

ORIGINAL ARTICLE

Access to finance and rural youth entrepreneurship in Benin: Is there a gender gap?

Melain Modeste Senou¹  | Julius Manda² 

¹Economic Department, African Economic Research Consortium, University of Abomey-Calavi, Cotonou, Benin

²International Institute of Tropical Agriculture (IITA), Arusha, Tanzania

Correspondence

Melain Modeste Senou, Economic Department, African Economic Research Consortium, University of Abomey-Calavi, Cadjèhoun, Cotonou 04 BP 0895, Benin.

Email: senoumod@gmail.com

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Abstract

Rural entrepreneurship is an important employment generation intervention for the fast-growing young labour force in developing countries. Many bottlenecks including access to finance impede rural youths from performing in their new ventures. This paper examines the impact of access to finance on rural youths' entrepreneurship in Benin using data from the second wave of the School-To-Work Transition Survey, involving over 900 youths. The paper employs the endogenous switching regression technique, combined with propensity score matching, to investigate the drivers of rural youths' access to finance and its impact on entrepreneurship intention and performance. The results indicate that age, education, poverty status, experience, working in the agricultural sector and the existence of a bank branch are important determinants of rural youths' access to finance. The results also show that access to finance increases the probability of youth entrepreneurship by 15.2% on average. Moreover, the study shows a significant gender gap in rural entrepreneurship of 5.24% among youths with access to finance in Benin. These results suggest that policymakers should facilitate the access of youth, especially young women, to finance by encouraging formal financial institutions to reduce their credit eligibility conditions for those who do not have collateral.

KEYWORDS

access to finance, Benin, ESP, ESR, PSM, rural entrepreneurship

1 | INTRODUCTION

The issue of rural youth entrepreneurship is particularly sensitive in developing countries because it represents a potential instrument for solving the labour market imperfection, alleviating poverty as well as ensuring food security owing to the vital role that agriculture plays in rural areas (Ataei et al., 2020; Cao & Zhang, 2020; Metelerkamp et al., 2019; Trivelli & Morel, 2021). Development agencies view rural entrepreneurship, including agribusiness, as an important employment-generation intervention for the fast-growing young labour force in the years ahead (Alemu & Adesina, 2017; Anyanwu, 2013). Rural entrepreneurship refers to new ventures created in rural areas (Ngorora & Mago, 2016). Diversification into rural activities enables rural entrepreneurs to become creative and innovative and thus shift from necessity-driven to opportunity-driven entrepreneurship (Dubais, 2016). Necessity-driven entrepreneurship serves as an important source of income and employment for vulnerable populations and is undertaken by people who are driven to work for survival.

However, owing to its necessity-driven nature in the rural labour market, the current rural entrepreneurship fails to guarantee sustainable livelihood opportunities to the majority of youths living in rural areas. The rural labour market is characterized by poor-quality informal jobs in a restricted number of industries. Vulnerable employment is the main feature of rural youth, especially female youth. They operate mainly in small, unincorporated family businesses as self-employees or as contributing family workers without pay. Therefore, there is a need to shift from necessity- to opportunity-driven entrepreneurship through mechanisms such as access to finance to rural young entrepreneurs, including young women, for the sake of sustainable inclusive rural transformation.

In Benin, 53% of the population are young. Women represent 51.2% of the population, of whom 55.3% are in the rural zone. They constitute an asset for the Beninese economy because of their strong presence in economic activities. According to the results of the last general census of enterprises in Benin, the proportion of women entrepreneurs was estimated at 50% (INSAE, 2015). These women operate in several sectors, especially agriculture, trade and crafts. Moreover, at least 68.8% of the labor force is female, and particularly young female, in Benin and 72% in rural Benin (International Labor Organization, 2020).

Many challenges, including a weak entrepreneurial environment, limited access to finance and investment opportunities, cumbersome administrative procedures as well as obstructive taxation and legal systems are cited as obstacles to youth entrepreneurship in Benin. These challenges are confirmed by the recent World Bank's Doing Business reports that ranked Benin 149 out of 190 countries in terms of the business environment (Doing Business, 2020). Although the financial inclusion rate increased from 7% in 2015 to more than 31% in 2017, it is very low compared with the average for the west African Economic and Monetary Union (55%). In addition, Benin has a very active microfinance sector with a penetration rate of almost 60% (BCEAO, 2018). However, youths (ages 15–24) constitute a particularly important segment to target for financial inclusion.

Despite several measures taken by the state to create procedures conducive to setting up businesses, there are still important constraints for young people in general and young women in particular in developing their business. The latter face both sociological and cultural burdens as well as financial obstacles. This double penalty influences the rate of rural business creation by women compared with men. Notwithstanding the political will of the State of Benin, entrepreneurial initiatives among young women are struggling to be operationalized, notably owing to a low level of financial inclusion. This trend can be reversed only with full knowledge of the gender-based determinants of financial inclusion and their contribution to young women's rural businesses.

There is still a controversy about the effect of gender on access to finance and new venture creation. Some pieces of evidence suggest that the gender gap in access to finance and entrepreneurship performance is due to sampling bias (Aterido et al., 2013; Pham & Talavera, 2018). Other studies find a positive effect of gender on access to finance and entrepreneurship (Dutta & Banerjee, 2018; Rijkers & Costa, 2012). Gender gaps in credit access may also stem from demand-side factors related to differences in characteristics and preferences for credit use between male- and female-led firms, which could affect their actual loan application behaviour (Aristei & Gallo, 2016). This study aims at identifying the factors influencing access to finance for rural young entrepreneurs and examining the gender-based impact of access to finance on rural youth entrepreneurship and entrepreneurship performance.

By doing this, the study contributes to the relevant literature on access to finance and entrepreneurship as follows. First, to our knowledge, this is the first study in Benin that focuses on rural youth by investigating jointly the driving factors of gender-gap access to finance and their effects on rural entrepreneurship. Most of the previous studies focused separately on either access to finance and entrepreneurship (Bairagya et al., 2020; Mehari et al., 2021) or the gender-based determinants of access to finance (Aristei & Gallo, 2016; Chen et al., 2020; Ghosh & Vinod, 2017) and an entrepreneurship (Özsungur, 2019; Rijkers & Costa, 2012). Very few of them have investigated the gender-based effect of access to finance on entrepreneurship (Kairiza et al., 2017; Tran et al., 2019). Second, to our knowledge, very few studies have assessed the entrepreneurship effect of access to finance using rigorous econometric methods (e.g. Bairagya et al., 2020; Mehari et al., 2021; Kairiza et al., 2017). In this study, we address the methodological shortfall in previous studies by employing the endogenous switching probit (ESP) regression model for the binary outcome variable (entrepreneurship status) and endogenous switching regression (ESR) model for the continuous outcome variable (turnover).

The rest of the paper is organized as follows: Section 2 reviews the relevant literature. Section 3 presents the conceptual and empirical framework. Section 4 presents the data collection and sample procedure as well as the descriptive statistics of the variables used in this study. Section 5 discusses the estimation results while Section 6 concludes.

2 | LITERATURE REVIEW

Entrepreneurship and particularly rural entrepreneurship play an important role in household welfare by raising household income and wealth (Zhao et al., 2019). Past studies (Elder et al., 2015; Liu et al., 2019) have shown that access to finance can have a direct impact on entrepreneurship (Mehari et al., 2021; Pham & Talavera, 2018; Ullah, 2020). However, the literature that incorporates gender and financial inclusion aspects into the analysis of entrepreneurship and more particularly to rural youth entrepreneurship in sub-Saharan African countries is scanty. The existing evidence shows that attitudes towards self-employment including careers in agriculture vary greatly (Metelerkamp et al., 2019; Yeboah et al., 2020). Youths are more necessity- than opportunity-driven entrepreneurs. The value youths place on rural entrepreneurship is that, despite their apparent financial poverty, careers are about much more than making money. Many youths aspire to start their rural activities, including agricultural businesses, despite the lack of skills, role models and access to finance (Ataei et al., 2020; Metelerkamp et al., 2019; Njangang et al., 2020).

Access to finance is a necessary condition, not only for developing businesses but also for creating jobs and reducing poverty and social inequality (Bairagya et al., 2020; Liu et al., 2019). Indeed, access to finance is considered to be one of the main factors hampering the growth of women-owned businesses in developing countries (Aterido et al., 2013; Santos et al., 2018; Weng et al., 2020). Women are relatively more exposed to credit constraints than men and more discriminated against in the business-creation process (Aristei & Gallo, 2016; Wellalage & Locke, 2017). For instance, Wellalage and Locke (2017) using the World Bank Enterprise Surveys on 9879 firms found that enterprises owned by female entrepreneurs are on average 3% more likely to be credit constrained compared with those owned by their male counterparts.

However, some studies find no evidence for discrimination against female-owned enterprises in the formal access to finance. Female entrepreneurs have a higher probability of getting a loan and they pay lower interest rates in comparison with male entrepreneurs (Aterido et al., 2013; Baye, 2013; Pham & Talavera, 2018; Wellalage & Locke, 2017). Aterido et al. (2013) have suggested that the gender gap in lending markets can be explained by firms' characteristics and selection bias rather than by pure gender discrimination. More specifically, women-owned firms tend to be smaller, resulting in a lower probability of getting loans.

3 | METHODOLOGY AND DATA

3.1 | Estimation strategy

The challenge in this study is to estimate the causal effect of access to finance on entrepreneurship. In this study, we employ the ESR and ESP depending on the outcome. For the sake of brevity, we will present only the ESP model since the ESR is derived similarly.

The ESP method involves fitting models in which the response variable depends on a dummy variable and is observed only if a particular selection condition is met. Standard regression techniques do not provide consistent estimators since the unobserved factors that affect the response may be correlated with the unobserved factors that affect the switching or selection variable (Miranda & Rabe-Hesketh, 2006). For instance, the probability that a rural youth has access to finance is determined by his/her individual characteristics and entrepreneurship status. However, the access to finance variable is endogenous by definition because there are factors that are not observed that can affect the entrepreneurship outcome through the error term. For example, it is possible that youths who have access to finance are more motivated than those that do not have access. Motivation, however, is unobserved, and hence is relegated to the error term. However, motivation is also related to entrepreneurship, therefore the relationship between access to finance and entrepreneurship is spurious and can lead to biased estimates.

The observed outcome of the access to finance decision can be modelled in a random utility framework. Following Aakvik et al. (2005), let the decision to access finance be a binary choice, where a youth's access to finance leads to a positive difference between the utility of having access and not having access to financial services. Let this difference be denoted as $d^* = U_1 - U_0$ where U_1 is the utility obtained from having access to finance and U_0 the utility from not having access to finance. The rural youth will request finance if $d^* > 0$.

However, d^* is not observed; what is observed is d , a binary indicator that equals 1 if a rural youth has access to finance and 0 otherwise. More formally, the relationship can be expressed as follows:

$$d_i^* = Z'\delta + u_i \quad (1)$$

$$d_i = 1 \quad \text{if } Z'\delta + u_i > 0$$

$$d_i = 0 \quad \text{if } Z'\delta + u_i \leq 0$$

where Z is a vector of the observed individual's characteristics affecting access to finance; δ is the vector of unknown parameters to be estimated; and u_i the vector of random disturbances related to access to finance with mean 0 and variance σ^2 .

Following Lokshin and Sajaia (2011), the two outcome regressions equations, conditional on access to finance can be expressed as follows:

$$Y_{1i} = \beta_1 X_{1i} + \varepsilon_{1i} \quad \text{if } d_i = 1 \quad (2a)$$

$$Y_{0i} = \beta_0 X_{0i} + \varepsilon_{0i} \quad \text{if } d_i = 0 \quad (2b)$$

where Y_{1i} and Y_{0i} are our binary outcome variables, that is entrepreneurship status; X_{1i} and X_{0i} are vectors of weakly exogenous covariates including the gender of the youth; β_1 and β_0 are vectors of parameters; and ε_{1i} and ε_{0i} are random disturbance terms. The error terms $(\varepsilon_1, \varepsilon_0, u)$ are assumed to have a joint normal distribution with mean vector 0 and correlation matrix.

$$\text{cov}(\varepsilon_1, \varepsilon_2, u) = \begin{pmatrix} 1 & \rho_0 & \rho_1 \\ & 1 & \rho_{10} \\ & & 1 \end{pmatrix} \quad (3)$$

Because Y_{1i} and Y_{0i} are never observed simultaneously, the joint distribution of $(\varepsilon_1, \varepsilon_0)$ is not identified, and consequently, ρ_{10} cannot be estimated. We assume that $\rho_{10} = 1$ since δ is estimable only up to a scalar factor (Lokshin & Sajaia, 2011).

The log-likelihood function for the simultaneous system of Equations (1), (2a) and (2b) is presented as:

$$\begin{aligned} \ln L = & \sum_{d_i \neq 0, Y_i \neq 0} w_i \{\ln(\Phi_2(X_{1i}\beta_1, Z_i\delta, \rho_1))\} + \sum_{d_i \neq 0, Y_i = 0} w_i \{\ln(\Phi_2(-X_{1i}\beta_1, Z_i\delta, -\rho_1))\} \\ & + \sum_{d_i = 0, Y_i \neq 0} w_i \{\ln(\Phi_2(X_{2i}\beta_0, -Z_i\delta, -\rho_0))\} + \sum_{d_i = 0, Y_i = 0} w_i \{\ln(\Phi_2(-X_{0i}\beta_0, -Z_i\delta, \rho_0))\} \end{aligned} \quad (4)$$

where Φ_2 is the cumulative distributive function of a bivariate normal distribution and w_i is an optional weight for observation i .

The ESP model can be identified by the nonlinearities of its functional form (Lokshin & Sajaia, 2011); however, to have a more robust identification, we included at least one exclusion restriction. Hence, Z in Equation (1) contains at least one variable not in X , in Equations (2a) and (2b). Following the literature, we use a set of binary variables that captures the availability of either bank or microfinance institutions (MFIs) at the level of municipality, age under 18 and working in the agricultural sector as instruments in the access to finance model that are excluded from X in the outcome model. The rationale behind using the availability of either bank or MFI at the level of municipality as an instrument is that youths in the municipality where there is a bank or MFI branches are more likely to have access to finance than youths in the province where there is no bank or MFI branch (Minetti & Zhu, 2011). Also, this variable cannot drive the entrepreneurship intention nor the performance of the youth's enterprise. Besides, in Benin, access to credit is allowed to youths who are above 18 years old. We think that this variable is a good instrument in the access to finance equation in the context of Benin. Lastly, many studies have shown that micro and small enterprises in the agricultural sector are less likely to access finance than those in other sectors of activity (Metelerkamp et al., 2019). To test the validity of the instruments, we conducted Sargan's test to test the correlation between the instruments excluded and error terms (Sargan, 1958) and the Wald test to test the joint significance of the instruments excluded, which helps in testing the hypothesis of weak instruments.

Following Aakvik et al. (2005) and Lokshin and Sajaia (2011), after estimating the parameters of the ESP model using the full information maximum likelihood method, we can compute the average treatment effect on the treated (ATT) and the average effect of the treatment on the untreated (ATU) as follows:

$$ATT = E[\Pr(Y_1 = 1|d = 1, X = x)] - E[\Pr(Y_0 = 1|d = 1, X = x)] = E\left[\frac{\Phi_2(X_1\beta_1, Z\delta, \rho_1) - \Phi_2(X_0\beta_0, Z\delta, \rho_0)}{F(Z\delta)}\right] \quad (5a)$$

$$ATU = E[\Pr(Y_1 = 1|d = 0, X = x)] - E[\Pr(Y_0 = 1|d = 0, X = x)] = E\left[\frac{\Phi_2(X_1\beta_1, Z\delta, \rho_1) - \Phi_2(X_0\beta_0, -Z\delta, -\rho_0)}{F(-Z\delta)}\right] \quad (5b)$$

where F is a cumulative function of the univariate normal distribution and Φ_2 is the cumulative function of the bivariate normal distribution. Equations (5a) and (5b) compute the ATT and the ATU.

However, the ESP, as well as the ESR model, can sometimes be sensitive to exclusion restriction assumptions; hence, to check the robustness of the endogenous switching results, we also estimated the ATTs using the propensity score matching (PSM) approach (Caliendo and Kopeinig, 2008; Brookhart et al., 2006).

3.2 | Data

The data used in this study is from the second wave of the School-To-Work Transition Survey (SWTS) collected in 2015. The survey was conducted by the International Labour Organization (ILO). The ILO-SWTS provides a high-quality dataset, which includes detailed information on young adults' educational outcomes, job training, work history, job types, socio-demographic characteristics, access to finance and employment status including the entrepreneurship outcome as well as many other variables about the environment and the firm's characteristics at the national level. Since its launch in 2012 for the special case of Benin, the ILO-SWTS surveys a representative sample of the youth in the transition to the labour market. The first wave of the survey in 2012 included 6917 youths. The second wave had a total sample of 4305 youths, comprising 57% of rural youth (2449) of whom 52% are women (1270). Finally, we used 925 observations in our analysis after removing observations with missing information.

4 | RESULTS AND DISCUSSION

4.1 | Descriptive results

Two outcome variables are used in this study. The entrepreneurship status and turnover. Entrepreneurship status is a binary variable that takes the value 1 for the self-employed youth/working in a family business without remuneration and 0 otherwise. Working youths were asked the following question, 'In your job/activity, are you ...?' Responses could include: (1) an employee; (2) an employer (employing at least on the employee); (3) an own-account worker (not employing any employee); (4) a member of a producers' cooperative; (5) helping without pay in the business or farm of another household/family member; and (6) other. We generated the self-employment youth variable by combining the third, fourth and fifth questions since the ILO-SWTS identifies a young entrepreneur as a working youth who reports being an employer, own-account worker or member of a producers' cooperative. The turnover of the youth's enterprise is a continuous outcome variable, obtained by asking the following question, 'last month, what was the total revenue of your business?'

Access to finance is a binary variable that takes the value 1 if the youth has access to a formal financial service and 0 otherwise. Survey respondents were asked the following question: 'What financial services do you personally use?' A rural working youth could report using business loans, emergency loans, consumption loans, savings, insurance and/or remittances/money transfer services. If any type of these financial services was reported, we consider the youth as having 'access to finance'.

Tables 1 and 2 display the mean difference in the outcome, selection and gender variables of rural youth respondents by gender and access to finance. Male youths are more likely to access finance than female youths. About

TABLE 1 Mean difference in outcome and selection variables by gender

Variable	Definition	Total sample	Gender		t-Test
			Female	Male	
Entrepreneurship status (%)	Self-employed youth/working in a family business (1 = yes)	38.96 (61.04)	34.70 (65.30)	42.42 (57.58)	1.930*
Turnover	Last month total revenue of the business	9,736.10 (24,862.03)	9,780.301 (25,639.35)	9,706.743 (24,425.05)	-0.022
Access to finance (%)	1 = if accessed any type of financial services and 0 otherwise	14.41 (85.59)	15.27 (84.73)	13.62 (86.38)	-1.160

Note: Standard errors in parentheses.

* $p < .10$.

TABLE 2 Mean difference in outcome and gender variables by access to finance

Variable	Definition	Full sample	Access to finance		t-Test/ χ^2
			Yes	No	
Entrepreneurship status	Self-employed youth/working in a family business (1 = yes)	61.04	65.95	58.84	1.65**
Turnover	Last month total revenue of the business	9,736.103 (24,862.03)	15,115.35 (31,560.72)	7,742.618 (21,641.03)	-2.023**
Gender (%)	=1 if the youth is male, 0 otherwise	51.86	49.01	52.34	1.15

Note: Standard errors in parentheses.

** $p < .05$.

49% of rural young women are financially excluded although there is no significant difference between the two groups. This is explained by the fact that female entrepreneurs in developing countries in general and especially in Benin have limited access to resources, particularly land, that may facilitate access to credit. However, the young women that had access to finance had a greater turnover than those who did not have access.

Among young people who have access to financing, about 66% are in rural entrepreneurship against 58.84% in the group of youths who do not have access to finance. The significance of this difference confirms the key role of financial inclusion on entrepreneurship status in developing countries, particularly in rural Benin. This effect is confirmed by the cumulative distribution functions (CDFs) of the two groups in Figure 1, which shows that the CDF for men dominates that of women. On average, 86.61% of rural youth who do have access to finance are educated against 78.05% in the group of those who do not have access to finance.

4.2 | Empirical results

4.2.1 | ESP and ESR estimates of entrepreneurship status and turnover

The full information maximum likelihood estimates of the driving factors of access to finance (selection equations) and impacts of the access on the entrepreneurial status and enterprise performance in terms of turnover (outcome equations) in the ESP and ESR models are presented in Table 4. Columns 1 and 4 in Table 4 present estimates of the selection equations for entrepreneurship status and the turnover, respectively. Most of the variables in the model have hypothesized signs. We performed the endogeneity test and the results of the tests are presented in Table 3.

The estimates of the selection equations show that there is no significant gender difference in rural youths' access to finance. This is consistent with Aterido et al. (2013), Mndolwa and Alhassan (2020) and Muravyev et al. (2009), who find that being female does not affect access to formal financial services. The age of rural youth positively and significantly determines access to finance. Younger people are less likely to have access to finance. The results also

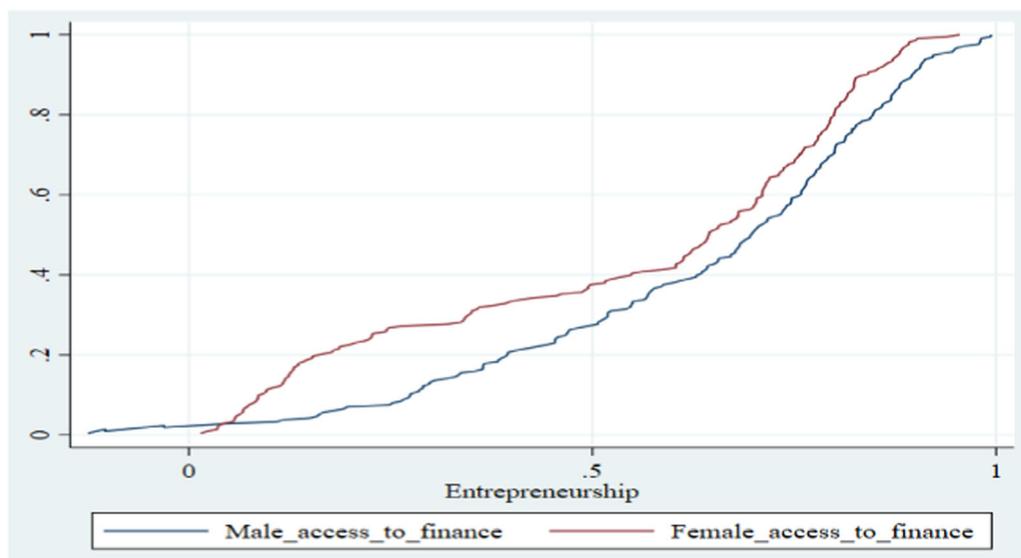


FIGURE 1 Cumulative distribution functions of rural youth entrepreneurship by access to finance [Color figure can be viewed at wileyonlinelibrary.com]

TABLE 3 Test of endogeneity and validity of instruments

<i>Test of endogeneity and validity of instruments</i>	
Robust score χ^2 (1)	3.925** (.0476)
Robust regression F (1909)	3.994** (.0460)
<i>Test of validity of instruments</i>	
Score χ^2 (2)	1.431 (.488)

Note: p -value in parentheses.

** $p < .05$.

indicate that education is important for youths to access finance. This is consistent with the findings of Ghosh and Vinod (2017) in India. Having some years of working experience is also significant in supporting access to finance. In addition, the financial situation of the youth is key in explaining rural youths' access to finance. The results also show that the existence of banks and MFIs in the vicinity of the residence area of the youth has a positive and statistically significant effect on access to finance. However, working in the agricultural sector has a negative and significant influence on the probability of rural youth accessing finance. This finding is consistent with the reality in developing countries where farmers have too many barriers to access credit.

The results further show that the parameter ρ_0 , which measures the correlation between the error term of the selection equation and the outcome equation for those that did not have access to finance, is significantly different from 0. There is therefore self-selection in access to finance by rural young people. This implies that if rural youths who did not have access to finance gained it, the effect may not be similar to the effect on those who accessed finance because there are systematic differences between youths who had access to finance and those who did not. Moreover, the results of the likelihood ratio test for the joint independence of the three equations reject the null hypothesis of independence, implying that the errors are correlated and therefore estimating ESR/ESP is appropriate (Table 4).

TABLE 4 Determinants of rural youth access to finance, entrepreneurship status and turnover

Variables	Entrepreneurship status			Turnover		
	Selection model (1)	Access (2)	No access (3)	Selection model (4)	Access (5)	No access (6)
Number of employees (ln)	—	—	—	−1.996 (1.375)	3.006* (1.788)	0.200 (0.436)
Operating expense (ln)	—	—	—	0.0213 (0.0698)	0.905*** (0.0522)	0.829*** (0.0409)
Gender (1 = male)	0.147 (0.170)	0.424* (0.233)	−0.361*** (0.117)	0.468 (0.569)	−0.428 (0.511)	0.124 (0.279)
Age (ln)	2.214*** (0.707)	0.511 (0.845)	−1.162*** (0.318)	3.474 (2.386)	−3.719** (1.585)	0.877 (0.822)
Especial training (1 = yes)	−0.0765 (0.191)	0.880*** (0.280)	0.524*** (0.167)	−0.297 (0.671)	−1.197** (0.513)	−0.468 (0.425)
Experience (1 = yes)	0.0268 (0.183)	−0.760** (0.310)	−0.532*** (0.127)	1.043* (0.558)	1.094* (0.562)	1.109*** (0.371)
Married (1 = yes)	0.468 (0.291)	−0.635* (0.344)	−0.309* (0.162)	0.495 (0.655)	0.112 (0.649)	0.0795 (0.333)
Poor (1 = yes)	0.422*** (0.162)	−0.201 (0.227)	−0.170 (0.106)	0.675 (0.691)	−0.343 (0.373)	0.148 (0.251)
Have a child (1 = yes)	−0.374 (0.274)	−0.478 (0.385)	−0.354** (0.159)	−0.211 (0.673)	0.249 (0.708)	−0.348 (0.348)
Make money goal (1 = yes)	−0.151 (0.173)	−0.114 (0.232)	−0.0270 (0.107)	0.0810 (0.543)	−0.165 (0.388)	−0.275 (0.267)
Professional succes (1 = yes)	—	—	—	−0.476 (0.574)	−0.320 (0.450)	0.644* (0.346)
Educated (1 = yes)	−0.679** (0.269)	−0.146 (0.315)	−0.0262 (0.126)	−0.928 (0.794)	0.283 (0.383)	0.383 (0.264)
Father_educated (1 = yes)	0.121 (0.180)	−0.512* (0.275)	−0.0957 (0.134)	—	—	—
Mother_educated (1 = yes)	−0.414** (0.197)	−0.273 (0.273)	−0.121 (0.176)	—	—	—
Father entrepreneur (1 = yes)	−0.138 (0.160)	0.511** (0.237)	0.386*** (0.113)	—	—	—
Mother entrepreneur (1 = yes)	−0.597** (0.240)	−0.159 (0.340)	0.0575 (0.134)	−0.616 (0.490)	−0.142 (0.496)	0.250 (0.310)
Age under18	0.259 (0.283)	—	—	2.679* (1.441)	—	—
Bank branch	3.516*** (0.260)	—	—	4.247*** (0.720)	—	—
Agriculture_sector	−0.788*** (0.249)	—	—	−1.569*** (0.557)	—	—

TABLE 4 (Continued)

Variables	Entrepreneurship status			Turnover		
	Selection model (1)	Access (2)	No access (3)	Selection model (4)	Access (5)	No access (6)
Constant	—	0.0439 (2.521)	4.541*** (0.990)	—	12.42** (4.934)	−2.732 (2.554)
Model diagnosis	—	—	—	—	—	—
ρ_0	—	—	—	—	—	0.163* (0.0939)
ρ_1	—	—	—	—	−0.727 (0.502)	—
Likelihood ratio test of independent equations χ^2 (1)	—	6.67** (0.035)	—	—	5.76** (0.056)	—
Observations	—	925	925	—	253	253

Note: Standard errors in parentheses.

* $p < .10$.

** $p < .05$.

*** $p < .01$.

The difference in the coefficient estimates between rural youths' access and non-access to finance indicates the superiority of switching the regression to a simple treatment effect model. Specific to this study, the differences in the estimates of entrepreneurship intention are noticeable for gender, marital status, training, experience and a role model in terms of father being an entrepreneur. Among the beneficiaries of financial services, young men are more likely to engage in entrepreneurship than young women. On the contrary, they are less likely to engage in entrepreneurship than young women in the case of no access to finance. These gender differences in entrepreneurship are explained by the fact that a large percentage of women's businesses are very small and not part of the formal economy. Moreover, they are also due to the lack of access to finance that is related to more limited social capital (Marlow & Patton, 2005). This finding is consistent with the works of Guzman and Kacperczyk (2019) and Wellalage and Locke (2017), who concluded that women are relatively more constrained than men and more discriminated against in new ventures. Our findings also confirm the work of Santos et al. (2018), who report that the entrepreneurial intention of women is lower than that of men. For instance, women are seen as experiencing more complexity in career choices, such as rural entrepreneurship, because of the need to balance work and family roles and tend to set up their new ventures with lower start-up capital than men.

As far as education is concerned, the results show that youths engaging in rural entrepreneurship in Benin are mostly uneducated or less educated, confirming the necessity nature of their entrepreneurship. In other words, most educated young people are not interested in participating in agriculture because they believe that the sector is not prestigious enough for their social position. Our findings are consistent with the study of Brixiová et al. (2020) that found that lower education is associated with higher rates of necessity rather than opportunity entrepreneurship.

Given the heterogeneity between access and non-access in both observable and unobservable characteristics as discussed above, the simple mean differences in entrepreneurship status and turnover given in Table 2 do not provide the true probability of engagement in entrepreneurship and rural enterprise performance of access to finance. A more robust impact of access to finance is given by the estimates of the ATT for youth entrepreneurship and turnover (Table 5). Unlike the mean differences in Table 2, the ATTs show the change in entrepreneurship status and turnover after accounting for selection bias arising from systematic differences in observable and unobservable characteristics between youths who had access to finance and those who did not.

The results indicate that access to finance significantly increases youth engagement in rural entrepreneurship as well as the performance of their rural businesses. The results show that access to finance increased the probability of becoming an entrepreneur by 15.2% for youths who had access to finance, with a gender gap of 5.24% (Table 6).

TABLE 5 ATT and ATU from ESP and ESR results

Mean of the outcome variables	Treatment effect	ATEs
Entrepreneurial status	Youth who has access to finance (ATT)	0.152*** (0.019)
	Youth who does not have access to finance (ATU)	0.043*** (0.008)
Turnover	Youth who has access to finance (ATT)	0.158* (0.504)
	Youth who does not have access to finance (ATU)	0.299*** (0.289)

Note: Standard errors in parentheses. The turnover is in natural logarithms.

Abbreviations: ATEs, average treatment effects; ATT, average treatment effect on the treated; ATU, average effect of the treatment on the untreated; ESP, endogenous switching probit; ESR, endogenous switching regression.

* $p < .10$.

*** $p < .01$.

TABLE 6 Gender gap in rural youth entrepreneurship engagement impact of access to finance

Entrepreneurial engagement	Treatment effect	ATE
Young male	Youth who has access to finance (ATT)	0.174*** (0.019)
Young female	Youth who has access to finance (ATT)	0.122*** (0.022)

Note: Standard errors in parentheses.

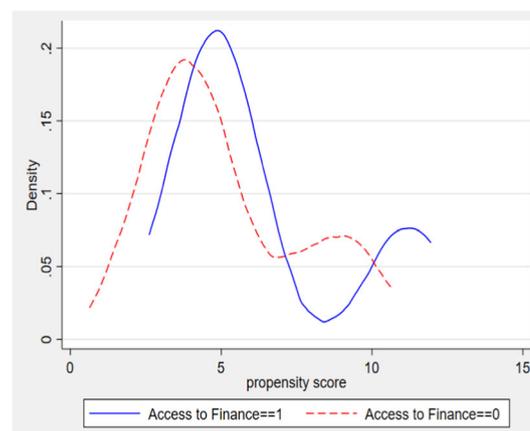
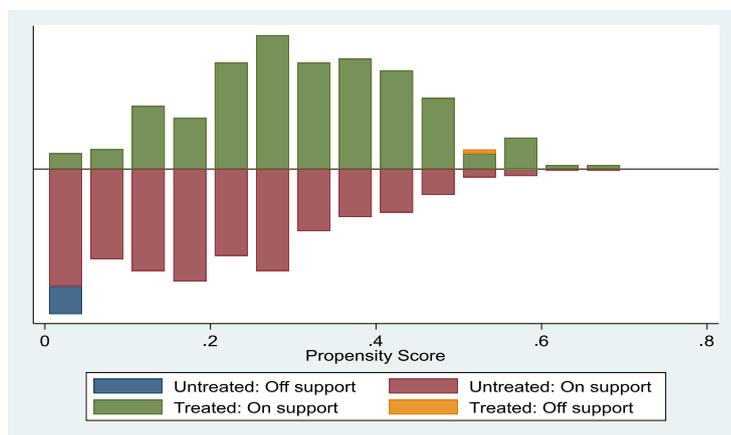
*** $p < .01$.

Similarly, youths who did not have access to finance would have increased their probability of becoming an entrepreneur by 4.33% if they had had access to finance (Table 5). The results of this study are in line with previous studies including Mehari et al. (2021) and Kim (2020) that support the gender gap and the positive effect of access to finance on entrepreneurship.

4.2.2 | Robustness check: propensity score model

The results from the ESP and the ESR models above may be sensitive to the exclusion restriction assumption; hence we also used the PSM approach to check the robustness of the estimated effects. We compared our ESP and ESR results with results from standard PSM that are presented in Table 5. The same variables were used in the estimation of propensity scores. In looking at the density distributions of the estimated propensity scores for the two groups (Figure 2), we conclude that the common support condition is satisfied: there was a substantial overlap in the distribution of the propensity scores of both rural youths who had access to finance and those who did not. The bottom half of the graph shows the distribution of propensity scores for the group of youths who did not have access to finance and the upper half refers to those who had access to finance.

Table 7 provides the ATT estimates from the PSM approach. Similar to the ESP and ESR results, the PSM estimates show that both entrepreneurship status and turnover are significantly higher for youths who had access to finance relative to their counterparts that did not. However, compared with the ESP and ESR results, the estimated effects from the PSM approach are relatively large, probably because the latter does not take into account the selection on unobserved characteristics.



i)

ii)

FIGURE 2 (i) Common support for propensity score estimation and (ii) propensity score density distribution. *Note:* The densities of the propensity scores are on the y-axis. ‘Treated: on support’ indicates the individuals in the access to finance group who found a suitable match. ‘Treated: off support’ indicates the individuals in the access to finance group who did not find a suitable match [Color figure can be viewed at wileyonlinelibrary.com]

TABLE 7 Results from propensity score matching

Outcome variables	Matching algorithm	Mean value of outcome variables		ATT
		Access to finance	Non-access to finance	
Entrepreneurial status	NNM	0.321	0.117	0.204** (0.087)
	KBM	0.321	0.118	0.202** (0.100)
Turnover	NNM	5.020	4.044	0.241* (0.876)
	KBM	5.020	3.583	0.401* (1.860)

Note: Standard errors in parentheses.

Abbreviation: ATT, average treatment effect on the treated; NNM, nearest-neighbor matching.

* $p < .10$.

** $p < .05$.

5 | CONCLUDING REMARKS

This study assesses the impacts of access to finance on entrepreneurship status and rural enterprise performance in terms of turnover using data collected from the second wave of the ILO-SWTS. The paper employs the ESR technique, combined with PSM, to investigate the drivers of rural youths’ access to finance and its impact on entrepreneurship status and performance.

Our results show that, while there is no evidence of the gender gap in access to finance, there is a significant gender gap in entrepreneurial intention among rural youths in Benin. Indeed, providing affordable financial services to young people increases the probability of entrepreneurial status of rural youths by 15.2%. Furthermore, the study shows a significant gender gap in rural entrepreneurship of 5.24% among youths who had access to finance in Benin.

The results indicate that age, education, poverty status, working in the agricultural sector and the existence of a bank branch are important determinants of rural youths’ access to finance. Effective access to finance is therefore key in increasing rural youth engagement in rural entrepreneurship activities as well as the performance of their

enterprises. Young people with access to financial services from formal institutions are likely to engage in entrepreneurship. This confirms the empirical results that show that entrepreneurship in developing countries depends largely on external financing. Based on these results we draw some policy implications. Financial institutions should be encouraged to facilitate the access of youths, and especially female youths, to finance by reducing their credit eligibility conditions for those who do not have collateral.

ORCID

Melain Modeste Senou  <http://orcid.org/0000-0002-9759-1307>

Julius Manda  <http://orcid.org/0000-0002-9599-5906>

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