12.52	27.07	18.27
Restaurants and hotels	16.65	6.53	13.96	3.25	16.25	8.39
Banking, insurance, and other financial institutions	4.80	14.76	7.44	14.02	34.47	22.10
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of employed young people	30,399	11,005	41,404	10,745	7,021	17,766

Notes: The *ESAM 2* [2002] and *ESPS* [2006] surveys were excluded because they did not have information relevant to social security in employment. Relative weighting was applied to the calculation to ensure that the results were representative of Senegal's entire population.
Source: Calculated by the authors based on the *ESPS 2* [2011] and *ENES 1* [2015] surveys.

3. Literature review

Determinants of access to employment opportunities

Job search theory based on several search modes (market search and job search) has largely explained the conditions of access to employment (Mortensen, 1986). Job search is based on several strategies (market procedures, use of institutional intermediaries and the social network) which can have a discriminating impact on access to employment opportunities (Osberg, 1993). Looking for a job depends on an individual's willingness to mobilize, to take responsibility for oneself and to build one's professional project. This search will be linked to individual characteristics, public policies, and strategies that influence the job search behaviour.

The market strategy (autonomous search), whereby the job seeker relies only on himself/herself to find a job and not on institutions, consists in the job seeker presenting his/her services or making the most of what he/she can do to have access to employment opportunities. This highly autonomous strategy requires a high degree of mobilization of personal resources (in time, perseverance, financial means, etc.) to ensure a high probability of getting a job. The intermediation strategy (whereby the job seeker has recourse to institutional intermediaries) is different from the dependence on an institution offering job-search support in terms of who to rely on to get a job.

Taking into consideration the intervention of public employment services in the job search model, Bull et al. (1987) highlighted the significant impact of intermediaries on the probability of access to employment. Whatever the strategy used, landing a job on the labour market is a costly activity and the decision to accept or refuse a job is based on the optimization principle. Although the labour market makes drastic divisions among job seekers in terms of the factors that limit or facilitate access to opportunities, the job seeker optimizes the conditions of access to these opportunities by making a trade-off between search time and the salary he/she would like to get, the direct and indirect costs of the information search, and the expected benefits in determining the search status.

Faced with several strategies, the job seeker chooses the one that gives him/her the most advantages in order to maximize the expectation of gain from his/her search. The sequential approach of the job search theory shows that job search is done in a stationary environment where individuals are assumed to be risk neutral

and homogeneous (McCall, 1970; Mortensen, 1986). While the characteristics of job vacancies, except for the salary offered, are known to all jobseekers, some personal characteristics of the job seeker are unknown to the employer. That is why the job seeker's behaviour depends on his/her individual search efforts, his/her individual characteristics, and the combination of search modes he/she uses (Kahn & Low, 1990). The matching approach considers the market to be a dynamic meeting place between labour supply and demand. By focusing on the quality of the match between the job seeker and the job he/she is seeking, this approach (the job matching theory) fits well with the theoretical framework of the traditional neoclassical economics (competition and maximizing agent) that rests on the heterogeneity of work and imperfect information about the job seeker's characteristics and available jobs (Jovanovic, 1979). This approach explains the coexistence of unemployment and recruitment difficulties on the labour market. It formalizes frictional unemployment by showing the importance of taking account of matching difficulties, while also taking account of the obstacles to an efficient functioning of the labour market (Cahuc & Zylberberg, 2004). Although this approach is based on imperfect information on the labour market, often there are heterogeneity and segmentation on this very market that expose the job seeker to the risk of not finding a job (Glick & Sahn, 1997).

The different approaches to the job search theory indicate that the job seeker's personal characteristics (age, qualifications, marital status, gender), his/her neighbourhood, and the specificities of his/her area of residence, his/her social network, and institutional intermediaries, all influence his/her job search behaviour. According to Benoit-Guilbot (1990), the job seeker's gender, age, and qualification level enable the market to sort out those who are employable and those who are not, those who find a classical job (permanent/open-ended contract), those who find a non-classical job (fixed-term contract), and those who find nothing. A person's qualifications consist of his/her ability to perform a certain type of skilled work, consisting of a set of complex and diversified manual and intellectual tasks to be performed efficiently at a given moment. They are characterized by a combination of knowledge and skills acquired through initial training and on-the-job training on the formal or informal labour market, and through work experience that reflects the job seeker's productive capacity (Rose-Redwood, 2012). The job seeker's ability, which is learnt during his/her training in an education system, can be maintained, developed, transformed, or can regress in the course of employment. His/her qualifications are measured based on the type and level of studies done or training received, the number of years of study or the length of apprenticeship, the product of his/her initial training, or the jobs held during his/her working life (Salais, 1976).

Although there may be a match between the content of the job seeker's training and the skills required of him/her once employed, what he/she learns as part of his/her further training and through on-the-job experience reinforces the mismatch between the two (Salais, 1976). have shown that some job seekers cannot

always work in sectors considered more profitable because of their qualifications. Qualifications require the integration of certain market segments related to occupational heterogeneity. This can lead to a violation of the assumption of the standard classical model, according to which a person operates in an anonymous market without distinction. Taking stock of the heterogeneity of the labour market in sub-Saharan Africa, Glick and Sahn (1997) found that education was not an important determinant of job search in Guinea.

In addition, human capital theory, analysis of labour as a quasi-fixed factor, tournament-theory models, deferred payment contracts, and internal market analysis, all consider age as a criterion of choice in the employment relationship (Jolivet, 2003). Companies' decisions lead to the exclusion of older workers from employment, due to their very high wage cost in relation to their marginal productivity and to the need to adjust the workforce quantitatively and qualitatively (Jolivet, 2003). Sabatier (2002) found that male job seekers looked for jobs through institutional intermediaries more often than female job seekers did. On the other hand, graduate job seekers were found to prefer the market procedure while the low-skilled job seekers preferred institutional intermediaries and personal relationships (Bouabdallah et al., 2002).

Regardless of their qualifications and their age, unskilled job seekers look for any kind of job. Although older or more qualified job seekers make some demands about the jobs they want, life and available opportunities can change their plans and provide them with a better job than that initially hoped-for. This suggests that a job seeker's plan for employment in a hostile environment should be oriented towards a more autonomous search for work without setting overly specific goals that can cause him/her to miss the opportunities that arise. Kingdon and Knight (2001) explained the job seekers' behaviour in developing countries by the role of intra-household transfers which may cause individuals to remain unemployed, by the level of poverty in their area of residence, and by the job seeker's poverty level, which can make the cost of job search more unbearable. Kingdon and Knight (2004) found, in the case of South Africa, that job seekers struck a balance between the market and leisure when it came to entering the labour market. Weighing how hard doing a certain job would be against the pay he/she would get for it, the job seeker may consider unemployment as the lesser evil. In light of the literature reviewed, it is expected that job seekers in Senegal will be more likely to look for jobs with greater intensity depending on their qualifications, age, and gender.

With a growing demographic pressure, high unemployment rates, and the proliferation of underemployment, it is imperative that policy makers make youth employment their main priority. This needs to be reflected in passive and active labour market policies that have a direct impact on the labour market so as to generate more employment opportunities for young people and to enhance their employability or the quality of the jobs they can get.

Support programmes for employment and socio-professional integration

In order to offer practical solutions to the problem of youth unemployment, many countries have created public employment services aimed at implementing active employment policies in an effective way. While few studies have evaluated the effectiveness of such policies on young people, the few existing impact studies are not unanimous on their effectiveness (Card et al., 2010). Some studies have shown that young people's participation in a public employment support programme does not always result in them getting a job or reducing their unemployment duration (Cockx & Dejemeppe, 2002; Kluve et al., 2019). In contrast, other studies have shown a positive effect of employment support programmes on the employability and income of their beneficiaries (Betcherman et al., 2007; Ehlert et al., 2012; Ibarraran et al., 2014; Groh et al., 2016; Card et al., 2018). The literature on the issue has identified several types of programmes, among which are vocational training programmes, intermediation programmes, and entrepreneurship support programmes.

Vocational training programmes aim to increase the workforce's skills, to increase the demand for employment, and to connect job seekers to job providers so that both can sign contracts between them. Such programmes enable first-time applicants to move quickly out of unemployment by providing them with the skills they need (McKenzie, 2017). For example, they are reported to have had a positive effect on the integration of young graduates in Belgium by increasing their chances of finding a job (Bollens & Nicaise, 1994), improving their employability, and reducing the duration of their unemployment spells (Torp, 1994; Cockx, 2000). Also, studies carried out in the US have shown that vocational training programmes increase the frequency of hiring and gains from earnings (Eberwein et al., 1997). This positive effect of vocational training programmes on employability and income has also been observed in some developing countries. For example, using the regression discontinuity method, Chakravarty et al. (2019) found a positive effect of vocational training on its beneficiaries' probability of getting employment and on their income in Nepal. Similarly, Maitra and Mani (2017) found, based on randomized experiments, that women's participation in vocational training programmes in India had positive effects on their employment chances and their earnings. Moreover, using the random assignment method, Alzúa et al. (2013) and Attanasio et al. (2017) found that vocational training programmes also had positive short-term effects on formal employment and income in Argentina and Colombia.

While vocational training programmes are generally implemented to improve the skills of their beneficiaries, intermediation programmes often provide advice and guidance to job seekers. Impact studies on the effectiveness of intermediation policies have applied a meta-analysis to many employment policies around the world and have found that they are more likely to produce positive effects in the short term (Card et al., 2018, Kluve et al., 2019). Similarly, Dammert et al. (2015) found that intermediation policies in terms of faster, cheaper, and updated information on job

offers via telephone messages had a positive short-term effect on employment. Jensen (2012) also found, in the case of India, that intermediation programmes connecting recruitment services to rural job seekers had a positive impact in terms of increasing the latter's chances of being employed and their income.

While vocational training and intermediation programmes, through advice and guidance, certainly have positive effects on young people's employability, access to productive, decent, sustainable, and remunerative employment is still a problem for the latter. The public employment services' orientation of employment policies through promoting self-employment for young people is another strategy for reducing youth unemployment and job insecurity. Policies aimed at supporting youth entrepreneurship and creating subsidized employment are expected to have positive effects in terms of job creation. Using a meta-analysis of several employment policies around the world, Card et al. (2018) and Kluve et al. (2019) found that public sector subsidized-employment programmes produced few positive effects. Franklin (2015) found that financial support to young job seekers in Ethiopia had a positive impact on their employment. Support policies aimed at enhancing youth motivation and their entrepreneurial capacity, and at providing them with financial support, have an indirect impact on employment, since such policies increase labour demand through enterprise creation and self-employment.

While most of the above-mentioned studies have reported positive effects of employment policies on labour market indicators, some others have reported a non-significant, or even a negative, effect of those policies. For example, using bivariate duration models, Hujer et al. (2006) found that vocational training programmes had a statistically zero effect on unemployment duration in Germany, while Cockx and Dejemeppe (2002) and Ashenfelter and Rouse (1999) found a negative effect of those policies on income in Europe. Using a meta-analysis method that combined several employment programmes around the world according to their effects, Card et al. (2010) concluded that programmes targeting the youth were less likely to have a positive effect. This effect was found to be insignificant or negative in the short term, but relatively positive in the medium term for programmes targeting the youth and vulnerable populations in low- and middle-income countries (Kluve et al., 2019). In conclusion, the existing literature reports both positive and negative effects of youth employment policies in both developed and developing countries, but without taking into consideration the potential sector of activity where young beneficiaries of those policies could find employment.

All in all, while there is considerable literature on employment policies, impact-assessment studies in this area have often found mixed results in terms of their effect on employability and income, thus making it difficult to generalize them. Indeed, the effectiveness of programmes varies across areas, the nature of the programmes involved, and the methodology used (Kouakou, 2011; Bredgaard, 2015; Svabova & Durica, 2017). This may be related to the structure of the labour market, which varies according to a country's economic structure. That is why there are few such studies done on Africa in general, and on Senegal in particular. There is thus little solid evidence on the sectors that provide quality employment to young people entering the labour market. It is against this background that the present study aims to assess the impact of employment support programmes on the employability of young people in sectors that provide quality jobs.

4. Methodology

Theoretical framework

The integration of young people into productive employment is a major labour-market challenge, which is why a multitude of policy interventions have been implemented to help the vulnerable youth. Within many theories, such as the job search theory (Stigler, 1962) and the model of matching the unemployed with available jobs (Mortensen & Pissarides, 1994, 1999), optimal job-search strategies have been developed, the issue of employment still requires further research, and researching it depends on the research technique used, the period of time during which the job offer is admissible, and the wages associated with the job. These wages lead to friction on the labour market due to the heterogeneity of agents' characteristics, to issues of imperfection and to the agents' location. Thus, to adjust labour supply and demand, public employment services have been set up whose role is to assist young people in their search for work through public policies that have been designed to address the different aspects of the labour market.

Based on the theory of action and the theory of change, and effectiveness of public policies, the present study assesses the impact of employment support programmes that are in line with the Senegalese Government's aim of integrating young people into the labour market. Based on the relevance of those policies (relevance linked to the rationality and transparency of the public employment services' objectives), it will be possible to assess their effects and the sectors of activity that are likely to absorb potential beneficiaries. The study therefore aims to understand how the government achieves its youth employment goals through its programmes implemented by public employment services and to identify the potential sectors of employability for young people. The impact of those programmes on employment and income prospects will also enable us to identify the factors that directly or indirectly influence young people's participation in them. To avoid reverse causality effects and incidence effects, we will analyse the synthetic job-quality index for the young people who participated in public employment support programmes and compare it to that of those who did not participate in them.

Source of data

The present study is based on primary data obtained from the Survey on the Improvement of Employment Policies (*Enquête sur l'Amélioration des Politiques d'Emploi, EAPE*) conducted in 2018 among 2,746 individuals in Senegal with the technical and financial support of the International Development Research Centre (IDRC). The aim of this survey was to assess the effectiveness of programmes implemented by public employment services (PESs) in order to better integrate young people into the labour market. The results of this assessment will enable an analysis of job creation schemes and an identification of the targets in relation to public employment support policies. The survey collected information on the job seekers' demographic characteristics, their gender, their contacts, their socio-professional category and their income before and after their participation in the different PES-run programmes that took place between 2012 and 2015. The strategy for the survey was to go to the PESs to collect information available on their information sheets about all job seekers. The information made it possible to constitute a sampling frame that enabled the identification of part of the individuals who sought the PES services' assistance between 2010 and 2015.

With this sampling frame provided by the PESs, two groups of individuals were formed: the first group was composed of those who had benefited from at least one PES programme (intermediation, vocational training, entrepreneurship support), while the second group was composed of individuals (non-beneficiaries) who had unsuccessfully applied for PES services. Respondents from these two groups were randomly selected and contacted by telephone for a direct interview appointment. If the telephone number could not be reached, a new random selection was made. In addition, when a person initially contacted was not available for the appointment, a new person was randomly selected and contacted. Further, a third group of individuals who had never used the PES services were surveyed. A standard household survey was used to find the individuals in this last group.

The information collected about the three groups concerned the evolution of their socio-demographic characteristics since 2010, their career path, their experiences with the PESs, the training programme they had received, and their activity status before and after joining the programme. At the end of the survey, 2,746 individuals were surveyed: 41.26% of them were women and 58.74% men. Although the information collected was likely to change between the date of enrolment in the PES programmes and the survey period, 33.07% of the individuals surveyed had not enrolled in them, while 66.94% had. Of those who had, 41.19% had participated in at least one programme, while 55.81% had not participated in any yet.

Empirical framework

The present study focused on young people aged 15-35 years in accordance with the definition of the term "youth" adopted by the African Union.[4] In our analysis, the situation of young men is compared to that of young women so as to highlight possible differences in outcomes between the two groups of young people, as a way of establishing whether young women were more disadvantaged than young men on the labour market or not. To that end, we adopted a three-step approach in line with our research objectives. First, we constructed a job-quality index.

Construction of a job-quality composite index

Job quality is a multidimensional concept that encompasses several dimensions such as wages, non-wage benefits, job security, and working conditions (*OIT* [ILO], 2013). Because of this, we constructed a job-quality composite index using the seven dimensions reported in Table 6. Each dimension consists of several indicators selected based on the literature and available data.

Given that the dimensions selected for the calculation of the youth job-quality index are measured at different scales, we constructed indices for each of the dimensions and then aggregated them into a composite index. To normalize the indicators measured at the different scales into indices, we adopted the following equation from UNDP (2014) an equation that is used to calculate human development indices:

$$IndexA_i = \frac{A_i - A_{min}}{A_{max} - A_{min}} \quad (1)$$

Where, A_i is the actual value of an indicator in a sub-dimension and A_{max} and A_{min} are the maximum and minimum values of a given indicator in the data set. After normalization, the indices are between 0 and 1, indicating a low score and a high score, respectively. The extent to which the indicators in a dimension capture a unified concept is indicated by Cronbach's alpha statistic. The indicators, the inclusion of which would significantly lower the alpha coefficient, or which had a low correlation with the index formed by the remaining indicators, were excluded. After normalizing each of the indicators, the value of the dimensions with more than one indicator was calculated by averaging the values of the sub-dimensions or indicators using the following equation:

$$C_i = \frac{\sum_{i=1}^{n} IndexA_i}{n} \quad (2)$$

Where, C_i is one of the seven dimensions of the youth job-quality, $IndexA_i$ is the indicator(s) that make up each dimension, and n is the number of indicators in each dimension.

After calculating the index values of the seven main dimensions, the job-quality composite index was obtained by averaging the index values of the seven dimensions using the following equation:

$$Q_i = \frac{\sum_{i=1}^{n=7} C_i}{N} \quad (3)$$

Where, Q_i is the job-quality index of young person i and C_i is one of the seven dimensions, while N is the total number of dimensions that make up the job-quality index ($N=7$). The job-quality index was then normalized from 0 to 100 to facilitate the interpretation of the results. A score around 0 indicates a low-quality job, while around 100 indicates a high-quality one.

Table 6: Dimensions and indicators used for the calculation of the job-quality index

Dimensions	Indicators
1. Health, safety at work and working conditions (physical elements, protection against work risks)	Have a health insurance: 1 = Yes and 0 = No Receive work equipment: 1 = Yes and 0 = No
2. Remuneration	Annual remuneration (in thousands of CFA francs). Receive a bonus (housing, 13th month, electricity): 1= Yes and 0 = No
3. Working time and reconciliation of work and family life	Time spent working on the main job in the last 7 days (in hours worked). Working less than 40 hours in the last 7 days: 1= Don't want to work more; 2= Work schedule is set by law; 3= Work schedule is set by employer; 4= Less work due to bad weather; 5= Personal issues (health, housework); 6= Other reason(s), to be specified. Worked more than 40 hours in the last 7 days: 1= Normal working hours; 2= Excessive work due to favourable economic conditions; 3= Excessive work to make both ends meet; 4= Other reason(s), to be specified.
4. Job security and social protection	Benefit from a social contribution: 1= Yes and 0 = No. Accorded paid sick leave: 1= Yes and 0 = No. Accorded paid annual leave: 1= Yes and 0 = No. Accorded maternity/paternity leave: 1= Yes and 0 = No. Get a promotion within the company: 1= Yes and 0 = No.
5. Social dialogue and collective representation	Trade union membership: 1= Yes and 0 = No. Membership of an employers' group: 1= Yes and 0 = No.

continued next page

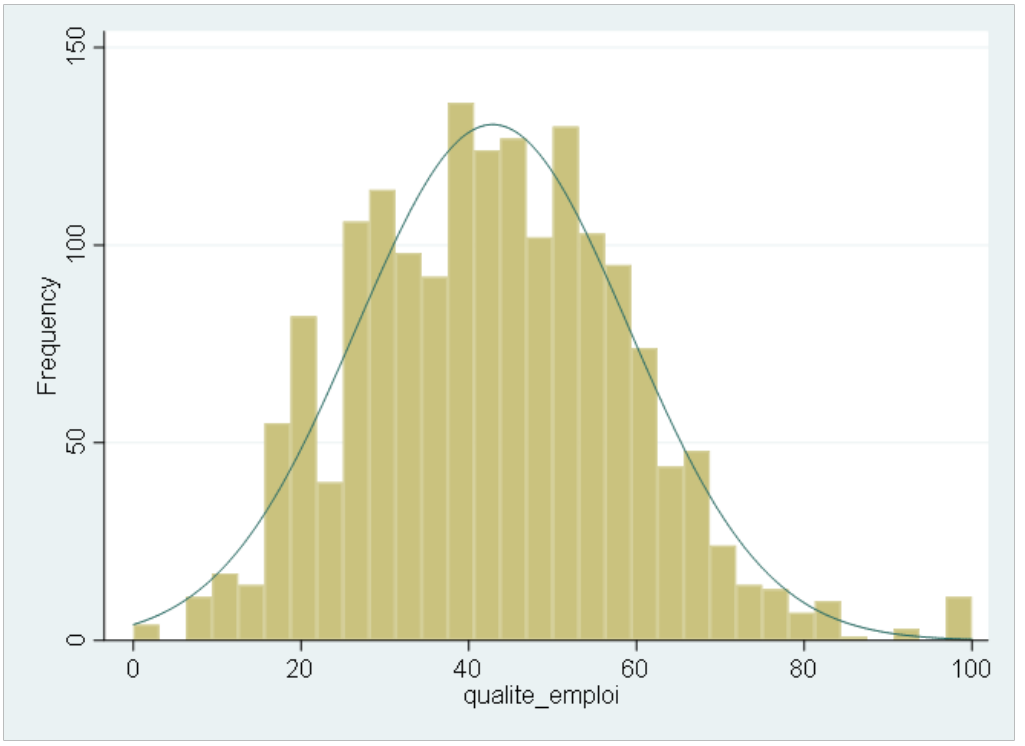
Table 6 Continued

Dimensions	Indicators
6. Qualifications	Have received vocational training/retraining while in your job: 1= Yes and 0 = No. The job you are doing corresponds to the training you have received: 1= Yes and 0 = No 0.
7. Job stability	Type of contract: 1= Written open-ended contract; 2= Written fixed-term contract; 3= Verbal agreement; 4= Nothing at all. Employment status: 1= Regular; 2= Casual. Receive a pay slip: 1= Yes and 0 Otherwise.

Source: Compiled by the authors.

Figure 1 shows the distribution of the job-quality index. As can be seen, most young people in high-quality jobs are in the range of about 25-55 on a 100-point scale. On the other hand, there is a long line of low-quality jobs at both ends.

Figure 1: Distribution of the job-quality index



Note: *qualité*=quality; *emploi*= job, employment.
Source: Authors.

Specification of the model for analysing the determinants of job quality

After determining the job-quality index, we determined which sectors of activity were more likely to provide quality jobs to young people on the labour market. To do this, we estimated the following model:

$$Q_i = \gamma Secteur_i + X_i + \mu_i \quad (4)$$

Where, Q_i is the quality index for the job of young person *i*; while $Secteur_i$, which is the explanatory variable of interest in the present study, represents the sector of activity in which young person *i* is employed. In the database used, "sector of activity" is a categorical variable: it takes the value 1 if the young person is employed in agriculture, 2 if he/she is in the industry sector, 3 if he/she is in the trade sector, 4 if he/she is in the services sector other than trade, and 5 if he/she is employed in any other sector. *X* is a vector of control variables relating to the demographic and socioeconomic characteristics of young person *i*, γ and β are vectors of the parameters to be estimated, and μ_i is the error term in the equation.

Given that estimating the present study's model by the least squares method was likely to lead to biased results to the extent that an econometric analysis would have focused only on young people participating in the labour market (that is those with a job), thus automatically excluding the unemployed youth (that is both the unemployed and the inactive), we decided to use the Heckman two-step procedure to correct for potential selection bias (Heckman et al., 1997). The first step concerned the young people's decision to participate or not in the labour market, while the second concerned the possibility that they work or not in a sector providing quality jobs, depending on the first step. The factors determining the young people's participation in the labour market and in the sectors providing quality jobs were analysed in the selection equation and the main equation, respectively. The Inverse Mills Ratio (IMR) was introduced in the main equation as an explanatory variable to correct for potential selection bias. If the coefficient associated with this IMR is not significant, then there is no selection bias and the Ordinary Least Squares method gives unbiased results.

For the model to be identified, the selection equation must include at least one instrumental variable affecting the dependent variable in the selection equation, but not the one in the main equation. Following the extensive work on estimating models of labour market participation (Hyslop, 1999 & Buchinsky et al., 2010), the present study used the young person's marital status and the number of dependents living in his/her household as instruments. The idea is that both instruments affect young people's participation in the labour market but do not

have a direct impact on their entry into quality-employment sectors of activity. For example, other things being equal, married young people and young people living in households with many dependents are less likely to remain unemployed. However, this should have a limited impact on their access to quality-employment sectors, at least in the short term. In the long term, their motivation level may affect career paths and, hence, access to quality-employment sectors. However, this problem is not a big issue in the present study because this is specifically about the situation of new entrants to the labour market, that is, those beginning their career.

Specification of the model for analysing the impact of employment support programmes

To meet the present study's ultimate goal of assessing the impact of employment support programmes on the integration of young people into quality-employment sectors, experimental and quasi-experimental methods could be used. Given the nature of the data available, we opted for a quasi-experimental approach, namely the propensity score matching (PSM) method. While policy evaluation can be done using the difference-in-differences method to analyse the situation before and after treatment (Duflo, 2001), or using the random assignment method (Buddelmeyer & Skoufias, 2004), or, instead, using the random promotion method (Gertler et al., 2008), we chose to use the PSM method because it takes account of the observed effects of participation in employment support programmes. This method refers to the probability of being exposed to a treatment according to a set of observable characteristics and allows for outcomes to be attributed specifically to the type of programme the subjects participated in.

In the present study, it is assumed that for each individual *i* in the sample *N*, the following variables are observed: a variable reflecting the situation of individual *i*, which is equal to 1 if individual *i* participated in the employment support programme offered under the National State-Employer Agreement (*CNEE*), and 0 if he/she did not. *T* is linearly dependent on a vector of explanatory variables (*Z*) and a residual (ε).

$$T_i = \beta Z_i + \varepsilon_i \tag{5}$$

For each individual, Y_i is an outcome variable that measures employability. Its value varies depending on whether the young person has participated in job-search programmes or not. Y_i^T and Y_i^C are the young person's results depending on whether he/she is a beneficiary of such programmes (T_i=1) or not (T_i=0). These results correspond to the potential outcome of participation or non-participation in the

job-search programmes. The outcome variables can be deduced from the potential variables and the treatment variable through the following relationship:

$$Y_i = T_i Y_i^T + (1 - T_i) Y_i^C \quad (6)$$

T_i and Y_i are observed for each individual. The gain (G_i) of individual i after participating in the job-search programme is given by the following relationship:

$$G_i = Y_i^T - Y_i^C \quad (7)$$

This gain is not observable since it consists of the difference between what an individual's situation would be if he/she had participated in the employment support programme and what it would be if he/she had not. For individual i, it is possible to observe the outcome variable for participants in the employment support programme ($E(Y_i^T|T = 1)$), but not the outcome variable for non-participants if they had participated ($E(Y_i^C|T = 1)$). Thus, Y_i^C e is unobservable for $T_i = 1$ and Y_i^T is unobservable for $T_i = 0$. The fact that each individual has unique characteristics, and the fact that the two outcome variables Y_i^T and Y_i^C are not simultaneously observable for any individual *i*, lead to assign two important characteristics to the causal effect. Firstly, this effect is unobservable, because only one of the two outcome variables is observed for an individual. Secondly, it is also individual, which leads to an unidentifiable distribution of it in the population studied. Since this problem cannot be solved at the individual level, the interest of this propensity score matching (PSM) analysis is to measure the average treatment effect (ATT) using the target population. The estimation of this model hinges on the assumptions of conditional independence, the existence of common support, and the unit value of the treatment allowing for clearer treatment effects (Rosenbaum & Rubin, 1983, Khandker et al., 2009).

The assumption of common support refers to the support of the propensity score distribution, which ensures that the individuals in each analysis group are sufficiently similar for the comparison to be meaningful. The conditional independence assumption implies that the selection bias can be controlled if there is a set of observable variables for which the independence of treatment assignment can be verified. Thus, the conditional probability between the outcome variable of not participating in the job-search support programme (Y_i^C) and the status of participation in the job-search support programme (T) is statistically independent and defines the propensity score e(X_i) for the job-search support programme in the following way:

$$e(Z_i) = \Pr(T_i = 1|Z_i) \quad (8)$$

Where, T_i = 1 refers to the treatment group (participation in the employment support programme), T_i = 0 to the control group (non-participation in the programme), and Z_i is the set of observable covariates.

Moreover, the application of this matching method is possible if there are individuals who did not participate in the employment support programme but have identical characteristics to those who did participate in it. The individuals who are compared have the same probabilities of participating or not in the employment support programmes, such that, $0 < T(Z) < 1$. The observance of these assumptions leads to the specification of the estimator of the ATT by the PSM in the following way:

$$\text{ATT}=\text{E}\{Y_i^T|T_i = 1, e(Z_i)\} - E\{(Y_i^C|T_i = 1), e(Z_i)\} \quad (9)$$

The estimation of this equation was done in several steps: first, the probability of participating in an employment support programme was estimated using logistic regression, which enabled us to estimate the propensity scores for each individual. Then, each individual who had participated in an employment support programme was matched with one or more individuals who had not, but who had similar propensity scores, in order to estimate the treatment effect (ATT) size. Using this technique, the PSM method enabled a comparison of the differences between the outcome variables of individuals who participated in the programme and of those of individuals who did not but who had similar characteristics. To ensure the robustness of the results, three alternative matching methods were used: the nearest neighbour method, the Kernel method, and the Radius method.

We also took into consideration certain variables that may indirectly influence participation in employment and employability support programmes in the employment sectors, variables such as household size, employment of the head of household, his/her employment status, number of unemployment spells, health status prior to enrolment in the employment programme, religion, etc.

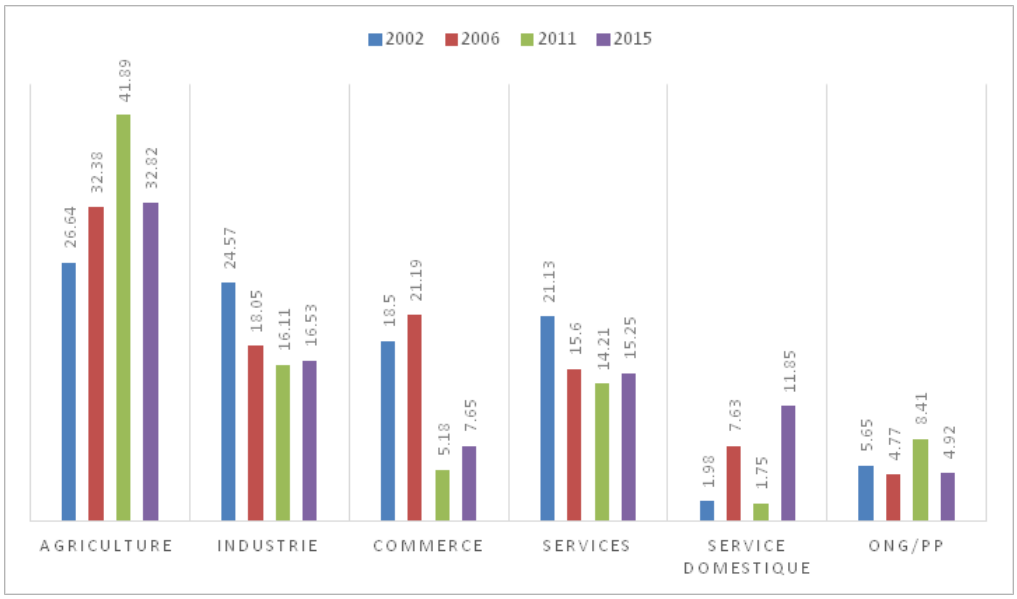
5. The results

Before presenting the results of econometric estimations, let us first present some descriptive statistics to see how the job-quality index varies according to certain socioeconomic and demographic characteristics.

Sectors of activity with a high potential for creating jobs for young people

An analysis by sector of activity shows that the agricultural sector was the one that employed young people most; it was followed by the industrial sector, the service sector, and the trade sector.

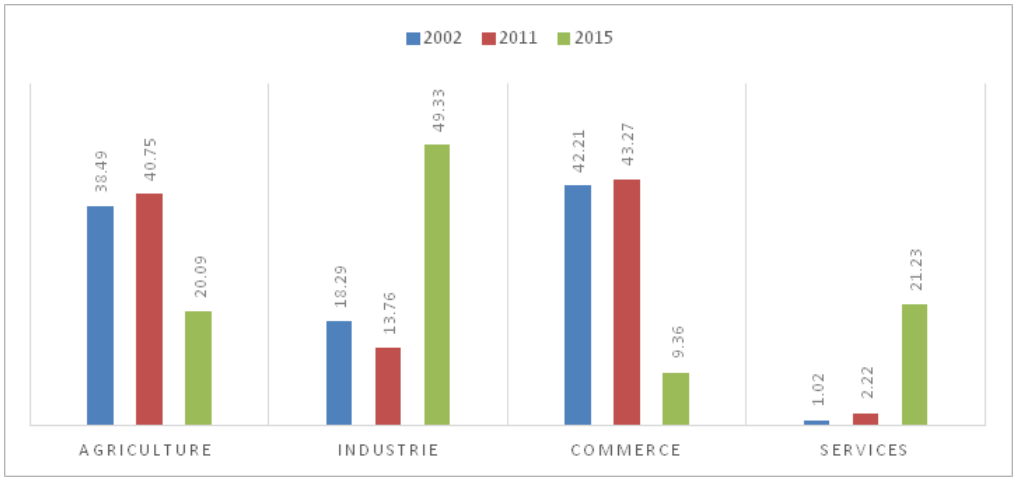
Figure 2: How the different sectors of activity provided employment to young people



Notes: *AGRICULTURE*=Agriculture; *INDUSTRIE*=Industry; *COMMERCE*=Trade; *SERVICES*=Services; *SERVICE DOMESTIGUE*=Domestic Services; *ONG/PP*=NGO/PP.

Figure 3 shows that, in 2002 and 2011, underemployment was most prevalent in the agricultural sector (38.49% and 40.75%, respectively) and in the trade sector (42.21% and 43.27%, respectively); while in 2015, it was in the industrial sector (49.3%), then in the service sector (21.2%), and in the agricultural sector (20%). Although Figure 2 shows that the agricultural sector offered most jobs to young people, a close reading of the data in Figure 3 shows that 40% of those jobs were cases of underemployment.

Figure 3: Rate of young people's visible underemployment by sector of activity

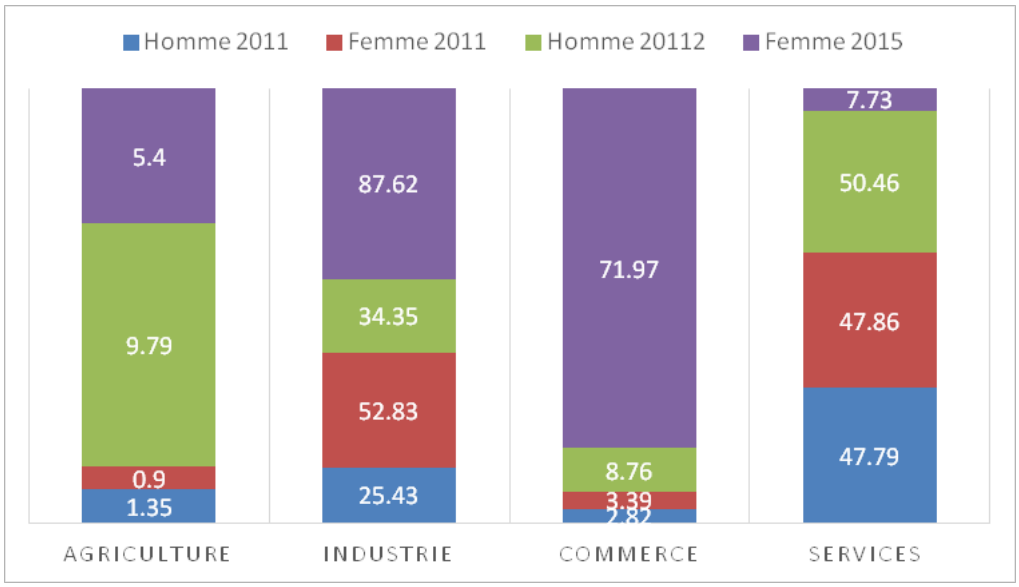


Notes: *AGRICULTURE*=Agriculture; *INDUSTRIE*=INDUSTRY; *COMMERCE*=Trade, *SERVICES*=Services.

Figure 4 presents regular-employment data from the 2011 and 2015 surveys. It shows that, regardless of the data analysed, the industrial sector provided most of the regular employment; it was followed by the service sector. The two sectors maintained the same characteristics regarding the supply of regular employment to young men and young women.

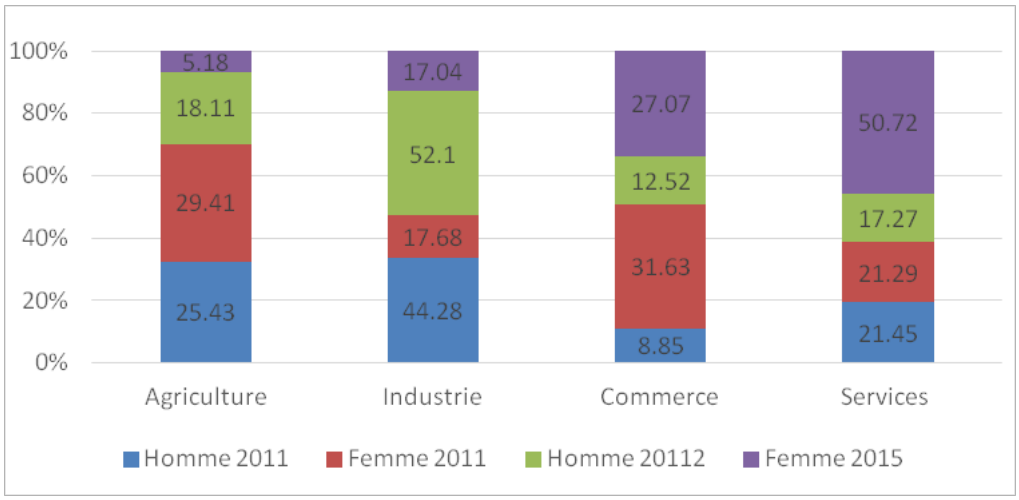
Figure 5 shows the number of jobs which offered social security. In 2011, the industrial sector offered more jobs with social security to young men than to young women. In 2015, young women got more jobs with social security than young men in the services and trade sectors, while the opposite was observed in the industrial sector, with more young men getting more jobs with social security than young women.

Figure 4: Nature of young people's employment by sector of activity



Notes: *Homme*=Male; *Femme*=Female; *AGRICULTURE*=Agriculture; *INDUSTRIE*=Industry; *COMMERCE*=Trade; *SERVICES*=Services.

Figure 5: Number of young people's jobs offering social security by sector of activity



Notes: *Homme*=Male; *Femme*=Female; *Agriculture*=Agriculture; *Industrie*=Industry; *Commerce*=Trade; *Services*=Services.

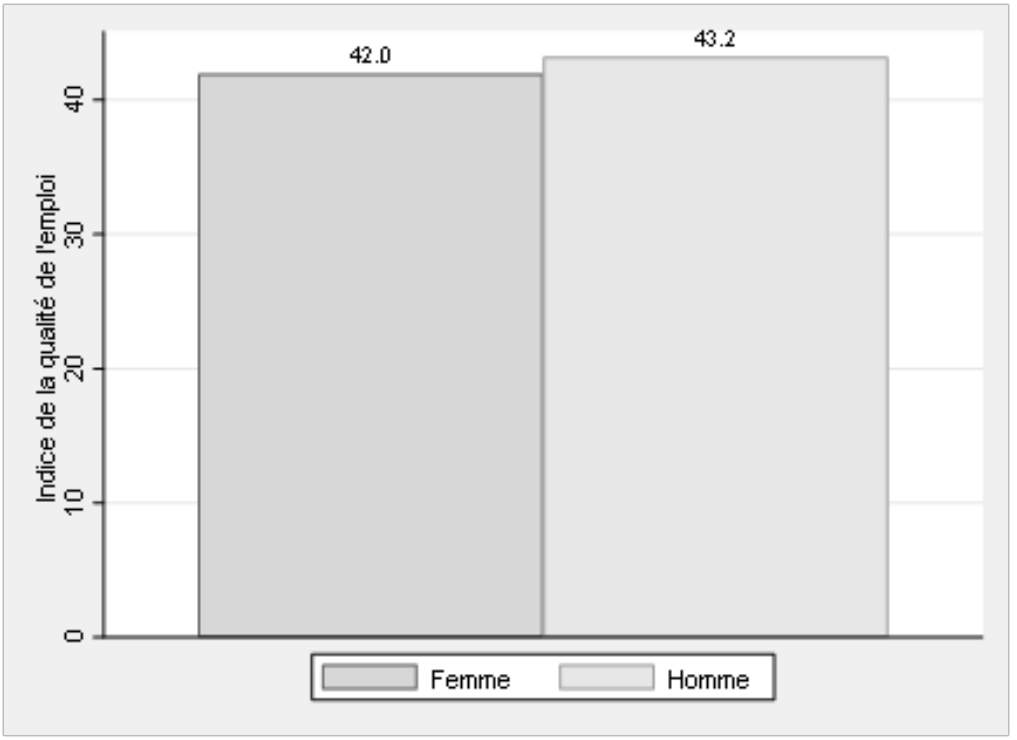
The industrial and service sectors are the ones that provided quality jobs to young people, as it is the two that offered them employment offering social security most. In the two sectors there was less underemployment than in the trade and the agricultural sectors, regardless of gender.

Analysis of the determinants of job quality

Descriptive analysis of the determinants of job quality

Figure 6 shows the average job-quality index for young people by gender. This index was higher for young men than for young women, meaning that young women were more likely to be in low-quality jobs than their male counterparts.

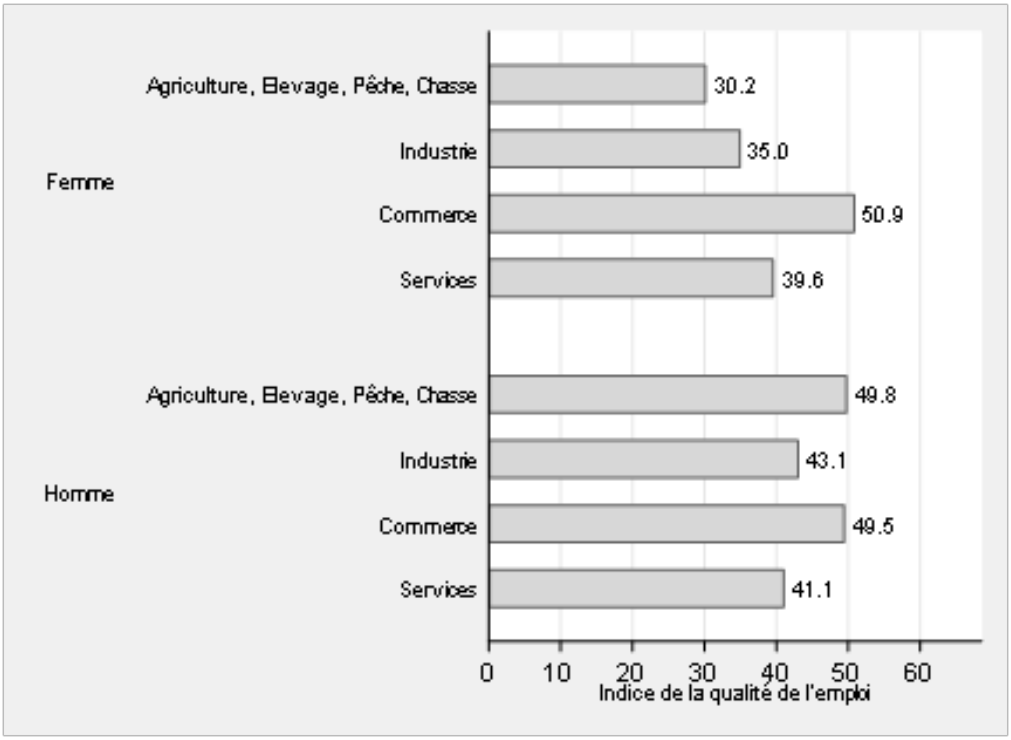
Figure 6: Distribution of the job-quality index by gender



Notes: *Femme*=Female; *Homme*=Male; *Indice de la qualité de l'emploi*=job-quality index.
Source: Compiled by the authors based on the *EPAE* survey.

Figure 7 shows how the job-quality index varies by sector of activity. It indicates that young women working in the trade, the services and the industrial sectors had higher-quality jobs. At the same time, it indicates that young women working in agriculture (in its broad sense) had the lowest job-quality ranking. In contrast, in the agricultural and the trade sectors, as well as in the industrial and the services sectors, young men were more likely to be in quality jobs than young women.

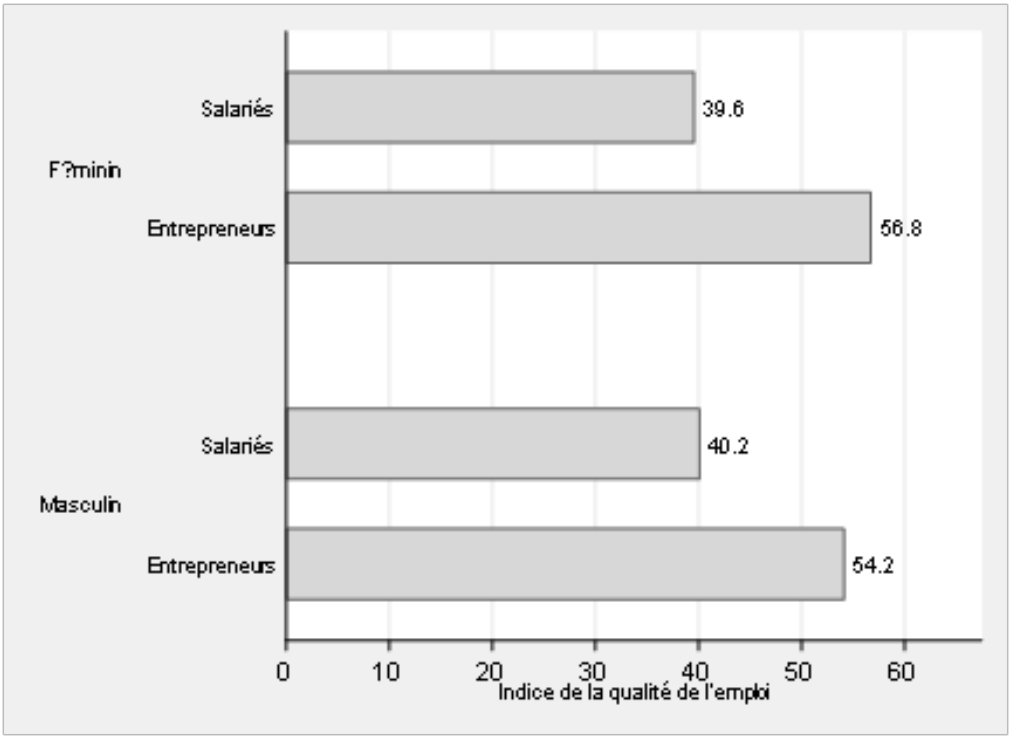
Figure 7: Average job-quality index by sector of activity



Notes: *Femme*=Female; *Homme*=Male; *Agriculture, élevage, pêche, chasse*=agriculture, livestock, fishing, hunting; *Industrie*=Industry; *Commerce*=Trade; *Services*=Services; *Indice de la qualité de l'emploi*=job-quality index.
Source: Compiled by the authors based on the *EPAE* survey.

Figure 8 shows the distribution of the job-quality index according to young people's employment status. It shows that entrepreneurship offers better job prospects to young people than salaried employment. Indeed, irrespective of their gender, self-employed young people scored higher in terms of job quality than young people working for a third party. This result has important policy implications, since it implies that promoting entrepreneurship among young men and young women could help combat the job insecurity faced by most young people on the Senegalese labour market.

Figure 8: The job-quality index rates by employment status



Notes: *Féminin*: Female; *Masculin*: Male; *Salariés*=salaried workers; *Entrepreneurs*=entrepreneurs/self-employed; *Indice de la qualité de l'emploi*=job-quality index.
Source: Compiled by the authors based on the *EPAE* survey.

Useful though they are, the results reported so far are inconclusive because they are based on an analysis that is descriptive in nature. Besides, factors other than sector of activity and employment status may also influence job quality. That is why in the following paragraphs the effect of sector of activity on the quality of youth employment is discussed by taking into consideration several control variables.

Econometric analysis of the determinants of job quality

While correcting for potential selection bias, this section analyses the results of the model that seeks to identify the sectors of activity offering most quality jobs to young people.

We first tested for the presence of selection bias based on the level of statistical significance of the Inverse Mills Ratio (IMR). To this end, estimations were done separately for young men and for young women. The results show that the coefficient associated with the Inverse Mills Ratio was not significant (see Table A1 in the appendix), which means that there was no selection bias. Consequently, we estimated the econometric models using the OLS method. To take account of a possible serial correlation in the different communities surveyed, we used standard deviations that were robust to heteroscedasticity and to the cluster structure at the departmental level.

Table 7: Estimations of the determinants of job quality

Variables	Young Women	Young Men
Sectors of Activity		
Agriculture	32.07***	53.30***
Industry	39.40***	49.97***
Trade	51.12***	53.57***
Services	43.36***	49.02***
Employment Status		
Entrepreneurs/self-employed	-4.422*	-8.672*
Salaried workers	8.080**	3.114
Age in Levels and Squared		
Age	-1.701	-0.265
Age squared	0.0256	-0.00232
Household size	-0.0238	0.169
Education level		
Secondary 1	3.168	3.210*
Secondary 2	0.854	0.0372
Higher	-1.896	-2.446
Knowledge of Wolof		
Basic	-3.717	-0.865
Good	-3.240	-0.199
Knowledge of French		
Basic	--	7.510*
Good	2.111	7.237*
Knowledge of English		
Basic	-0.331	-0.876
Good	0.316	-1.227
Activist of a political party	3.276*	-1.221
Constant	33.46	4.955
No. of observations	969	1295
R2	0.804	0.756

Notes: The symbols *, ** and *** represent statistical significance thresholds at 10%, 5%, and 1%, respectively. The standard deviations have been corrected for heteroscedasticity and adjusted for cluster effects at the departmental level.
Source: Calculated by the authors based on data from the *EPAE* survey.

Table 7 indicates that the trade sector offered better employment opportunities for young women than the other sectors. That is, young women working in this sector were more likely to have high-quality jobs. The services and the industrial sectors came second and third, respectively, in terms of offering young women high-quality jobs. It is in the agricultural sector that young women were more likely to be offered low-quality jobs. On the other hand, agriculture was the second sector to offer high-

quality jobs to young men. The other two after agriculture were the industrial and the services sectors.

Regarding employment status, the results indicate that young people who were self-employed (that is, entrepreneurs) had better-quality jobs than those employed by a third party. However, this result was only significant for young women. For its part, age (in levels and squared) did not have a significant impact on job quality, regardless of gender: there was no significant difference in job quality between young people and their older counterparts.

In the case of young women, while those of them who were active in a political party were more likely to have a high-quality job, neither their education level nor their level of knowledge of Wolof, French, or English were determinants of job quality. On the other hand, in the case of young men, those of them who were fluent in French and those who had attained a secondary-1 education level were more likely to get a high-quality job. Unlike in the case of young women, young men's political involvement had no significant effect on their getting a high-quality job or not.

Overall, the results indicate that the determinants of getting high-quality jobs were not the same for young men and for young women: unlike for young men, young women in the trade sector, those who were self-employed, and those who were active in political parties were more likely to get high-quality jobs.

Impact of employment support programmes on youth employment quality: The case of the National State-Employer Agreement

This section first presents descriptive statistics on the characteristics and profile of the young people who benefited from the National State-Employer Agreement (*CNEE*). It then presents the determinants of participation in employment support programmes using a binary logit model. Finally, using the propensity score matching method it presents the results of the impact of the National State-Employer Agreement programmes on employment quality.

Descriptive statistics on participation in the various programmes under the "National State-Employer Agreement"

Table 8 presents the statistical analyses related to the profile of the beneficiaries of the employment support programmes. Senegal has a number of public employment promotion structures, among which are the following: the Vocational Training Office (*Office de Formation Professionnelle*), created in 1986; the National Bureau for the Promotion of Youth Employment (*Agence Nationale Pour la Promotion de l'Emploi des Jeunes*), created in 2014; the National Bureau for Agricultural Integration and Development (*Agence Nationale d'Insertion et de Développement Agricole*), created in 2012; the Community Agricultural Areas Programme (*Programme des Domaines*

Agricoles Communautaires), created in 2014; the Vocational and Technical Training Fund (*Fonds de Financement de la Formation Professionnelle et Technique*), created in 2014; the Devolution of Rapid Entrepreneurship Office (*Délégation de l'Entrepreneuriat Rapide*), created in 2017; the Senegal Youth Entrepreneurship Programme (*Programme Sénégalais Pour l'Entrepreneuriat des Jeunes*), which came into effect in 2000; and the National State-Employer Agreement (*Convention Nationale État-Employeur, CNEE*), created in 1987 (Kane et al., 2019). Although all these employment promotion structures exist in Senegal, the present study focuses only on the National State-Employer Agreement (*CNEE*), which is one of the oldest employment policy instruments first signed in 1987, then renewed in 2000 and again in 2009.

This agreement is an effective public-private partnership framework for ensuring active and regular promotion of youth employment. Its goal is to promote the competitiveness of the national economy through the empowerment of human resources. This empowerment involves offering young people apprenticeships and practical training in companies or in private educational establishments in order to produce a qualified labour force in the short and the medium term and at a low cost. As policy instrument, the National State-Employer Agreement revolves around four programmes: the internship and apprenticeship programme, the solidarity contract programme, the spin-off contract programme, and the human resources financing programme.

The "internship and apprenticeship contract" programme aims to facilitate the integration of young people into the Senegalese labour market through training, apprenticeship, or re-training, leading to a qualification that meets labour market requirements. This programme comprises several training modules: First, there is the apprenticeship internship, which provides young people aged between 17 and 25 with full in-company vocational training allowing the trainees to move from one centre to another. Designed to run for a period of one to four years, this training is generally meant for young people aged 17 to 35 who hold a BEFM (Brevet de fin d'études moyennes [*Certificate of junior secondary school*]), or a *CAP* (*Certificat d'Aptitude Professionnelle* [Vocational training certificate]), or a BAC (*Baccalauréat* [school-leaving certificate], or a *BEP* (*Brevet d'études Professionnelles* [Technical school certificate]). Second, there is the *adaptation internship*, which is a re-training course designed to give young people aged 18–35, who already hold a bachelor's degree, or a *DUT* (*Diplôme Universitaire de Technologie* [a two-year, post-high-school qualification, from a technical college]), or another equivalent technical diploma, an internship of six months to two years to acquire professional experience so as to increase their employability opportunities. Third, there is the *incubation internship*, which enables young people aged between 25 and 45, already with a certificate of higher education or technical and vocational education, to acquire professional experience through practical training for six months to two years in a company.

The "solidarity contract" programme is a teaching internship contract that allows private educational institutions to develop their own quality human resources. It enables young trainee teachers to find jobs at these private educational institutions

after theoretical and practical training. For its part, the "spin-off contract" programme is one that enables qualified workers aspiring to self-employment to create a business or take over one with financial assistance from the government. It is an SME human resources financing programme which enhances the growth potential of micro-, small-, and medium-sized enterprises by helping them to have quality human resources.

Across all those programmes, 49% of the beneficiaries must be young men and 51% young women, with an average age of 30 (see Table 8). This reflects Senegalese Government's observance of gender parity in its job-search support programmes, which is key to reducing gender inequality on the labour market. Note, though, that participation in job-search support programmes is not homogenous across all areas of residence: more than 71% of the programme beneficiaries live in Dakar, about 15% of them live in Pikine, about 9% of them in Guédiawaye, while less than 5% of them live in Rufisque. These figures mirror those of the non-beneficiaries of those programmes. Although these statistics suggest Dakar's inhabitants are more likely to benefit from employment support programmes than those of the other districts surveyed, this apparent imbalance is attributable to the proximity of the agencies responsible for employment promotion and to the population density and economic concentration in the capital city.

The applicants to youth employment promotion programmes often come from large households, with an average of 7-8 people in the household. They are children of senior managers (7-27%), of middle managers (20-30%), or of skilled workers (24-27%). Most of them are single (61%). A notable finding is the high proportion of applicants with a higher education level: 10% with a *BTS* (*Brevet de Technicien Supérieur* [post-high-school vocational training certificate]) and a *DUT*, 35% with a bachelor's degree, and 40% with a master's degree. This proportion is followed by that of applicants with secondary and primary education, regardless of the type of training applied for.

Table 8: Descriptive statistics for the different variables related to young people's participation in employment support programmes

Variables	Specification of the Variables	Employment support				Programme offered									
		Beneficiaries		Non-Beneficiaries		Solidarity Contract		Apprenticeship Programme		Adaptation Internship		Incubation Internship		Spin-off Contract	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Gender	**Male**	0.4873	0.5002	0.4006	0.4902	0.447	0.497	0.4502	0.4977	0.4514	0.4978	0.4500	0.4977	0.4503	0.4977
	Female	0.5126	0.5002	0.5993	0.4902	0.5525	0.4974	0.5497	0.4977	0.5486	0.4978	0.5499	0.4976	0.5496	0.4976
Age	15-35 years	29.97	2.905	28.76	3.664	29.87	3.01	29.86	3.019	29.867	3.015	29.86	3.017	29.86	3.018
Health status	Very good	0.2871	0.4527	0.2980	0.4575	0.3008	4588	0.3028	0.4597	0.3030	0.4597	0.3032	0.4598	0.3027	0.4596
	Good	0.6372	0.4811	0.6213	0.4852	0.625	0.485	0.6221	0.4850	0.6217	0.4851	0.6220	0.4850	0.6224	0.4849
	Fairly good	0.0756	0.2646	0.0780	0.2684	0.074	0.261	0.0743	0.2624	0.0745	0.2628	0.0741	0.2620	0.0741	0.2621
	Bad	0	0	0.0026	0.0507	0.0007	0.026	0.0007	0.0261	0.0007	0.0261	0.0007	0.0260	0.0007	0.0260
Marital status	Married	0.3907	0.4883	0.3200	0.4666	0.384	0.486	0.38334	0.4864	0.3858	0.4869	0.3848	0.4867	0.3850	0.4867
	Single	0.6092	0.4883	0.6800	0.4663	0.6162	0.4865	0.6166	0.4864	0.6142	0.4869	0.6152	0.4867	0.6149	0.4868
Household size	No. of people	6.970	4.225	8.057	5.046	7.44	4.66	7.467	4.689	7.455	4.690	7.462	4.685	7.462	4.687
Highest educational certificate	No formal education	…	…	0.0470	0.2117	0.0196	0.1386	0.0193	0.1376	0.0194	0.1378	0.0192	0.1374	0.0193	0.1375
	CFEE	0.0084	0.0915	0.0569	0.2317	0.028	0.165	0.0276	0.1638	0.0277	0.1640	0.0275	0.1636	0.0275	0.1636
	BFEM	0.0225	0.1483	0.0814	0.2735	0.045	0.208	0.0448	0.2069	0.0449	0.2073	0.0447	0.2066	0.0447	0.2067
	CAP	0.0084	0.0915	0.0284	0.1663	0.021	0.143	0.02067	0.1423	0.0207	0.1426	0.0206	0.1421	0.0206	0.1422
	BAC	0.0829	0.2759	0.1688	0.3747	0.092	0.289	0.0937	0.2915	0.0934	0.2910	0.0941	0.2921	0.0935	0.2913
	DT	0.0084	0.0915	0.0112	0.1055	0.011	0.105	0.0110	0.1045	0.0110	0.1046	0.0109	0.1043	0.0110	0.1044
	BT	0.0155	0.1234	0.0185	0.1349	0.020	0.141	0.0199	0.1400	0.0200	0.1402	0.0199	0.1398	0.0199	0.1398
	BTS/DUT/DEUG	0.1053	0.3072	0.0735	0.2609	0.103	0.304	0.1047	0.3063	0.1051	0.3068	0.1045	0.3059	0.1045	0.3060
	Bachelor's	0.3455	0.4759	0.2819	0.4500	0.322	0.467	0.3225	0.4676	0.3209	0.4669	0.3223	0.4675	0.3225	0.4676
	Master's	0.4031	0.4909	0.2323	0.4224	0.338	0.473	0.3356	0.4723	0.3368	0.4728	0.3360	0.4725	0.3363	0.4726

continued next page

Table 8 Continued

Variables	Specification of the Variables	Employment support				Programme offered									
		Beneficiaries		Non-Beneficiaries		Solidarity Contract		Apprenticeship Programme		Adaptation Internship		Incubation Internship		Spin-off Contract	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Financial situation	Difficult	0.2297	0.4209	0.4484	0.4975	0.3167	0.4634	0.3192	0.4663	0.3194	0.4664	0.3188	0.4662	0.3184	0.4660
	Good	0.4466	0.4975	0.2922	0.4549	0.369	0.483	0.3690	0.4827	0.3700	0.4829	0.3698	0.4829	0.3700	0.4830
	Very good	0.3235	0.4681	0.2593	0.4384	0.315	0.465	0.3117	0.4633	0.3105	0.4629	0.3113	0.4632	0.3116	0.4633
Area of residence	Dakar	0.7157	0.4514	0.6026	0.4895	0.6397	0.4802	0.6330	0.4821	0.6333	0.4820	0.6315	0.4825	0.6319	0.4824
	Pikine	0.1498	0.3572	0.2142	0.4104	0.185	0.389	0.1909	0.3932	0.1895	0.3920	0.1910	0.3932	0.1905	0.3928
	Guédiawaye	0.0882	0.2838	0.1245	0.3303	0.1178	0.322	0.1186	0.3235	0.1197	0.3247	0.1196	0.3247	0.1197	0.3247
	Rufisque	0.0462	0.2101	0.0587	0.2351	0.0574	0.2323	0.0573	0.2324	0.0575	0.2328	0.0578	0.2334	0.0578	0.2335
Mother's socio-professional category	Senior manager	0.0677	0.2517	0.0344	0.1825	0.0505	0.2193	0.0492	0.2165	0.0492	0.2165	0.0490	0.2162	0.0491	0.2162
	Middle manager	0.2068	0.4057	0.1498	0.3572	0.2021	0.402	0.1989	0.3995	0.1988	0.3996	0.1984	0.3992	0.1983	0.3992
	Skilled employee	0.2744	0.4470	0.1761	0.3813	0.244	0.430	0.246	0.4310	0.2459	0.4310	0.2454	0.4308	0.2454	0.4308
	Labourer	0.0037	0.0613	0.0142	0.1183	0.013	0.112	0.012	0.1103	0.0123	0.1103	0.0123	0.1102	0.0123	0.1102
	Employer	0.0113	0.1058	0.0182	0.1339	0.015	0.120	0.014	0.1190	0.0143	0.1190	0.0143	0.1189	0.0143	0.1189
	Self-employed	0.3647	0.4822	0.4919	0.5004	0.394	0.489	0.399	0.4903	0.4016	0.4907	0.4008	0.4906	0.4008	0.4906
	Family assistance	0.0714	0.2580	0.1154	0.3198	0.082	0.275	0.079	0.2714	0.0779	0.2682	0.0797	0.2713	0.0797	0.2712
Father's socio-professional category	Senior manager	0.2737	0.4463	0.1733	0.3787	0.2287	0.4202	0.2296	0.4507	0.2295	0.4207	0.2284	0.4200	0.2286	0.4202
	Middle manager	0.2998	0.4586	0.2029	0.4024	0.250	0.433	0.255	0.4362	0.2532	0.4350	0.2549	0.4360	0.2551	0.4362
	Skilled employee	0.2402	0.4276	0.2624	0.4401	0.252	0.434	0.249	0.4328	0.2502	0.4334	0.2509	0.4338	0.2502	0.4334
	Labourer	0.0205	0.1418	0.0327	0.1779	0.028	0.165	0.027	0.1609	0.0276	0.1639	0.0274	0.1635	0.0275	0.1636
	Employer	0.0167	0.1285	0.0257	0.1584	0.021	0.144	0.0207	0.1424	0.0207	0.1424	0.0206	0.1420	0.0206	0.1421
	Self-employed	0.1489	0.3564	0.2950	0.4563	0.218	0.413	0.216	0.4116	0.2157	0.4115	0.2147	0.4108	0.2149	0.4109
	Family assistance	0	0	0.0079	0.0887	0.003	0.055	0.0023	0.0543	0.0029	0.0543	0.0029	0.0542	0.0029	0.0542

continued next page

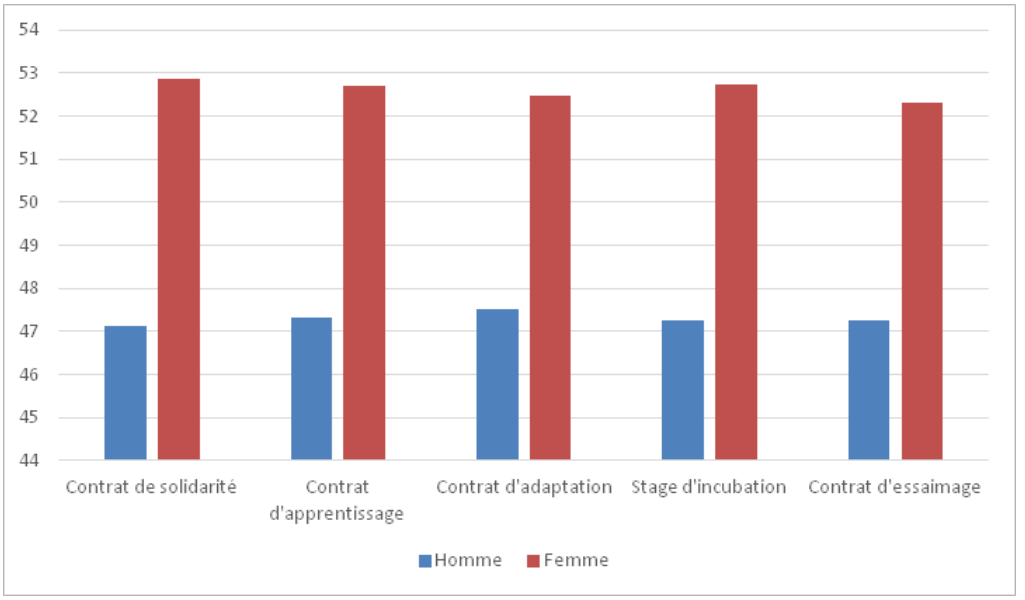
Table 8 Continued

Variables	Specification of the Variables	Employment support				Programme offered									
		Beneficiaries		Non-Beneficiaries		Solidarity Contract		Apprenticeship Programme		Adaptation Internship		Incubation Internship		Spin-off Contract	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Political activism	Yes	0.0630	0.2432	0.1125	0.3160	0.100	0.300	0.099	0.2996	0.0992	0.2990	0.0992	0.2991	0.0993	0.2992
	No	0.9370	0.2432	0.8875	0.3160	0.8996	0.3006	0.9004	0.2995	0.9008	0.2990	0.9007	0.2991	0.9006	0.2992
Sector of activity	Agriculture	0.0212	0.1442	0.0297	0.1699	0.0269	0.1618	0.0265	0.1606	0.1757	0.3807	0.0263	0.1603	0.0264	0.1603
	Industry	0.0713	0.2575	0.0773	0.2672	0.080	0.2723	0.079	0.2705	0.0786	0.2693	0.0791	0.2700	0.0791	0.2700
	Trade	0.1407	0.3480	0.2354	0.4245	0.176	0.381	0.175	0.3803	0.1758	0.3807	0.1744	0.3797	0.1744	0.3797
	Services	0.7668	0.4232	0.6575	0.4748	0.717	0.451	0.719	0.4497	0.7191	0.4497	0.7200	0.4492	0.7200	0.4492

Note: *CFEE = Certificat de Fin d'Etudes Elémentaires ; BAC=Baccalauréat ; CAP=Certificat d'aptitudes professionnelles ; BT= Brevet des Techniciens ; DT =Diplôme universitaire de technologie ; DEUG=Diplôme d'Etudes Universitaires Généralisé ; BFEM=Brevet de fin d'Etudes moyens.*

Figure 9 shows young people's participation in employment support programmes by gender. It shows that young women aged 18-35 benefited much more from the support of public employment services than young men. This predominance of young women in the programmes is an indication that the National State-Employer Agreement lays strong emphasis on gender balance in its provision for socio-professional integration.

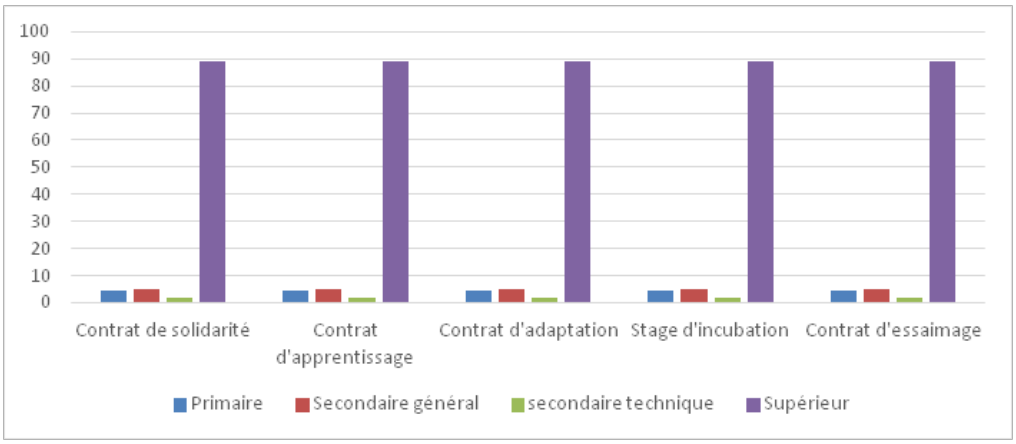
Figure 9: Young people's participation in employment support programmes by gender



Notes: *Contrat de solidarité*=Solidarity contract; *Contrat d'apprentissage*=Apprenticeship contract; *Contrat d'adaptation*=Adaptation contract; *Stage d'incubation*=Incubation internship; *Contrat d'essaimage*=Spin-off contract; *Homme*=Male; *Femme*=Female.

Although participating in employment support programmes does not require a minimum or maximum education level, young people with a higher education level were much more likely to do so. According to Figure 10 below, the higher their education level, the more likely they were to be involved in job search.

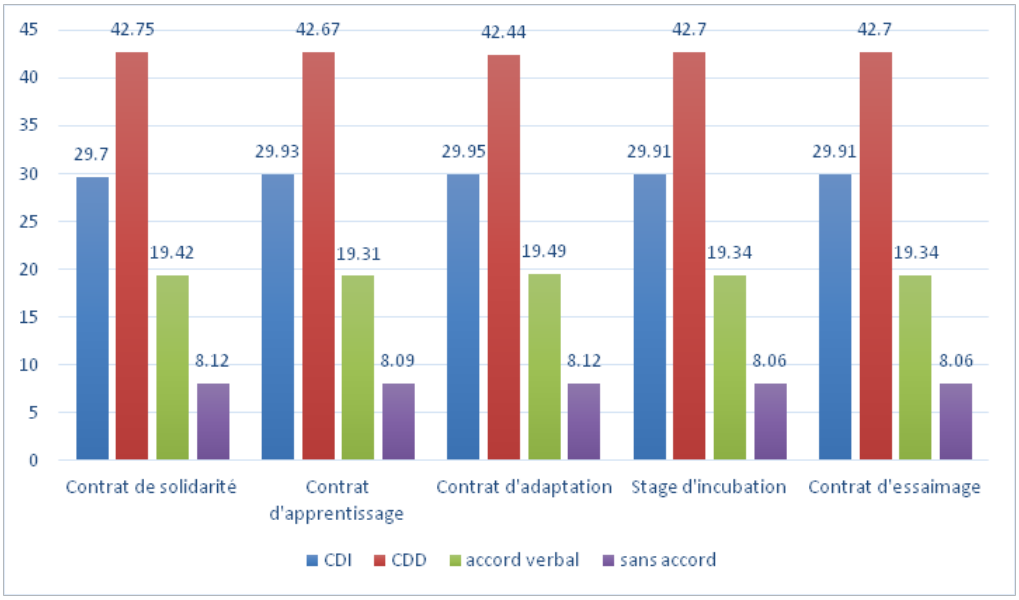
Figure 10: Young people's participation in employment support programmes by education level



Notes: *Contrat de solidarité*=Solidarity contract; *Contrat d'apprentissage*=Apprenticeship contract; *Contrat d'adaptation*=Adaptation contract; *Stage d'incubation*=Incubation internship; *Contrat d'essaimage*=Spin-off contract; *Primaire*=Primary school; *Secondaire général*=Secondary school (general); *Secondaire technique*=Secondary school (technical); *Supérieur*=Higher education.

Figure 11 shows that participation in employment support programmes enabled its beneficiaries to have a stable job. Indeed, regardless of the programme offered by the National State-Employer Agreement, 30% of the beneficiaries were given an open-ended contract, more than 42% a fixed-term contract, 19% a verbal contract, while only 8% of them worked without a contract. So, it can be deduced from Figure 11 that the different employment support programmes enable young people to gain practical experience and to have work experience that facilitates their access to stable employment.

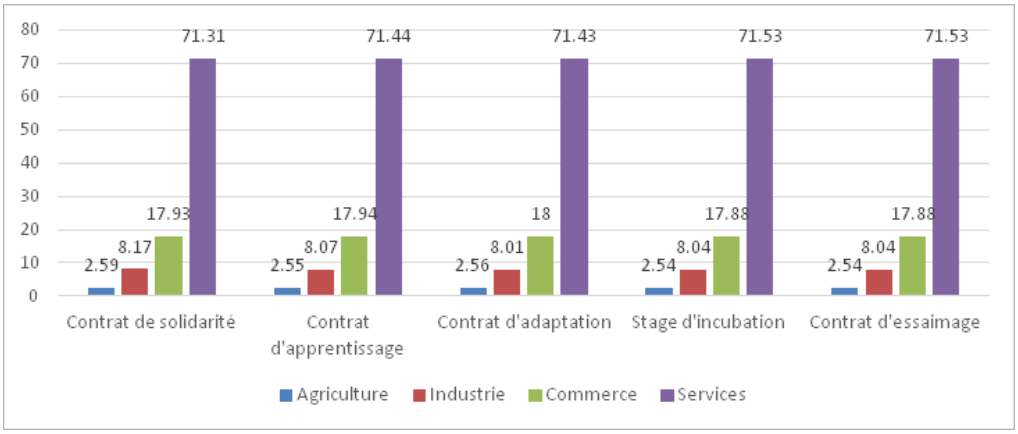
Figure 11: Employment support programmes and employment stability



Notes: *Contrat de solidarité*=Solidarity contract; *Contrat d'apprentissage*=Apprenticeship contract; *Contrat d'adaptation*=Adaptation contract; *Stage d'incubation*=Incubation internship; *Contrat d'essaimage*=Spin-off contract; *CDI*=With an open-ended contract; *CDD*=With a fixed-term contract; *accord verbal*=With a verbal contract; *sans accord*=Without a contract.

Figure 12 shows that participation in employment support programmes enabled 71% of its beneficiaries to have a job in the service sector, 8% of them in the industrial sector, nearly 18% of them in the trade sector, and less than 3% in the agricultural and livestock sector. So, it can be deduced from Figure 12 that the employment support programmes implemented under the National State-Employer Agreement are effective in terms of integrating young people into the various sectors of economic activity that provide employment in Senegal.

Figure 12: Employment support programmes and sectors of activity



Notes: *Contrat de solidarité*=Solidarity contract; *Contrat d'apprentissage*=Apprenticeship contract; *Contrat d'adaptation*=Adaptation contract; *Stage d'incubation*=Incubation internship; *Contrat d'essaimage*=Spin-off contract; *Agriculture*=Agriculture; *Industry*=Industry; *Commerce*=Trade; *Services*=Services.

Determinants of participation in employment support programmes

Table 9 presents the results of the calculation of the propensity scores obtained from the logit model, conditional on the matching variables. It can be seen that the pseudo R^2 is quite high (18.99%), while the LR (chi2) of 187.23, which is significant at the 1% threshold, means that, overall the model is adjusted and at least one of the explanatory variables explains young people's participation in an employment support programme under the National State-Employer Agreement (*CNEE*). Even if the results of the logit estimation are not relevant for the present study's objective of estimating the impact of employment support programmes on job quality, some conclusions can be drawn from them: the positive sign of the coefficients associated with variables such as gender, age, age squared, household size, education level, area of residence, parents' socio-professional category, and sector of activity, implies that these variables influence the participation of the young people who are likely to belong to the treatment group (that is, the beneficiaries of the programme). By the same token, the variables with a negative sign, namely political activism, marital status, and financial situation, are less likely to influence the participation of the young people in the treatment group.

The present study found that young men were more likely to participate in employment support programmes than young women. Age was also found to be an important factor in participating in the different programmes. These findings are in line with those reported by Kane et al. (2020) showing that women were marginalized in the enrolment in public employment programmes in Senegal. Our study further found that the probability of being a beneficiary of those programmes increased and then decreased with age, suggesting that younger people were more likely to benefit from them.

Young people's educational level and their parents' socio-professional category strongly influenced the probability of them participating in the *CNEE* programmes: those young people with a higher education level and those whose parents were managers or skilled employees were more likely to enrol than those with a lower education level and those whose parents were labourers or self-employed.

It should be noted, however, that the propensity scores estimated in this way make it possible to carry out matching that guarantees comparability between the beneficiaries and the non-beneficiaries of the *CNEE* employment support programmes.

Table 9: Determinants of participation in the different programmes under the National State-Employer Agreement (CNEE)

Variables	Specification of the Variables	Employment Support		Type of programme which the beneficiaries participated in									
				Solidarity Contract		Apprenticeship Internship		Adaptation Internship		Incubation Internship		Spin-off Contract	
		Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Gender	Male	0.4148**	0.1843	0.3500*	0.1923	0.3079	0.1952	0.3551*	0.1949	0.3215*	0.1956	0.3215*	0.1956
Age	Age	27.35***	10.13	35.73***	7.34	36.95***	7.442	37.01***	7.435	36.87***	7.435	36.87***	7.435
	Age-squared	-3.68***	1.439	-4.61***	1.015	-4.79***	1.030	-4.79***	1.029	-4.78***	1.029	-4.77***	1.029
Marital status	Married	-0.1008	0.2005	-0.0169	0.2126	-0.1190	0.2160	-0.1101	0.2157	-0.0938	0.2166	-0.0938	0.2166
Household size	Size	1.145**	0.4859	0.8006*	0.4419	0.7366*	0.4456	0.7347*	0.4448	0.7698*	0.4456	0.7698*	0.4456
	Size-squared	-0.440***	0.1509	-0.2636**	0.1298	-0.2403*	0.1309	-0.2472*	0.1308	-0.2509	0.1310	-0.2509*	0.1310
Education level	CFEE	15.13	3888.5	0.3232	0.6861	0.2787	0.6853	0.2810	0.6854	0.2899	0.6849	0.2899	0.6849
	BFEM	16.41	3888.4	0.9838	0.6594	10.017	0.6596	10.011	0.6596	10.020	0.6595	10.022	0.6595
	CAP	16.00	3888.4	1.496*	0.7663	1.463*	0.7689	1.510*	0.7716	1.470*	0.7686	1.470*	0.7686
	BAC	17.37	3888.4	1.014*	0.5972	1.087*	0.5977	1.070	0.5974	1.092*	0.5977	1.092*	0.5977
	DT	17.00	3888.4	1.724*	1.071	1.631	1.070	1.658	1.072	1.661	1.071	1.661	10.071
	BT	16.60	3888.4	1.363*	0.8101	1.329*	0.8098	1.306*	0.8097	1.325*	0.8101	1.324*	0.8101
	BTS	17.65	3888.5	1.798***	0.6269	2.074***	0.6399	2.060***	0.6397	2.078***	0.6399	2.078***	0.6399
	Bachelor's	17.76	3888.5	1.646***	0.5804	1.757***	0.5819	1.723***	0.5818	1.764***	0.5820	1.763***	0.5820
	Master's	17.97	3888.4	1.960***	0.5867	1.907***	0.5867	1.905***	0.5868	1.947***	0.5873	1.947***	0.5873
Financial situation	Difficult	-0.1661	0.2377	-0.5012**	0.2407	-0.4432*	0.2442	-0.4533*	0.2443	-0.476*	0.2451	-0.4766*	0.2451
	Good	0.1877	0.2086	-0.3935*	0.2293	-0.3481	0.2327	-0.3729*	0.2326	-0.3814*	0.2339	-0.3814*	0.2339
Area of residence	Dakar	0.2749	0.5063	-0.0374	0.4991	-0.2782	0.5222	-0.2929	0.5230	-0.2692	0.5225	-0.2692	0.5225
	Pikine	-0.1968	0.5436	-0.3540	0.5232	-0.3303	0.5468	-0.3188	0.5478	-0.3357	0.5471	-0.3357	0.5471
	Guédiawaye	0.5507	0.5626	0.4309	0.5612	0.3674	0.5867	0.3740	0.5878	0.3618	0.5872	0.3618	0.5872
Mother's socio-professional category	Senior manager	0.6967	0.5050	0.5768	0.5213	0.4707	0.5179	0.5106	0.5169	0.4693	0.5189	0.4698	0.5189
	Middle manager	0.1222	0.3697	0.668*	0.3559	0.6365*	0.3564	0.6984*	0.3556	0.6398*	0.3570	0.6398*	0.3570
	Skilled employee	0.5715*	0.3545	0.575*	0.3299	0.6532**	0.3322	0.7038**	0.3313	0.651*	0.3328	0.6509*	0.3328
	Employer	0.3470	0.9140	0.7945	0.9348	0.8527	0.9362	0.9222	0.9465	0.8540	0.9420	0.8540	0.9420
	Self-employed	0.5322	0.3345	0.3468	0.2879	0.3761	0.2878	0.4195	0.2870	0.3951	0.2884	0.3951	0.2884

continued next page

Table 9 Continued

Variables	Specification of the Variables	Employment Support		Type of programme which the beneficiaries participated in									
				Solidarity Contract		Apprenticeship Internship		Adaptation Internship		Incubation Internship		Spin-off Contract	
		Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Father's socio-professional category	Senior manager	17.76	3888	2.007	1.221	2.112*	1.221	2.085*	1.221	2.115*	1.223	2.115*	1.223
	Middle manager	17.61	3888	2.021*	1.219	2.044*	1.220	1.980*	1.219	2.045*	1.221	2.046*	1.221
	Skilled employee	17.69	3888	2.015*	1.220	1.999*	1.221	2.006*	1.220	2.044*	1.222	2.044*	1.222
	Labourer	16.95	3888	2.015	1.35	1.880	1.346	1.495	1.336	1.897	1.348	1.897	1.348
	Employer	18.32	3888	2.758*	1.43	2.766*	1.428	2.733*	1.428	2.777*	1.431	2.777*	1.431
	Self-employed	16.86	3888	1.929	1.22	1.902	1.222	1.879	1.221	1.909	1.223	1.909	1.223
Political activism	Yes	-0.616*	0.3561	-0.0698	0.2912	-0.1578	0.2928	-0.1618	0.2926	-0.1650	0.2930	-0.165	0.2930
	Agriculture	1.095	0.7988	0.3785	0.7609	0.4125	0.7651	0.3878	0.7652	0.4098	0.7662	0.4098	0.7662
Sector of activity	Industry	0.4700	0.4700	10.148**	0.5223	10.157**	0.5278	10.165**	0.5297	10.146**	0.5293	10.146**	0.5293
	Trade	0.3101	0.2953	0.2590	0.2984	0.3320	0.3004	0.3094	0.3009	0.3094	0.3011	0.3094	0.3011
	Services	0.7754	0.2055	0.1285	0.2085	0.3114	0.2099	0.2593	0.2102	0.2873	0.2106	0.2873	0.2106
Constant	Cons	-87.58	37.27	-71.6***	13.39	-73.6***	13.57	-73.6***	13.56	-73.4***	13.56	-73.4***	13.56
LR Chi2		187.23		169.60		171.10		171.54		172.41		172.41	
Prob > chi^2		0.000		0.000		0.000		0.000		0.000		0.000	
Pseudo R^2		0.1899		0.1767		0.1808		0.1810		0.183		0.1825	
No. of observations		748		748		748		748		748		748	

Note: *, **, *** are significance levels at the 10%, 5%, and 1%, respectively. *CFEE = Certificat de Fin d'Etudes Elémentaires ; BAC=Baccalauréat ; CAP=Certificat d'aptitudes professionnelles ; BT= Brevet des Techniciens ; DT =Diplôme universitaire de technologie ; DEUG=Diplôme d'Etudes Universitaires Généralisé ; BFEM=Brevet de fin d'Etudes moyens.*

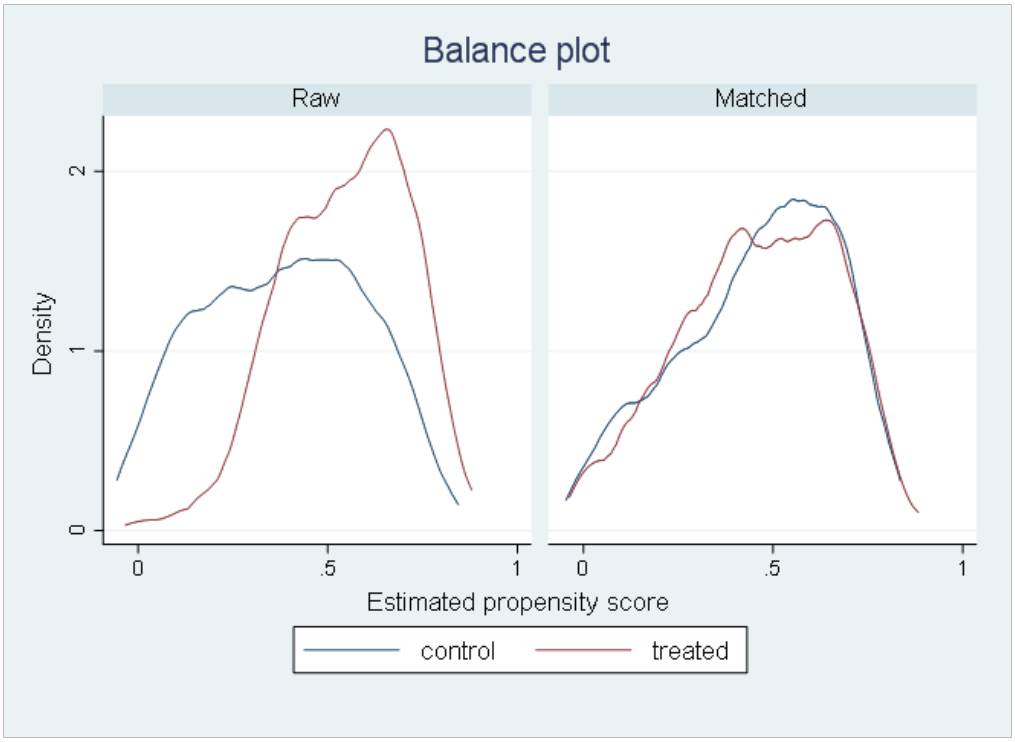
Results of the impact of employment support programmes on job quality

To assess this impact, we calculated the individual probability of receiving treatment (that is of benefiting from an employment support programme). Figure A1 (in the appendix) reports the results of the computation of the propensity scores by treatment status. It displays the common support with an overlay of the probabilities of the treated and the untreated. The figure shows a loss of 11 on the treated subjects, corresponding to 5.34% of the young people who benefited from an employment support programme. The propensity score computed in this way makes it to estimate the treatment effect, that is, the impact of employment support programmes on job quality. With the equilibrium (i.e., balancing) condition being satisfied, there is similarity between the matched units, meaning that there is no difference between the treated and the untreated subjects after conditioning on the propensity score.

Figure A2 (in the appendix) shows that there was a considerable decrease in the standardized bias before and after the matching. According to this figure, while there were no significant differences before and after matching between the means of the explanatory variables for the young people who participated in public employment programmes, there were significant differences before and after matching between the means of the explanatory variables for the young people who did not. This points to the presence of selection bias which, when comparing the beneficiaries and the non-beneficiaries, decreased on average from 16.6% before matching to 7.1% after matching. Furthermore, the maximum likelihood p-values (0.000) indicate the significance of the model after matching, while the pseudo-R^2 indicates the level of performance of the logit model. The value of this pseudo-R^2 fell from 16.9% before matching to about 5.9% after matching, thus confirming that after matching there was no significant difference in the distribution of the two groups of young people (the beneficiaries and the non-beneficiaries). The low level of pseudo-R^2 (0.059), the low level of average bias (7.1), the high level of bias reduction (53.6), and the non-significance of the maximum likelihood after matching, all indicate that the estimation of the propensity score enabled the balancing of the distribution of covariance between the young men and young women who participated in the employment support programmes and those who did not.

Figure 13 shows that there were significant differences before matching between the young people who participated in employment support programmes and those who did not. However, after matching, the curves representing the two groups are close, suggesting that the group of young people who participated in the employment support programmes (the treatment group) and that of those who did not (the control group) were comparable. This means that the matching made the two groups of young people comparable.

Figure 13: Job-quality density curve before and after matching



After calculating the propensity scores, we applied the nearest neighbour, the Radius, and the Kernel matching algorithms. Table 10 reports the results of the average treatment effect, that is, the impact of the employment support programmes on job quality for their beneficiaries. Overall, whatever the matching method applied, the results show that participation in these programmes had a beneficial effect on the professional integration of young men and young women. In other words, this participation had a positive and significant impact on getting a quality job. This impact varied between 3.5% and 4.5% depending on the matching algorithm used. In other words, the beneficiaries of the employment support programmes (under the *CNEE*) had a 3.5% to 4.5% higher chance of getting high-quality jobs than the non-beneficiaries.

The impact of the *CNEE* programmes on job quality was highest in the service sectors (5.3%) and in the industry sector (16.82%). A gender-based analysis reveals that participation in those programmes had a positive and significant impact on access to quality jobs for both young men and young women. But this impact was greater for the former than for the latter, regardless of the matching method used: indeed, participation in the *CNEE* programmes increased the probability of getting high-quality jobs by about 3.5% to 6.96% for young men and by about 2.23% to 5.54% for young women. These findings are consistent with those reported by Kane et al. (2020), who found that participation in employment promotion programmes increased the chances of finding regular and stable jobs.

Table 10: Estimated impact of employment support programmes

Type of Employment Support Programme	Treatment Effect: ATT						
	Overall	Gender		Sector of Activity			
		Male	Female	Agriculture	Industry	Trade	Services
Nearest neighbour	3.507** (2.071)	5.413** (3.091)	5.541** (2.762)	14.471 (18.335)	16.817** (10.166)	0.813 (4.627)	5.288*** (2.202)
Kernel	3.537*** (1.652)	5.545** (2.488)	2.965 (2.228)	…	11.227 (8.084)	2.927 (3.988)	3.284*** (1.737)
Radius	4.487***	6.958***	5.110**	…	8.542	2.509	5.052***
	(1.664)	(2.582)	(2.349)		(9.527)	(4.603)	(1.893)

Note: *, **, *** are significance levels at the 10%, 5%, and 1%, respectively.

We also estimated the impact of each type of programme on the quality of employment obtained by the beneficiaries of the employment support programmes (see Table 11). Firstly, in relation to the "solidarity contract", which is a pedagogical internship programme in private educational institutions, the effect on job quality was both positive and significant: the beneficiaries of this type of programme were found to be between 4% and 6% more likely to get high-quality jobs than the non-beneficiaries. On the other hand, the young men beneficiaries of it were more likely (6-8%) than their female counterparts (3-6%) to have a high-quality job. This means that the "solidarity contract" programme, which can be considered an educational and incubation internship for future officials in charge of higher education, is an effective one, as it enables its beneficiaries, at the end of their training, to access high-quality jobs that will allow them to contribute to the country's economic and social development. This observation is in line with that made by Kouakou (2011) and Svabova and Durica (2017), who found that employment support schemes were effective in terms of integration and access to employment depending on the modalities of implementation of the relevant programmes.

Secondly, the "apprenticeship internship", which is a methodical and comprehensive vocational training programme in a company allowing trainees to move from one centre to another, had a positive and significant impact on the quality of employment for its beneficiaries. Compared to the non-beneficiaries, the beneficiaries increased their chances of getting a high-quality job by 4.5% to 7.2%. This increase was 6.6% to 7.2% for young men and 6.75% for young women. The probability of these high-quality jobs being found in the industrial sector was 27%. The apprenticeship internship thus enabled young men and young women to access regular and stable jobs with social security and a contract. Although the apprenticeship internship does not always lead to full integration of its beneficiaries, it does enable them to get higher-quality jobs than those of the non-beneficiaries. This result corroborates that found by Kluve et al. (2019), showing that employment support programmes produced positive effects.

Thirdly, the "adaptation internship", which is a work experience gaining programme, increased the chances of its beneficiaries getting high-quality jobs compared to the non-beneficiaries by 4.8% to 7.2%. Young men participating in this programme had higher chances (about 6.6% to 7.2%) of getting a high-quality job than young women (on average 3.7% to 6.8%). The probability of these high-quality jobs being found in the industrial sector was 27%, while that of them being found in the services sector was 3% to 4%. This adaptation internship programme, which offers its beneficiaries the opportunity to gain practical experience, increased their chances of getting high-quality salaried jobs in the industrial and the service sectors. This finding is in line with that made by a study by Jensen (2012) in the case of India, who reported that intermediation programmes that brought together recruitment services and job seekers had a positive impact on employability and future earnings.

Fourthly, the "incubation internship", which is a programme designed to develop the supervision skills of its beneficiaries, increased their chances of getting high-quality jobs from 4% to 7.2%. This increase was from 6% to 7.2% for young men and from 4% to 6.8% for young women. The probability of these high-quality jobs being found in the industrial sector was 27%, while that of them being found in the services sector was 3.5%. This observation is similar to that made by Franklin (2015), that employment support programmes in terms of training, intermediation, guidance, and financial support, had positive effects on the employability of young people seeking jobs in Ethiopia.

Fifthly, the "spin-off contract", which is a training and guidance programme for individuals aiming to start a business, had a positive and significant impact on job quality at the 1% level. Indeed, young people aiming to be self-employed and who participated in this type of programme were, on average, 5.5% to 7.2% more likely to get high-quality jobs than those who did not participate in it. Moreover, young men beneficiaries of it had a higher probability (6.5% to 7.2%) of getting quality jobs than young women beneficiaries (4% to 6.8%). As part of this programme, the young people sponsored by firms developed a synergy between the sponsoring firm and their own businesses they were starting, which enabled them to have high-quality independent jobs than those who were not sponsored by any firm. This sponsoring increased their chances of having high-quality jobs in the industrial, the trade, and the services sectors by 27%, 11.6%, and 3.5%, respectively. These observations are consistent with those made by Card et al. (2018), that is, employment support policies in terms of strengthening young people's motivation, improving their entrepreneurial capacity, and offering them financial support, had an indirect impact on their employment through enterprise creation and self-employment.

Table 11: Estimations of the impact of the different programme types offered under the *CNEE*

Type of Employment Support Programme	Matching Technique	Treatment Effect: ATT						
		Overall	Gender		Sector of Activity			
			Male	Female	Agri-culture	Industry	Trade	Services
Solidarity contract	Nearest Neighbour	4.039** (2.223)	5.923** (3.456)	6.049* (3.446)	22.089 (15.535)	27.78*** (13.685)	4.764 (5.181)	1.497 (2.040)
	Kernel	4.408*** (2.045)	6.714*** (3.308)	3.113 (2.685)	19.985 (17.27)	31.33** (17.229)	7.8506 (6.577)	1.771 (2.007)
	Radius	6.240*** (0.788)	6.947*** (1.177)	5.171*** (1.078)	22.09*** (8.066)	27.768*** (2.946)	10.069*** (1.918)	2.815**** (0.913)
Apprenticeship internship	Nearest Neighbour	5.653*** (2.7033)	8.216* (4.183)	4.117 (2.762)	16.346 (22.012)	27.024* (13.70)	4.581 (5.174)	3.762 (2.746)
	Kernel	4.537*** (2.096)	6.602* (3.472)	3.756 (2.710)	16.346 (22.012)	27.28 (18.801)	9.269 (6.793)	1.906 (2.029)
	Radius	7.223*** (0.7785)	6.755*** (1.163)	6.755*** (1.057)	27.495 (18.13)	27.024*** 3.042)	3.004 (7.262)	1.985 (2.502)
Adaptation internship	Nearest Neighbour	6.268*** (2.61)	7.160*** (3.019)	6.643*** (2.256)	16.346 (22.012)	27.024* (13.705)	11.891 (8.298)	3.608* (1.847)
	Kernel	4.847*** (2.067)	6.928*** (3.478)	3.737 (2.630)	16.35 (22.012)	27.292 (18.92)	7.996 (6.562)	2.380 (1.994)
	Radius	7.204*** (.783)	7.160*** (1.163)	6.643*** (1.069)	27.495 (18.124)	27.024*** (3.042)	7.869 (6.736)	3.608*** (.9076)
Incubation internship	Nearest Neighbour	6.355*** (2.786)	7.160*** (3.018)	6.798*** (2.295)	16.347 (22.012)	27.024 (13.705)	4.519 (5.172)	3.460** (1.877)
	Kernel	4.485*** (2.086)	6.653* (3.472)	3.740 (2.668)	16.346 (22.012)	27.417 (18.498)	9.947 (6.965)	1.827 (2.024)
	Radius	7.223*** (0.778)	7.160*** (1.163)	6.798*** (1.056)	27.495 (18.124)	27.023*** (3.043)	4.398 (6.784)	3.460*** (.8938)
Spin-off contract	Nearest Neighbour	6.354*** (2.786)	7.160*** (3.018)	6.798*** (2.295)	16.346 (22.013)	27.024** (13.705)	11.614** (4.082)	3.460* (1.876)
	Kernel	4.484*** (2.085)	6.653* (3.471)	3.615 (2.690)	16.35 (22.012)	27.417 (18.498)	9.947 (6.965)	1.947 (2.0165)
	Radius	7.223*** (0.7785)	7.160*** (1.163)	6.798*** (1.055)	27.495 (18.124)	27.024*** (3.042)	11.614*** (1.937)	3.460*** (.8938)

Note: *, **, *** are significance levels at the 10%, 5%, and 1%, respectively.

6. Conclusion

Our general objective in the present study was to assess the impact of the employment support programmes offered under the National State-Employer Agreement (*CNEE*) on the quality of employment which young men and young women could get in sectors of activity that have a high capacity for job creation in Senegal. To achieve this objective, we followed four steps: first, we identified the sectors of activity which employed young people most. Second, we analysed the quality of jobs held by young people in these very sectors. Third, we determined the sectors of activity that were likely than others to offer quality jobs to young people on the labour market. Finally, using the propensity score matching method, we assessed the impact of employment support programmes on young people's access to those sectors of activity that offered quality jobs.

From the results of the study, we found that young people were most employed in the agricultural, the trade, and the industrial sectors, respectively. The industrial and services sectors were found to be the leading sectors in terms of offering quality jobs to the young people who participated in the employment support programmes organized under the National State-Employer Convention (*CNEE*). These are programmes designed to promote youth employment in Senegal by enabling their beneficiaries to access quality employment. We also found that the young people who participated in those programmes significantly increased their chances of accessing high-quality jobs by 3.5% to 5.4%, compared to those who did not. For example, the probability of the beneficiaries of those programmes accessing quality jobs increased from 5.28% to 16.8% in the services and the industrial sectors, compared to that of the non-beneficiaries. Clearly, these two sectors are the ones that offer quality jobs to the beneficiaries of the employment support programmes implemented under the National State-Employer Agreement.

Specifically, the *apprenticeship internship*, which is a full vocational training programme in a company but allowing the trainees to move from one centre to another, was found to have enabled young people to access skilled jobs in the industrial sector. Participation in this training programme increased the chances of its beneficiaries having high-quality jobs by 4.5% to 7.2%, compared to those of the non-beneficiaries. The *solidarity contract*, which is a pedagogical programme offering pedagogical and incubation internships in private higher-education institutions, enabled its beneficiaries aspiring to become teachers to increase their probability of accessing quality jobs by an average of 4% to 6%, compared to the non-beneficiaries. The *adaptation internship*, which is a work experience gaining

programme, increased the probability of its beneficiaries of accessing high-quality jobs in the industrial sector. This probability was 6% to 7.2% for young men and 3.7% to 6.8% for young women. The *spin-off contract,* which is a training and guidance programme for young people aiming to start their own enterprises, enabled its beneficiaries to create high-quality self-employment in the industrial and the services sectors. Young men aiming to be self-employed and who participated in this programme had a 6.5% to 7.2% higher chance of creating high-quality jobs than those who did not, while young women who participated in the programme had a 4% to 6.8% higher chance of doing so than those who did not. There is heterogeneity between the different types of programmes, which is due to the specificity of each programme and its goal in terms of enabling the youth to be integrated in the job market.

The findings reported above are likely to encourage the continuation of the activities of the National State-Employer Agreement (*CNEE*) in favour of young people in Senegal. Although they do not confirm the performance of the country's employment policies, they imply that, for the *CNEE*-related activities to be more effective, the provision of employment support programmes must take stock of the young people's socioeconomic and socio-demographic characteristics, so as to reduce job insecurity and underemployment levels, and to promote job quality and entrepreneurship.

All in all, this analysis shows that the programmes implemented under the National State-Employer Agreement to promote youth employment in Senegal enable their beneficiaries to access high-quality jobs. These jobs are to be found mostly in the industrial and the services sectors. Limiting young people's participation in the *CNEE* programmes is the same as limiting their access to quality jobs.

That is why the present study makes the following economic policy recommendations: first, employment promotion policies oriented towards job-providing sectors should be promoted, which would lead to a more effective employment policy. Second, employment support programmes, in this case those under the National State-Employer Agreement (*CNEE*), should be enhanced with the aim of maintaining and increasing their capacity to meet young people's expectations in terms of training geared towards job-providing sectors. Third, the public-private partnership should be strengthened in order to identify job-providing sectors and to design public employment policies targeting these very sectors. Fourth, strategic monitoring units should be set up, or strengthened, in job-providing sectors, for a better identification of employment needs and of policy measures, and for a better implementation of strategies aimed at promoting youth employment. Promoting youth entrepreneurship could help reduce unemployment. One way to do this is to increase the number of training courses for entrepreneurship and to accompany young people from their training to the implementation of new ideas oriented towards sectors that provide employment.

One of the limitations of the present study is related to the data used; these could not enable an analysis by sub-sector of activity. In addition, they are cross-sectional data, and, hence, could not enable a long-term analysis. This type of analysis is necessary but would be possible if panel data were used.

Notes

1. See Decree No. 2014-25 of 9 January 2014, available at: http://www.jo.gouv.sn/spip.php?article10159

2. Agriculture is to be construed here in its broad definition, where it subsumes agricultural, plant, and animal production, plus hunting and related services, forestry and logging, and fishing and aquaculture.

3. Examples of social security structures are the Institute for the Provident Insurance in Senegal (*Institut de Prévoyance Assurance du Sénégal, IPRES*), the Social Security Fund (*Caisse de Sécurité Sociale, CSS*), the National Pension Fund (*Fonds National de Retraite, FNR*), and the various mutual health insurance schemes.

4. African Union (2006), *The African Union African Youth Charter*. 11, Banjul, Gambia.

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Appendix

Table A1: Estimations of the determinants of job quality with a selection bias correction

Variables	Young Women		Young Men	
	Selection Equation Participation in the Labour Market	Primary Equation Quality-job Index	Selection equation Participation in the Labour Market	Primary Equation Quality-job Index
Sectors of Activity				
Agriculture	12.94	44.61*	3.648***	77.59**
Industry	8.936***	48.37**	3.041***	74.94**
Trade	9.585***	63.14***	3.467***	77.81**
Services	10.24	55.35***	3.698***	74.16**
Type of Employment				
Self-employed	-5.273***	-4.176*	0.597	-7.605**
Salaried workers	-6.520***	3.799	0.0891	3.568
Age in Levels and Age-squared				
Age	0.242	-5.856*	0.499	-1.932
Age-squared	-0.00451	0.0927*	-0.00806	0.0237
Household Size	- 0.00961	-0.0114	0.0107	0.213*
Education Level				
Secondary 1	-0.288	4.104	0.531	4.049
Secondary 2	-0.255	-0.393	0.195	1.059
Higher education	-0.458	-4.411	0.155	-3.772
Knowledge of Wolof				
Basic	-0.208	-5.780	0.321	-0.0810
Good	-0.283	-4.849	0.200	0.852
Knowledge of French				
Basic	--	--	-0.169	9.180
Good	0.986*	6.331	-0.383	8.772

continued next page

Table A1: Continued

Variables	Young Women		Young Men	
	Selection Equation Participation in the Labour Market	Primary Equation Quality-job Index	Selection equation Participation in the Labour Market	Primary Equation Quality-job Index
Knowledge of English				
Basic	-1.034	-1.325	-0.0594	-0.643
Good	-1.122*	-0.401	0.120	-0.560
Political Party Activist	0.692	-6.714*	0.365	-1.740
Instruments				
Being married	0.507*		0.257	
Number of dependents in a household	0.0502		-0.0215	
Constant	-5.186	88.58*	-9.772	3.233
Inverse Mills Ratio	**6.398**		**12.97**	
No. of observations	969	969	1,295	1,295

Figure A1: Histogram of the propensity scores by treatment status

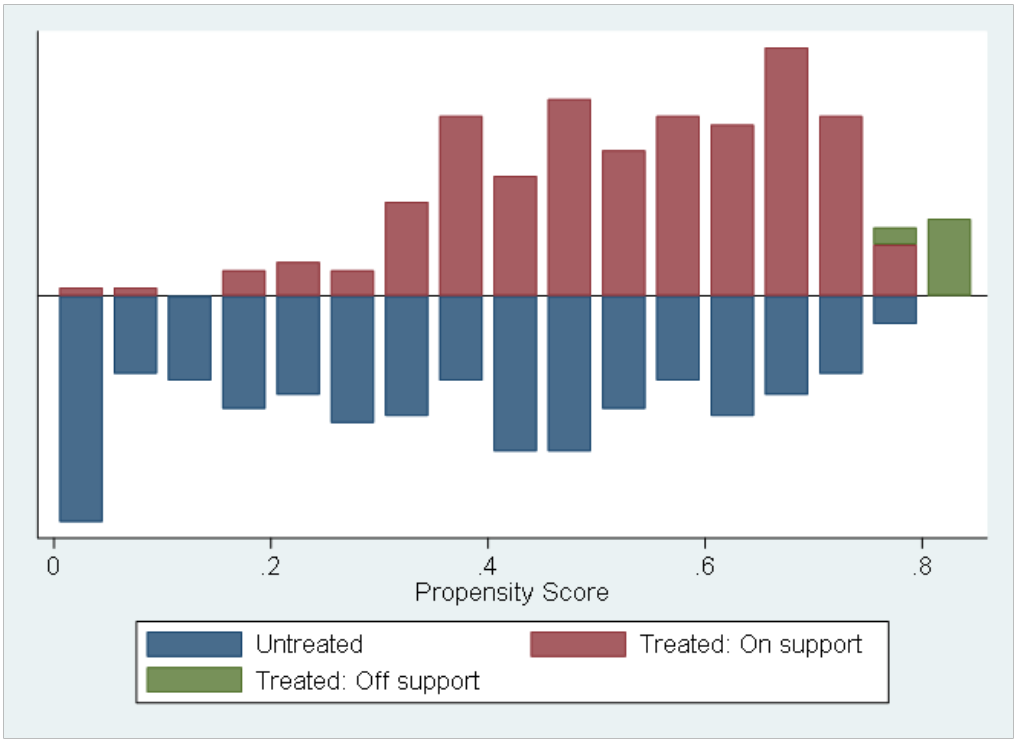

Figure A2: Standardized bias before and after matching

Table A2: Matching quality

	Matching	Pseudo R^2	LR chi^2	p>chi^2	Mean bias	Median bias	B	R	%Var.
Support									
	Before	0.169	106.08	0.000	16.6	12.1	81.9*	0.18*	80
	After	0.059	31.81	0.623	7.1	5.7	53.6*	2.13*	0

Mission

To strengthen local capacity for conducting independent, rigorous inquiry into the problems facing the management of economies in sub-Saharan Africa.

The mission rests on two basic premises: that development is more likely to occur where there is sustained sound management of the economy, and that such management is more likely to happen where there is an active, well-informed group of locally based professional economists to conduct policy-relevant research.

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