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Semi-nonparametric Evidence of Young Women's Participation in the Congolese Labour Market

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This article analyses the determinants of young women's participation in the labour market. For this purpose, the Employment Policy Enhancement Survey (EAPE), conducted by the Laboratoire de Recherches et d'Etudes Economiques et Sociales (LARES) in collaboration with CERDI in 2018 was used as the database. The results of Gallant and Nychka's (1987) semi-nonparametric procedure show that health status, household size, marital status, and educational attainment are explanatory factors of young women's labour market participation in Congo.

Keywords: labour market participation, semi-nonparametric, Congo

Introduction

In most countries of the world, women's participation in the labour market is one of the phenomena that occupies an important place in National Development Policies (NDPs), because to date, women remain less likely than men to be active in the labour market (ILO, 2018). Also, despite the implementation of the 1995 Beijing Platform for Action and the existence of the 2030 Agenda for Sustainable Development's MDG-5, it is clear that women's activity rate is not evolving in the same way everywhere else. Indeed, its value has been decreasing since 1990 at the global level (it went from 56.03% in 1990 to 52.59% in 2017). At the regional level, i.e. in Sub-Saharan Africa, this rate has shown a slight downward trend over the same period, having fallen from 62.4% to 61.13%. On the other hand, in the Republic of Congo, this figure seems to be stable, at 71.56% in 1990 and 71.78% in 2017 (World Bank, 2017).

All these statistics reveal that women's participation in the labour market is a reality that can be investigated. In this respect, the reflections on the one hand call upon several theories which we can group into two approaches, namely the economic approach (consisting of the theories of human capital, Becker, 1964; of job search, McCall, 1970; and survival strategies, Duque and Pastrana, 1973) and the non-economic approach (including the theory of basic needs, Maslow, 1940 and that of self-determination, Deci and Ryan, 1985) and the other to numerous empirical works that we can divide into three groups as well, namely the group of works carried out in Africa (Gakou and Kuépié, 2008; Mba Eyen, 2012; Bello and Sokeng, 2015) in the Republic of Congo (Mbalamona, 2011; Ndinga and Zakarya, 2018) and in the rest of the world (Ejaz, 2007; Hamdan, 2019; Lopez-Acevedo 2021).

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From a theoretical point of view, the overview of the above literature review reveals a complementarity between the two approaches selected, since the first one highlights the determinants of women's participation in the labour market from an economic point of view and the second one is interested in their individual and psychological motivations. Empirically, it can be seen that the subject under study has been applied in various fields of study on women in a global way by means of econometric tools belonging to the parametric approach. Consequently, the added value of this work consists of a study of the case of young women in Congo using a non-parametric approach. One point justifies, among others, the choice of our topic, namely the development of female entrepreneurship. There are several initiatives that have been put in place for this cause. This is the case of the recent ILO-WED project and the AFAWA Risk Facility, which respectively increased the profitability of women-led enterprises by 50% and allocated more than 50 million dollars in credit lines to them. As a result of these projects, one out of three businesses is owned by a woman, which is 34% of the businesses in the world; in Latin America and the Caribbean this figure rises to 50%. However, there is a downward trend from 29% in sub-Saharan Africa to 18% in South Asia (World Bank, 2020). While at the global level, this reality is not very alarming, in the Republic of Congo, on the other hand, there is food for thought insofar as of all the country's microenterprises, only 20.44% are owned by women (MPMEASI and INS, 2017). Moreover, the work carried out in the framework of this study raises three main concerns. Education, a powerful factor in human development, is a source of excellence for societies. Indeed, the State invests in education to have a qualified workforce (Becker, 1964), the diploma being an essential signal in the selection of candidates on the labour market (Spence, 1973). In the Republic of Congo, the school enrolment rate for girls is 92.37% (UNESCO, 2018), a very high figure at the primary and secondary levels, the enrolment rate for girls and the success rate for the CEPE are 96.7% and 49% respectively; at the secondary level, these figures are 68% and 66% respectively for the first and second cycles, and 45% for the BEPC and 39% for the BAC (MEPSA, 2016). At university level, on the other hand, only 23.31% of women have access to university and 13.9% have graduated (ETVA, 2015). Under these conditions, one wonders whether education can be a determinant of women's participation in the labour market. Women's empowerment is linked to their participation in social, political and economic activities (Ninacs, 2008), despite the conception of their income as a supplemental wage and not an emancipating factor by traditional society (Silvera, 2014). In this respect, the situation of Congolese women is evolving in some ways, with the proportion of women working in the industrial and commercial sectors being 55.39% and 33% respectively (ETVA, 2015); the second government of the new republic has 22.85% women; from the 13th to the 14th legislature (2012-2017 to 2017-2022), the percentage of women in the Senate and the National Assembly rose from 19.44% to 20.83% and from 8.75% to 11.25% respectively (UN Women Congo, 2019). In this light, the question is whether women's empowerment can promote their participation in the labour market. Poverty is a structural problem rooted in the society of countries, and is reflected in a lack of fundamental skills to access a certain standard of living (Sen, 1987); skills based on endowments in social capital, human capital, physical capital and economic capital (Rousseau, 2001). With a human capital index of 0.42 (World Bank, 2021), the Republic of Congo has made little progress in terms of its social condition. The proportion of women who are unemployed and in difficult financial circumstances is 41.2%; as they do not always have the means to acquire training leading to qualifications (only 13.9% of women have a degree), only 8.80% of women have a decent job (World Bank, 2020) and 6% of women work in the formal sector (ETVA, 2015). As women are more exposed to poverty than men, there are questions about their participation in the labour market. All of the above concerns can be summarised by the following central question: What are the determinants of women's participation in the

labour market in the Republic of Congo? The main objective of this study is therefore to analyse the determinants of women's participation in the Congolese labour market. Following the work of (Gakou and Kuépié, 2008 and Bello and Sokeng, 2015) we defend the hypothesis that education, age, standard of living, marital status, number of children, place of residence and religion determine the participation of young women in the labour market.

Methodology

Data Source

The data used for the following statistical and econometric analysis come from the field survey conducted as part of the project "Improving youth employment policies in Francophone Africa (2018)", which is the result of cooperation between five African universities through five research centres/laboratories and is financed by the IDRC. But for this work, we are mainly interested in the case of the Republic of Congo. This includes 748 young women. However, due to missing data, transformations and the recoding of certain variables, a loss of information was recorded, which reduced our working samples for the Brazzaville, Pointe-Noire and overall models to 239, 474 and 713 young women respectively. In addition, the wealth of information it contains and its timeliness justify, in part, its choice over all others that have been done on the Congolese labour market to date, for modelling women's participation in the labour market in Congo.

Table 1

Descriptive Statistics of Variables

Model variables	**Statistics**	**Works of inspiration**
Explanatory variables		
Household size | S0CQ06A (how many people live in your household?)	Mean: 4.92 standard deviation : 2.58 Min: 1 Max: 18	Paikar (2019)
Religion | S0CQ07 (what is your religion ?)		
Catholic	31.43%	Alam et al (2017)
Protestant	52.99%	
Other	47.01%	
Marital status | S0CQ03 (what is your marital status?)		
Single	69.44%	Ejaz (2007)
Common-law	24.58%	
Other	5.97%	
Level of education | S1AQ04 (what was your level of education?)		
Primary	8.19%	Hosney (2016)
General secondary	35.83%	
Technical secondary	9.17%	
Higher	46.81%	
Health status | S0DQ01 (How do you rate your health status?)		
Very good	31.53%	Nwosu et Woolard (2015)
Good	55.97%	
Fairly good	11.25%	
Poor	1.25%	
Explained variable		
Women's participation in the labour market: In the last 7 days have you worked even one hour? (S3Q01) ; have you looked for a job in the last 7 days? (S3Q06) ; have you looked for a job in the last 4 weeks? (S3Q07) ; and would you be available for work? (S3Q08) Yes No	69.17% 30.83%	Nounagnon (2019)

Source: Author based on EAPE data (2018).

Choice and Descriptive Analysis of Variables

The table below provides an overview of the proportions of the modalities associated with our qualitative variables and the central tendency and dispersion features of our quantitative variable.

There are more women with secondary education (35.83% for general secondary and 9.17% for technical secondary) and higher education (46.81%) than women with primary education (8.19%), reflecting the effectiveness of the strategies for the education of young girls put in place by the Congolese government (MEPSA, 2016). In addition, there is a preponderance of Christianity, represented by the Catholic and Protestant modalities (31.43% and 21.56% respectively) over the animist, Islamic and atheist religions (47.01%), figures that are quite consistent given that the Congo is a country with a Christian majority (MEAE, 2021). With regard to marital status, the proportion of single women (69.44%) is higher than that of women in common-law unions (24.58%), married, divorced, separated and widowed (5.97%), no doubt due to the youthful nature of the Congolese population and the country's current social context. Regarding health status, 711 young Congolese women feel relatively healthy, compared to 9 young women who feel unhealthy. With regard to household size, this is a quantitative variable with an average value of 4.92 and a low dispersion (2.58) of values around the average. Finally, more than half of the women participate in the labour market.

Choice and Presentation of the Model to Be Estimated

Given the binary aspect of our explained variable, we could have used a Probit model for our applications. But the fact that the errors of our different empirical models do not follow a Gaussian distribution, as shown in Figure 1, we opt for the estimation of a non-parametric model. Moreover, considering Table 1 where the probabilities associated with the chi2 statistic are less than 0.005, we can conclude that the semi-parametric model developed by Gallant and Nychka (1987) is appropriate to obtain consistent estimators.

The basic idea of this model is to approximate any smooth density with a moment generating function with the following Hermite form (Gabler et al, 1993): $h^*(\varepsilon) = \sum_{ij=0}^{k} \alpha_i \alpha_j \varepsilon^{i+j} \exp\{-(\varepsilon/\delta)^2\}$ (1) . Where h is the approximated density and ε the error term. And to use this approximation in the construction of a pseudo-likelihood function to be maximised. Thus, for our limited dependent variable model of the form:

$Participation^* = a0 + a1(Education\ level) + a2(Religion) + a3\ (Marital\ statu) + a4(Healt\ Statu) + a5(Household\ Size) + \varepsilon$ (2); $Participation = 1(participation^* \geq 0)$ (3)

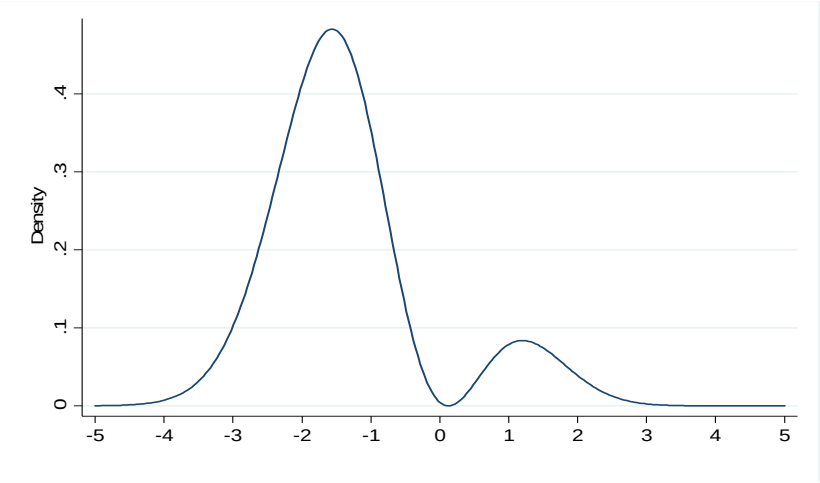
where $participation*$ is a latent variable, $a0$, $a1$, $a2$, $a3$, $a4$ et $a5$ parameters to be estimated and ε the independently distributed random error term. Consistent estimation of the parameters of this model is achieved if and only if the degree K of the Hermite polynomial increases as the sample size increases.

Table 2

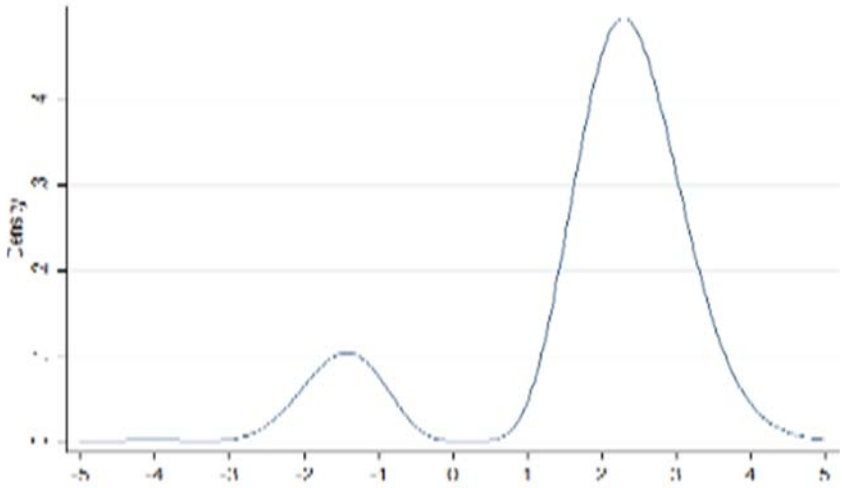
Results of the Discrimination Test Between the Probit Model and the Semi-Parametric Model

Likelihood test of the Probit model/SNP model	Case of the Brazzaville model	Case of the Pointe-Noire model	Case of the ensemble model
Chi2 (1) Statistic	15.66	8.17	6.45
P-value	0.001*	0.004*	0.011*

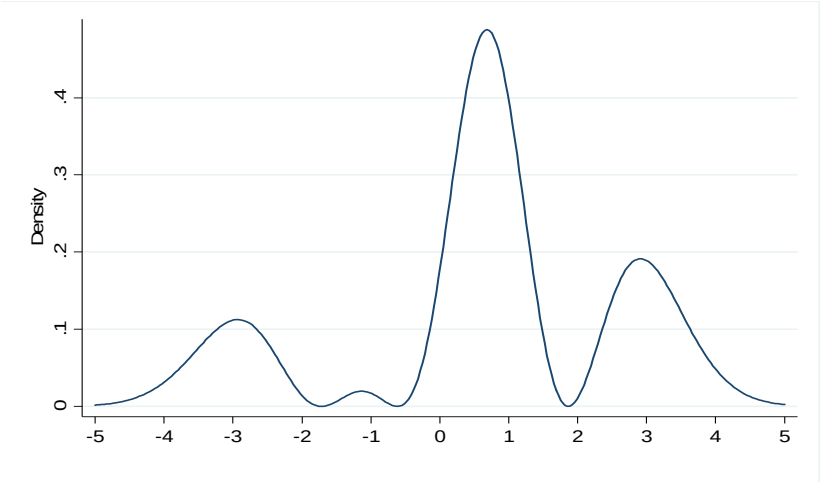
Source: Author based on Stata MP/16. *Significant at the 5% level.



(a) Case of the Brazzaville model



(b) Case of the Pointe-Noire model



(c) Case of the ensemble model

Figure 1. Density functions of error terms.
Source: Author from Stata MP/16.

Presentation and Interpretation of Results

The results of the estimation of our econometric model using the "SNP" command programmed on state are presented in the table below.

Table 3

Results of Econometric Analysis

	Model 1		Model 2		Model 3	
	Coef	P-value	Coef P-value		Coef P-value	
Education level						
Primary (ref)						
General Secondary	0.469	0.457	-3.607	0.000*	-1.797	0.000*
Technical Secondary	1.289	0.253	-2.819	0.000*	-1.148	0.000*
Higher Education	2.962	0.000*	-2.518	0.000*	-0.706	0.036**
Religion						
Catholic (ref)						
Protestant	0.370	0.419	0.038	0.903	0.007	0.970
Other	-0.414	0.230	0.111	0.547	-0.066	0.677
Marital Status						
Single (ref)						
Unmarried union	1.121	0.140	0.140	0.504	0.358	0.068
Other	1.704	0.268	1.516	0.000*	2.070	0.000*
Household size	-0.191	0.000*	-0.084	0.022**	-0.087	0.009*
Health status						
Very good (ref)						
Good	-0.270	0.737	0.350	0.063	0.256	0.155
Quite good	-0.490	0.695	0.289	0.377	0.149	0.554
Bad	-7.902	0.000*	-1.380	0.000*	-1.469	0.029**
	2.009	0.010**	-1343372	0.971	1.670	0.000*
Coefficients SNP	-0.042	0.677	2861761	0.973	-0.237	0.125
	-0.613	0.002**	987403.1	0.972	-0.507	0.000*
Wald chi2 (11)	1303.31		545.45		243.40	
Prob > chi2	0.000*		0.000*		0.000*	
Logarithmic pseudo-likelihood	-132,908		-224.937		-387.417	
Number of observations	239		475		713	
Number of Iterations	9		54		10	
Skewness	1.130		-1.405		-0.604	
Kurtosis	4.567		4.314		2.942	

Source: Author based on Stata MP/16.0. **: significant at the 1% level; **: significant at the 5% level; Model 1: Brazzaville model; Model 2: Pointe-Noire model; Model 3: Overall model.*

This table reveals in part that: (i) there is a statistically significant association between the variables in the three models, referring to the significance of the Wald coefficients; (ii) the Brazzaville and ensemble models converged faster than the Pointe-Noire model. (iii) the skewness coefficient of model 1 is positive, which means that the distribution is asymmetrical towards the right (see figure 1a), whereas the skewness coefficients of models 2 and 3 are negative, which means that the distribution is asymmetrical towards the left (see figure 1b and figure 1c); (iv) the kurtosis coefficients of models 1 and 2 are both higher than 3 indicating that the distribution is sharper than that of the normal law, we thus speak of leptokurtic; nevertheless the coefficient of

model 3 is lower than 3 translating then a more flattened distribution than that of the normal law: (v) the total number of Hermite polynomial expansions per model is equal to three. This ensures that the results are different from a Probit model. Finally, the fact that some of the expansions are not significant does not alter the usefulness of our models, as the likelihood ratio tests support the SNP estimate. In sum, our results are of good quality and can be interpreted.

From the examination of the results obtained from our econometric procedure, we can draw the following conclusions:

Household Size: A Brake on Young Women's Participation in the Labour Market

The negative sign associated with this variable, in all three estimated models, reflects the fact that as household size increases, it has a negative influence on young women's participation in the labour market. This implies that women's labour market activity decreases as household size increases (Chatterjee et al, 2015; Paikar, 2019; Nounagnon, 2019; etc.). Indeed, several situations may be at the origin of this inverse relationship between household size and labour market participation, such as the presence of a disabled or elderly member of the individuals who are in most cases taken care of by the women of the household (Schmittroth, 1991), the presence of children under 15 years of age (Jacobsen, 2002), and many others. According to neoclassical theory, women's participation in the labour market is the result of a trade-off between domestic and market work, with the woman as a rational economic agent deciding to work if the market income is higher than the income from domestic work (Mincer, 1962). In our context, it should be noted that a Congolese household has an average of 4.3 people and that almost 44% of the household population is composed of children under 15 years of age (EDSC, 2012), associated with a high fertility rate, the average number of children per woman being 4.9 (World Bank, 2020). This reality could justify women's preference for domestic work to the detriment of market work and could explain the low presence of young women in the formal sector, at 6% (ETVA, 2015). Noting that Brazzaville and Pointe-Noire alone account for half of the population, i.e. 5,069,801 inhabitants, including 954,020 women in Brazzaville and 489,662 women in Pointe-Noire (MSP, 2018), this means that a large proportion of the proportions mentioned above concern these two cities.

Health Status and Marital Status: Two Drivers of Women's Labour Market Participation

Regarding health status, the results show that compared to young women who rate their health status as very good, those who rate it as poor are less likely to be active in the labour market. Moreover, the sign of the coefficient associated with the significant modality of this variable is negative, reflecting an inverse relationship between this variable and the labour market participation of young women. Thus, the worse the health, the less likely it is to be active in the labour market. These results are consistent with the work of several authors on the existence of this inverse relationship (Mete and Schultz, 2002; Bridges and Lawson, 2008; Novignon and Arthur, 2015; Nwosu and Woolard, 2015; etc.). Indeed, health is a form of human capital, which is fundamental to labour supply decisions and to the recruitment of individuals into the labour market (Becker, 1964; Grossman, 1972). In normal circumstances, women already have difficulties in accessing the labour market, and poor health has a doubly negative effect on their activity due to the various prejudices against sick people and the reduction in their productive capacity (e.g. cripples and those suffering from HIV). In this regard, in the Republic of Congo 50.5% of women diagnosed with cancer are affected by cancerous diseases (ALIAM, 2017); With regard to HIV, young people aged 15-24 account for 22% of new infections, with a female-to-male ratio of 2.69, reflecting the greater vulnerability of young Congolese women to HIV (MSP, 2018). With regard to strokes, during the period from

2014 to 2017, the CHU-B and Loandjili hospital recorded 44% of women affected by this disease, which can be a source of disability for them (MSP, 2018). Under these conditions, the labour supply of these women may be compromised.

As our results show, this variable stimulates the labour market activity of young women. The finding is that for models 1 and 2, young married, divorced, separated and widowed women are more likely to be active in the labour market than single and cohabiting women. We also note the presence of a positive sign associated with the coefficient of this modality, which means that the two variables move in the same direction in one situation. To explain this, we can rely on the theory of survival strategies, which assumes that as households are increasingly confronted with difficult changes in their situation, they put in place strategies to enable them to survive (Duque and Pastrana, 1973). Indeed, if for any reason the income of the head of the household is insufficient, the household is forced to put in place strategies to generate additional resources. In such cases, the woman is often at the forefront of providing the necessary complement to the survival of the household, as is the case for women heads of household (widows, separated, divorced); these reflections are in line with the work of Gakou and Kuépié (2008), Castro et al (2011), Nounagnon (2019), etc.

In the Republic of Congo, household poverty and the share of households headed by women are respectively 38.2% and 21.5% (World Bank, 2017), figures that legitimise the presence of this category of women on the labour market compared to single women because of the constraints they face in relation to their household (Code de la famille, 1984). Furthermore, it is noticeable that this variable influences the activity of young women in Pointe-Noire and not in Brazzaville, which could be justified by the diversified nature of Pointe-Noire's activities and the fact that it is the country's economic capital. This being the case, the employment/population ratio is higher in Pointe-Noire than in Brazzaville, respectively 53.6% and 48.5% (CNSEE, 2011).

Education Level: An Equivocal Determinant of Young Women's Labour Market Participation

The ambivalent nature of this variable shows that its influence on women's economic activity differs according to the structures of the different labour markets. The results show that this variable is significant in all three models. Indeed, in the first model, young women with higher education are more likely to participate in the labour market than women with primary and secondary education. For models 2 and 3, compared to young women with primary education, those with secondary and higher education are less likely to be active in the labour market. However, the signs of the coefficients associated with this variable are negative for models 2 and 3 and positive for model 1. This inverse relationship, relative to the Pointe-Noire model and the overall model, is justified by the fact that participation is determined by a trade-off between labour and human capital investment (Porah, 1967). Indeed, everything depends on the structure of the labour market, if it is characterised by a high unemployment rate and a problem of decent job creation, the choice could be more on education than on the labour market, as indicated by the work of Engström et al (2001) and Garibaldi and Wasmer (2005). A situation that fits perfectly with the Congolese context as far as women are concerned, with a strict and relaxed unemployment rate of 31.6% and 41.9% respectively (ETVA, 2015), and the share of women in decent employment is only 8.80% (World Bank, 2020). However, with a household poverty rate of 38.2%, the risk of dropping out of school is increasing, with 62.2% of cases of girls dropping out of school early for an income-generating activity (Bahouayila, 2016).

Regarding the positive relationship between the level of education and the participation of young women in the labour market, it is in line with the majority of works (Hafeez and Ahmed, 2002; Nor'aznin and Norehan,

2007; Fatima and Sultana, 2009; Aminu, 2010; Hosney, 2016; etc.), pointing out the importance of the level of education of women on the supply of labour of the latter. We can explain this through the theory of human capital, which states that each individual has a human capital stock, and that this stock is not fixed, so rational agents work in such a way as to make it evolve (through training, seminars, etc.), with the aim of gaining experience, acquiring more skills and obtaining the best-paid jobs (Becker, 1964). Furthermore, it should be noted that the level of education most compatible with the participation of young women in Brazzaville is higher education, whereas in Pointe-Noire this distinction is not obvious. This could be explained by the fact that Brazzaville is home to the two largest universities in the Congo, namely the Marien Ngouabi University and the Denis Sassou Nguesso University, as well as the majority of training schools. Moreover, the type of employment offered in Brazzaville is more administrative in nature, unlike Pointe-Noire, which offers a wide range of jobs. As a result, the informality rate in Pointe-Noire is 84.8%, whereas in Brazzaville the figure is 67% (CNSEE, 2011).

Conclusion

In view of the gloomy situation facing the Congolese economy and its effects on the labour market in general and that of women in particular (unemployment and underemployment, for example), we felt that it would be interesting to add to the literature on the Congolese labour market by tackling the theme entitled: "The determinants of young women's participation in the labour market". The objective of our work was to highlight the factors that facilitate or hinder the participation of young women. To achieve this objective, we used a non-parametric model. The latter was estimated using the Pseudo Maximum Likelihood method and survey data conducted by the Laboratory for Economic and Social Research and Studies of the Congo (LARES) in partnership with the International Development Research Centre (IDRC) in 2018. Our study shows that two approaches, namely economic and non-economic, clash around the phenomenon of labour market participation. Moreover, the econometric results obtained indicate that health status, household size, marital status and level of education constitute the microeconomic determinants of young women's participation in the labour market. This requires, among other things, the creation of specific labour market integration programmes for young women. Beyond this analysis, we believe that a reflection on the macroeconomic determinants can be the subject of future work in order to promote a better understanding of the phenomenon of young women's employment in Congo.

References

Alam, M., Amin, S., & McCormick, K. (2017). The effect of religion on women's labor force participation rates in Indonesia. *Journal of the Asia Pacific Economy*, doi: 10.1080/13547860.2017.1351791

ALIAM. (2017). Les cancers en Afrique francophone. *African Cancer Registry Network (AFCRN).* Retrieved from https://afcrn.org/index.php/publications2/59-les-cancers-en-afrique-francophone/149-lescancersenafriquefrancophone

Aminu, A. (2010). Determinants of participation and earnings in wage employment in Nigeria. *Paper presented in 5th IZA/World Bank Conference on Employment and Development.*

Bahouayila, B. (2016). Les déterminants du décrochage scolaire chez les adolescents au Congo. *Archives Ouvertes, hal-01348728.* Retrieved from https://hal.archives-ouvertes.fr/hal-01348728

Becker, G. (1964). Human capital: A theoretical and empirical analysis. *Special Reference to Education, University of Chicago Press.* Retrieved from https://www.nber.org/books-and-chapters/human-capital-theoretical-and-empirical-analysis-special-reference-education-first-edition

Bello, F. H. & Sokeng, D. G. (2015). Participation de la Femme à l'Activité economique au cameroun. *Institut de Formation et de Recherche Démographiques (IFORD).* Retrieved from https://uaps2015.princeton.edu/papers/151264

Bridges, S. & Lawson, D. (2008). Health and labour market participation in Uganda United Nations University. *World Institute for Developpment Economics Research (UNU/WIDER).*

Castro, E., Garcia, G. & Badillo, E. (2011). La participation laboral de la mujer casada y su conyuge en Colombia: Une enfoque de decisiones relacionadas. *Lexturas de Economia,* No. 74, pp. 171-201. ISSN 0120-2596.

Chatterjee, U., Murgai, R., & Rama, M. (2015). Job opportunities along the rural-urban gradation and female labor force participation in India. Washington, DC: World Bank (policy research working paper 7412).

CNSEE. (2011). Principaux indicateurs du marché du travail au Congo. Brazzaville.

Code de la famille. (1984). Loi N°073/84 du 17/10/1984 Portant de la Famille, Article 168, Paragraphe 8: des Effets du Mariage.

Deci, E. L., & Ryan, R. M. (1985). Intrinsic motivation and self-determination in human behavior. *New York, Plenum Press 1985.* Retrieved from https://www.scirp.org/(S(lz5mqp453edsnp55rrgjct55))/reference/Refencespapers.aspx?ReferenceID=2046750

Dubois, J. L., & Rousseau, S. (2001). *Reinforcing Household's Capabilities as a Way to Reduce Vulnerability and Prevent Poverty in Equitable Terms, Symposium Justice and Poverty: Examing Sen's Capability Approach*, 5-7 June Cambridge.

Duque et Pastrana. (1973). Las estrategias de supervivencia economica de las unidades familiares des sector popular urbano: una investigacion exploratoria. *Santiago: Programa ELAS/CELADE 1973.*

EAPE. (2018). Rapport Général de l'Etude Améliorer les Politiques d'Emploi des Jeunes en Afrique Subsaharienne. *Centre de Recherche pour le Développement International, Canada.*

EDSC. (2012). Enquête Démographique et de Santé du Congo.

Ejaz, M. (2007). Determinants of female labour force participation in Pakistan: An empirical analysis of PSLM (2004-05) micro data. *The Lahore Journal of Economics Special Edition September 2007.* Retrieved from https://ideas.repec.org/a/lje/journal/v12y2007ispp204-235.html

Engström, B., Holmlund & Kolm, A. S. (2001). Optimal taxation in search equilibrium with home production. Working paper, Uppsala University.

ETVA. (2015). Programme sur l'Emploi des Jeunes Département des Politiques de l'Emploi, Transition vers le Marché du Travail des Jeunes Femmes et Hommes en République du Congo. *Direction Générale de la Formation Qualifiante et de l'Emploi et Institut national de la statistique.*

Fatima, A. & Sultana, H. (2009). Tracing out the u-shape relationschip betwenn female labor force participation rate and economic development for Pakistan. *International Journal of Social Economics, 36*(1/2), 182-189.

Gabler, S., Laisney. F. & Lechner, M. (1993). Semi non parametric estimation of binary-choice models with an application to labor-force participation. *Journal of Business & Economic Statistics,* vol. 11, pp. 61-80. Retrieved from http://www.jstor.org/stable/1391307

Gakou, A. D., & Kuépié, M. (2008). Niveau et déterminants de l'insertion des femmes sur le marché du travail au Mali. *Document de Travail DIAL.* Retrieved from https://dial.ird.fr/wp-content/uploads/2021/10/ST103_5_Niveau-et-determinants-de-linertion-des-femmes-sur-le-marche-du-travail-au-Mali-Assa-Mathias.pdf

Gallant, A. R. & Nychka, D. N. (1987). Semi-non parametric maximum likelihood estimation. *Econometrica,* 5, 363-390.

Garibaldi, P. & Wasmer, E. (2005). Labor market flows and equilibrium search unemployment. *Journal of the European Economic Association.*

Grossman, M. (1972). On the concept of health capital and the demand for health. *Journal of Political Economy,* vol. 80, pp. 223-255. University of Chicago. Retrieved from https://www.jstor.org/stable/1830580

Hafeez, A. & Ahmed, E. (2002). Factors determining in the labor force participation decision of educated married women in district Punjabi.

Hamdan, M. S., Lim, B., Pazim, K. H., & Nga, J. L. (2019). Determinants of female labour force participation in Sabah. *Proceedings of the International Conference on Economics 2019 (ICE 2019) 93-101.*

Hosney, S. H. (2016). Factors influencing female labor force participation in Egypt and Germany: A comparative study. *SOEP Papers on Multidisciplinary Panel Data Research, No. 826, Deutsches Institut für Wirtschaftsforschung (DIW), Berlin.* Retrieved from https://www.econstor.eu/bitstream/10419/130586/1/856920835.pdf

ILO. (2018). World employment and social outlook: Trends for women. international labour organization. Retrieved from https://www.ili.org/global/research/global-reports/weso/2018/lang-fr/index.htm

Jacobsen, P. J. (2002). How family structure affects labor market outcomes. *Wesleyan University & The Economic of Work and Family,* Chapter 5, pp. 133-158.

Lopez-Acevedo, G., Matias, F. D. & Rodriguez, M. J. (2021). Trends and determinants of female labour force participation in Morocco: An initial exploraty analysis. *Policy Research Working Paper 9591, World Bank Group.* Retrieved from https://ftp.iza.org/dp14218.pdf

Maslow, A. (1940). A theory of human motivation. *The Psychological Review, 50*(4), 370-396. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.318.2317&rep=rep1&type=pdf

Mba Eyen, F. A. (2012). Participation des femmes sur le marché du travail: Une etude comparative sur le cameroun et Mali. *Revue Européenne du Droit Social, Edition Bibliotheca targoviste pages 97-118.* Retrieved from http://www.afristat.org/contenu/doc_travail_experts/ra_st_marche_travail.pdf

Mbalamona, E. (2011). Accès des femmes sur le marché du travail au Congo Brazzaville: Contraintes et perspectives. *Centre d'Etudes et de Recherche sur les Analyses et les Politiques Economiques (CERAPE). 6e conférence africaine sur la population Africaine: Passé, Présent et Futur, Ouagadougou Burkina-Faso.* Retrieved from https://uaps2011.princeton.edu/papers/110199

McCall, J. (1970). Economics of information and job search. *Quaterly Journal of Economics,* 84, 113-126.

MEAE. (2021). Présentation du Congo, dossier pays. *France Diplomatie.* Retrieved from https://www.diplomatie.gouv.fr/fr/dossiers-pays/congo/presentation-du-congo/

MEPSA. (2016). Stratégie nationale de scolarisation des filles en république du Congo. *Rapport du Ministère de l'Enseignement Primaire, Secondaire et de l'Alphabétisation.*

Mete, C. & Schultz, T. P. (2002). Health and labor force participation of the elderly in Taiwan. *Economic Growth Center Discussion Paper,* no. 846, Yale University.

Mincer, J. (1962). Labor force participation of married women: A study of labor supply. *Princeton University Press.* Retrieved from https://www.nber.org/books-and-chapters/aspects-labor-economics/labor-force-participation-married-women-study-labor-supply

MPMEASI & INS. (2017). Recensement des très petites, petites, moyennes entreprises et des Artisans: Rapport principal. *Ministre des Petites et Moyennes Entreprises, de l'Artisanat et du Secteur Informel et Institut National de la Statistique, Brazzaville: MPMEASI et INS.*

MSP. (2018). Rapport de la Revue du Secteur de la Sante en République du Congo.

Ndinga, M. M., & Zakarya, K. (2018). The determinants of women's labor force participation: A life story-based analysis in Congo-Brazzaville. *International Journal of Gender and Women's Studies, 6*(1), 145-158. Retrieved from http://ijgws.com/journals/ijgws/Vol_6_No_1_June_2018/13.pdf

Ninacs, W. A. (2008). Empowerment et intervention : Développement de la capacité d'agir et de la solidarité. *Québec, les Presses de l 'Université Laval (Vol. 1).* Retrieved from https://www.pulaval.com/produit/empowerment-et-intervention-developpement-de-la-capacite-d-agir-et-de-la-solidarite

Nor'aznin, A. B., & Norehan, A. (2007). Labor Force Participation of Women in Malaysia.

Nounagnon, U. B. (2019). Analyse des déterminants de la participation des femmes au marché du travail au Benin. *Université Laval Québec, Canada.*

Novignon, J., & Arthur, E. (2015). Health status and labour force participation in sub-saharan Africa : A dynamic panel data analysis. *African Developpment Review, 27*(1), 14-26.

Nwosu, O., & Woolard, I. (2015). Impact on health on labour force participation in South Africa. *Economic Research Southen Africa (ERSA),* working paper no. 548. Retrieved from https://www.econrsa.org/system/files/publications/working_papers/working_paper_548.pdf

Paikar, G. R. (2019). Female labor force participation in Afghanistan: A case study from mazar-e-sharif city. Volume 048 Bochum/Kabul. Retrieved from https://www.researchgate.net/publication/330699916_Female_Labour_Force_Participation_in_Afghanistan_a_case_study_from_Mazar-e-Sharif

Porah, B. E. (1967). The production of human capital and life cycle of earnings. *Journal of Political Economy*, *75,* pp. 352-365.

Schmittroth, L. (1991). Statistical record of women worldwide. *Detroit, Michigan: Gale Research.*

Sen, A. K. (1987). *The Standard of Living, Cambridge.* Cambridge University Press.

Silvera, R. (2014). Un quart en moins. des femmes se battent pour en finir avec les inégalités de Salaires. *La découverte, Paris,* 2014, 238 pages. Retrieved from https://www.rachelsilvera.org/

Spence, M. (1973). Job market signaling. *Quarterly Journal of Economics.* Retrieved from https://viterbi-web.usc.edu/shaddin/cs590fa13/papers/jobmarketsignaling.pdf

UN Women Congo. (2019). National Assessment Report of the Beijing + 25 Declaration and Platform for Action. Retrieved from https://archive.uneca.org/sites/default/files/uploaded-documents/Beijing25/congo-beijing25_report.pdf

UNESCO. (2018). Données pour les objectifs de développement durable. *Institue de la Statistique de l'Organisation des Nations Unies pour l'Education, la Science et la Culture.* Retrieved from http://uis.unesco.org/en/country/cg

World Bank. (2017). Gender Statistics Portal, International Labour Organization Modelled Estimate on the Population Participation Rate of Women aged 15 and Over. Retrieved from https://donnees.banquemondiale.org/indicator/SL.TLF.CACT.FE.ZS

World Bank. (2017). Report on the analysis of poverty in the Republic of Congo: Education, Employment and Social Protection for Sustainable Poverty Reduction. Retrieved from https://documents.worldbank.org/curated/en/359991503510903731/pdf/114706-FRENCH-v2-Republic-of-Congo-FRE-7-17-17-M3.pdf

World Bank. (2020). The State of Women's Entrepreneurship: Statistics Speak for Themselves. Daniel Halim 05 March 2020. Retrieved from https://blogs.worldbank.org/fr/opendata/letat-de-lentrepreneuriat-feminin-les-statistiques-parlent-delles-memes

World Bank. (2020). World Development Indicators. Retrieved from https://databank.banquemondiale.org/source/world-development-indicators

World Bank. (2021). World Development Indicators. Retrieved from https://databank.banquemondiale.org/source/world-development-indicators