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SOCIOECONOMIC DETERMINANTS OF THE CREATION OF FARM BUSINESS BY YOUTH IN NORTH-WESTERN BENIN

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ABSTRACT

The high potentials of the agricultural sector in terms of income and jobs in Benin contrasts with unemployment among youth. Thus, this study investigated the socioeconomic factors determining the creation of farm business by youth in the northwest of Benin. Based on a random sample of 198 young farmers and with the criteria of labor and market dependence, a typology of the farms was made. Then, an analysis of the determinants of farm business creation was carried out by using a logistic regression model. The results showed that there are four types of farms in the study area, namely: modern farm business, family farm business, modern family farm and peasant family farm. Whereas "family farm business" is characterized by both a dominance of market dependence and a family labor, the most developed form, the "modern family farm," is characterized by both a dominance of self-consumption and a hired labor, adopted by few. Based on the market dependence criterion only, those four farming types were re-grouped into two main types: family farm and farm business. Whereas family farm is characterized by a dominance of self-consumption, farm business is market-oriented. From this typology, it emerged that there are more farmers with basic education and basic training in agriculture, belonging to an agricultural association and having land ownership in farm businesses than in family farms. The results also showed that professional training in agriculture and land ownership positively influenced the creation of farm business, whereas, savings, number of family agricultural workers and contact with agricultural extension services negatively influenced it. This suggests that making credit more attractive and developing a new type of coaching to support young entrepreneurs would be more favorable to the emergence of farm businesses. Integrating these results could help to improve the orientation of policies and projects devoted to promoting agricultural entrepreneurship among youth in Benin.

Key words: Farmers, Agri-business, Entrepreneurs, Entrepreneurship, Employment of youth, Farming, Determinants, Benin

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INTRODUCTION

Entrepreneurship is nowadays an important issue in all countries, especially in developing countries. Indeed, entrepreneurship is not only a tool for improving the economic performances and competitiveness of a country at the international level, but also a strategic solution to the problem of unemployment through improvement of job creation and integration of youth into the economic tissue [1]. Now that governments have understood the importance of such businesses (especially small enterprises) in the economic development of their countries, the various questions related to the entrepreneur and his/her business are very topical [2]. Accordingly, many states have developed policies that aim at stimulating, helping and coaching entrepreneurs and business creation project initiators. These policies target the establishment of a general economic climate conducive to the creation of businesses and stimulating entrepreneurship by a set of specific incentive measures or by the establishment of new structures and organizations [3]. Starting a business is therefore, a major objective and challenge for several countries, especially for developing countries [4], like Benin. Thus, given that the economy in those countries is farm-based, farm entrepreneurship is at the front line of their development. In that perspective, social policies that can allow young rural people to settle in their environment become imperative [5].

Such a policy is outmost essential for a country like Benin whose socioeconomic development mostly relies on the agricultural sector. Indeed, the agricultural sector alone contributes annually 33% to the country's Gross Domestic Product (GDP) [6]. Unfortunately, efforts to promote entrepreneurship remain weak and the outcome obtained so far is very poor. According to available statistics, the proportion of businesses in the agricultural sector is only about 0.06% of the total number of firms listed in Benin, with a very striking regional disparity [7]. Thus, in agricultural regions such as north-western Benin and particularly in the department of Atacora, the number of farm businesses represents only 1.3% of the agricultural enterprises nationwide. Whereas it is true that these statistics do not take into account agricultural products processing companies and family farms, they are nevertheless indicative of the low degree of entrepreneurship of youth in the agricultural sector in Benin, in general, and in the north-western part of the country in particular. In this region and especially in the department of Atacora, the unemployment rate is estimated at around 1.2% against a national average of 2.3%, which hides the reality of underemployment that is estimated at around 78% [8].

Despite this bleak picture of the overall employment situation, attention is still focused on the agricultural sector whose immense potential has so far been less valued. Although it could be admitted that more than 60% of the active population is engaged in agriculture, it is easy, however, to notice that these are mostly family farms with low productivity and primarily oriented towards subsistence. Therefore, there is still a strong potential for the development of more productive and marketable agriculture, thus the development of real farm entrepreneurship. It is in this perspective that most of the entrepreneurial policies developed by policy makers to address the challenge of youth unemployment seek to exploit this potential of the agricultural sector.

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Unfortunately, as reported by National Institute of Statistics and Economic Analysis (INSAE), the actions to exploit this strong potential of the agricultural sector in providing new income opportunities to youth in rural areas, the capacity of meeting the specific requirements of youth, and obtaining their involvement in the agricultural sector or other alternatives to overcome obstacles are still poorly documented [9]. Even though some authors like Bélières *et al.* [10], have devoted themselves to studying the forms of farming, they failed to specifically address the agricultural businesses as managed by youth. Thus, this study focused on the determinants of the creation of farm businesses by youth in north-western Benin. It aims at contributing to a better understanding of the entrepreneurial issue of youth in the agricultural sector in Benin thereby enriching the database available on this axis of the scientific research.

MATERIALS AND METHODS

Farm typology approaches

Defining the concept of business in the agricultural sector is equivalent to determining the boundaries between farm and business. Farm or agricultural holding is an economic unit of agricultural production that is subject to a single management and comprises all the animals found there and all the land used, wholly or in part, for agricultural production, regardless of title of ownership, its legal status or size [11]. Single management may be exercised by an individual, by a household, jointly by two or more individuals or households, by a clan or a tribe or by a legal entity such as a company, collective enterprise, cooperative or state body [11]. The farm can therefore, be attached either to a household, or to one or several moral or physical persons (company, cooperative, state body). This characterization of farming calls for two conceptions of agriculture which are increasingly used: family farming and entrepreneurial farming. The first one essentially mobilizes family labor and differs from the second one which focuses exclusively on hired labor [12]. In that respect, one could ask: “is a farm a business?”

The economic theory has given rise to several conceptions of the enterprise (firm), ranging from an economic agent of production for the market to a form of organization distinct from the market in charge of adjusting contracts, or an institution that regulates interactions between individuals or groups of individuals [13]. With regard to the objectives of this study, the classic definition of the enterprise as an economic unit of production is pertinent. In that respect, the enterprise can be defined as an autonomous economic unit combining different production factors, producing goods and services for sale and distributing income as compensation for the use of the production factors [14]. This definition calls for three variables for the characterization of an enterprise: i) the autonomous unit, ii) the production unit and iii) market production. By crossing the definitions of the enterprise and that of the farm, it appears that the farm is an autonomous production unit. But, to become a business, in the economic meaning of the term, “farm” must implement a market-driven production, as stated by Lamarche [15]. Indeed, this author distinguishes the enterprise/business from the farm by the criterion of dependence on the markets. This criterion assesses the degree of dependability of agricultural products, their services and farm inputs to the markets. Farm can, therefore, be considered as an enterprise only if its dependability to the

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market is positive. To refine his analysis, Lamarche [15] combined this main criterion of differentiation between farm and farm business (agricultural enterprise) with a second variable: family functioning. This variable measures the relative importance of family labor compared to hired labor, as well as the more or less family nature of access to production factors. This new variable makes possible the subdivision of the farm business into modern farm business and family business; but the family farm or family agricultural holding can also be divided into modern family farm and peasant family farm.

Based on the typology of Lamarche [15], and taking into account the context of the study area, the use of hired labor (HL) and family labor (FL) in the production process were chosen as indicators of family functioning [11]. Thus, family functioning is:

- Positive if the farm uses relatively more family labor than hired labor; thus HL ≤ FL;
- Negative if the farm uses more hired labor than family labor; thus HL > FL.

With regard to market dependence, as also stated by Lamarche [15], the dependence rate (DR) was considered and defined as the ratio between the marketed production (MP) and the total production (TP) of the farm. Thus, dependence to the market is:

- Positive if DR > 50%
- Negative if DR < 50%
- Null if DR = 50%

By considering these two criteria, a typology of the farms in the study area was made and presented in Table 1.

In order to simplify the analysis of the determinants of the creation of farm businesses by youth in north-western Benin, it is only the criterion of market dependence (DR>50%) that has been considered because of the importance generally given to this criterion in the definition of farm business. Indeed, entrepreneurial promotion policy in the study area is nowadays oriented towards the creation of market-oriented farm business. Thus, the four identified farm categories were grouped into two types of farms: farm business and family farm.

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Study area, sampling and data collection

Of the two departments in the north-western part of Benin, the Atacora department has been selected as the study area because of its importance in the agricultural sector. Located between 9°45 and 11°3 North latitude and 0°45 and 2°10 East longitude, the Atacora department covers an area of 23,856 km^2. From this department, three municipalities were selected according to their agricultural potentials and their importance in promoting youth entrepreneurship. These municipalities were: Boukombé, Natitingou and Kouandé (Fig.1). In each municipality, two districts were chosen based on their accessibility and their importance in agricultural production.

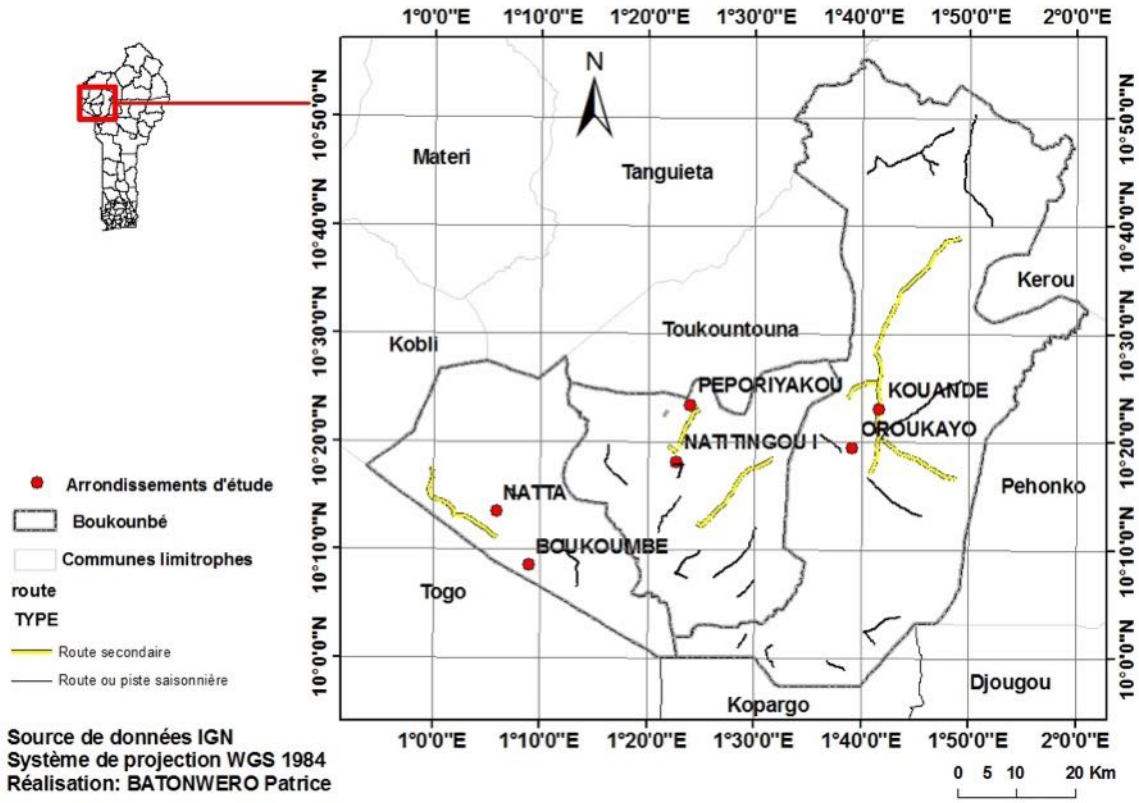

Figure1: Study area

The research units were the agricultural holdings represented by the heads of holdings that were 15 to 35 year-old individual producers. From a list of producers provided by the agricultural extension services, 33 farms were randomly chosen per district, thereby constituting a sample of 198 farms.

Data collection was done on the basis of semi-structured interviews using an individual questionnaire and focus groups. Data were collected on both the socioeconomic characteristics of the producers, and the organization and functioning of the selected farms. The typology of the farms is based on the approach of Lamarche [15] and allowed to form four groups of farms (Table 1). The analysis of the determinants of the creation of farm business was done using a logistic regression model carried out with the STATA 15 software.

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Specification of the regression model of farm business creation

In statistical analysis, the decision to adopt a system or a technological package is considered as a dichotomous variable that can only take two modalities: 0 or 1; and depends on the characteristics of the adopter. For analyzing the decision to adopt or not a technology, there are several so-called dichotomous models in the literature: logit, probit and tobit. According to Neupane *et al.* [16], logit and probit models are the most used and are models in which the probability of a dichotomous variable is related to a set of explanatory variables that are supposed to influence the dependent variables. However, it was the logit model which is based on a cumulative logistic probability function, easier and more convenient to use [17] that was used for this study. According to this model, the decision to create a farm business or not is influenced by a combination of factors. Theoretical forms of such models are largely developed in the literature [18], [19], [20]. Based on these models, many authors have developed several empirical models in studies relating to the adoption of production systems or new technologies in the agricultural sector [21], [22], [23], [24], [25], [26]. Following these authors, we developed our empirical equation as follows:

$$P\left(Y_i = {}^{1}/_{CREATE}\right) = \frac{1}{1+e^{-X}} \quad (1)$$

The theoretical model is established on the assumption that the creation of farm business by youth is influenced by a number of socio-demographic and economic characteristics denoted by X of the respondent. Thus, the creation of farm business by youth specified in Equation 1, can be a linear combination of variable Xi whose mathematical expression can be written as in Equation 2:

$$Y_i = \beta_0 + \beta_1 EDUC + \beta_2 BAT + \beta_3 LANOW + \beta_4 SAVE + \beta_5 MAO + \beta_6 NAW + \beta_7 AES + u_i \quad (2)$$

Where Y_i *is creation of farm business by youth i,* β_0 is the constant term, β_i to β_7 are the coefficients to be estimated, μ_i the error terms, EDUC the basic education, BAT the basic agricultural training, LANOW the land ownership, SAVE the saving, MAO, the membership of an agricultural organization, NAW the Number of active workers in the household and AES, the Agricultural Extension Service.

The quality of the model was determined by the significance threshold of the chi-square value or the likelihood ratio (LR) or by the log of the maximum likelihood [22]. The variables introduced into the model are based on previous studies [10, 27] and on the observations made in the study area.

From the socioeconomic variables collected, three groups of variables that could potentially explain the entrepreneurial choice in the agricultural sector among youth were identified. They were i) resource factors (labor, capital, land) ii) factors relative to the creator skills (basic agricultural training, basic education) and iii) factors relative to the entrepreneur or business environment (membership of an agricultural organization, contact with agricultural extension). The explanatory variables as well as the expected signs of each of them are described in Table 2.

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As the risk of collecting biased quantitative data (for instance landholding sizes, credit amount…) is very high, because they are rarely registered and landholders are often reluctant to give precise information about their patrimony, the preference was given to qualitative data in the questionnaire. Therefore, landholding, capital, for instance, were addressed respectively in terms of land access and savings and used in the model of regression. Through backward selection the relevant variables were finally retained in the regression results (Table 5). Because the estimated parameters are in the log-odds scale, which, other than the sign, does not have any useful interpretation ([28]), marginal effects are used (Table 5). The marginal effects make it possible to estimate the impact of each modality on the probability that the studied event occurs or does not occur. When the marginal effect of a modality is positive, it is interpreted as an increase in the probability at this level compared to that of the reference modality. In the case where the marginal effect has a negative sign, it is interpreted as a decrease in the probability for individuals with this modality compared to that of their counterparts with the reference modality [28].

RESULTS AND DISCUSSION

Socioeconomic characteristics of the selected entrepreneurs

With an average age of 30 years and the mean number of active household members not exceeding 2, most of the farmers had basic education and were married. Few of the farmers received a basic agricultural training and belonged to a farm organization, or had regular contact with agricultural extensive services (Table 3). To create their farms, the majority of the young entrepreneurs used their own land and to some extent their savings.

Typology of youth farms

Following the classification of Lamarche [15], the results showed four types of farms (Table 4). The basic form called “peasant family farm” which is characterized both by a dominance of family labor and self-consumption, represented only 24.2% of the created farms. This form that is not specific only to the study area, has been widely highlighted by many authors such as Bélières *et al* [10], Toulmin and Gueye [29], Berti and Lebailly [30], Degla and Dedewanou [22], Cirad [31], Deon and Fox [32], FAO [33] and Sossou [34] in their respective studies in many developing countries and particularly in sub-Saharan Africa. In contrast to the basic form, the “modern farm business” represented 18.2% of the created farms and was characterized both by a dominance of hired labor and market dependence. Between these two forms the “family farm business” and the “modern family business” represented 52.5% and 5.1% of the created farms, respectively. Whereas the “family farm business,” characterized both by the dominance of market dependence and family labor was the most prevailing form, the “modern family farm” characterized by both a dominance of self-consumption and a hired labor was less adopted. According to these results, the difference between “family farm business,” the most common form and the “Peasant family farm,” the basic form, could be attributed to the importance of the market dependence factor. Since the entrepreneurial promotion policy in Benin is based on the creation of market-oriented farm business, the market dependence factor is important for the analysis of

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farm creations. Therefore, by only using a market-based criterion, the results showed that 70.2% of the young entrepreneurs managed farms whose production was primarily oriented towards the market (in other words farm businesses); whereas in farms with primarily subsistence-based production, the family farms, accounted for 29.3%. These two forms were used for the following analyses of the determinants.

Factors determining the creation of farm business by youth in the study area

The results showed that the regression model used was globally significant at the 1% threshold. From the pseudo-R^2 value, 30.9% of the variations in the dependent variable were explained by the variations in the explanatory variables introduced into the model (Table 5).

The results also showed that, whereas the variables "basic vocational training" and "number of agricultural workers" were both significant at 5%, land ownership was significant at 1%, while saving and contact with agricultural extension services were significant at 10%.

According to these results, basic agricultural training appeared as a key factor that positively influences the choice of agricultural entrepreneurship. When a youth has a basic vocational training in agriculture, the probability that he/she will create an agricultural business increase by 24.4%. Indeed, having a basic training in agriculture confers knowledge and technical know-how or practical skills that make the young entrepreneur more apt to run a farm business rather than a family farm. This predisposition, therefore, increases the likelihood that a young holder of such training will turn more towards a modern type of agricultural entrepreneurship. Conversely, the persistence of family farms was observed especially among youth who did not have any basic training in agriculture and who have evolved only under the dependence of their parents for acquiring entrepreneurial knowledge through the "learning by doing" process.

Basic vocational training and land ownership had a positive influence on the probability of adopting agricultural entrepreneurship. Thus, owning land increased the probability of being an agricultural entrepreneur by 39%. This suggests that the lack of direct access to land may be a limiting factor in the creation of farm businesses by youth in the study area. However, some authors such as Bélières *et al.* [10], although recognizing the importance of land ownership in their study in the Niger River Delta, put this importance in perspective by indicating that for the development of the agricultural economy of this region, land availability and access were not sufficient elements for the emergence of businesses.

Among other factors, savings had an unexpectedly negative influence on the creation of farm businesses. Although the creation of a farm business requires a relatively greater investment than creation of a family farm and which should logically be facilitated by the provision of own funds, the study showed that holding savings reduced the likelihood of adopting agricultural entrepreneurship by 19.%. In fact, despite the importance deserved by agricultural entrepreneurship, the uncertain nature of this sector of activity discourages potential young entrepreneurs from investing in it due to

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the non-mastery of many factors such as climatic hazards, biological and physical factors as also stated by Kay *et al*. [35]. Consequently, most of the youth prefer to use their savings in other more profitable activities such as trade and services, while running family-type farms inherited from parents to ensure their food security. On the other hand, also, the creation of farm business being supported by credit-based government programs, some youth prefer to exploit this opportunity and use their own savings for the financing of parallel activities such as off-farm activities. This negative correlation between internal resources and entrepreneurial activity in the study area is consistent with the results found in Mauritania, but contrary to those highlighted in Senegal by Deffa *et al*. [27] as part of their study on the determinants of youth entrepreneurship in West Africa.

Savings, 'contact with agricultural extension services' negatively influenced the engagement of youth in agricultural entrepreneurship. The probability of starting a business by a youth, decreases by 14.2% when he has contact with agricultural extension services. It appears that most youths do not see "contact with the extension service" as a necessary condition for starting their own business. Indeed, the services offered by extension officers are technical support or agricultural advice for ensuring good management of farms already settled. Using these services when setting up a business appears therefore, to be of little relevance to youth. Thus, a coaching model based on the dissemination of success factors of a business in creation would be more appropriate.

The trend towards negative influence was also observed when considering the number of agricultural workers in the household of young promoters, thus suggesting that the availability of family labor reduces the use of hired labor. Also, the large size of the household, in terms of agriculturally active members, induced a high number of mouths to feed, which increased the self-consumption of production. The combined effects of family labor and self-consumption ensure, then, the dominance of family farms among youth with large households.

CONCLUSION

The typology of farms created by youth shows the diversity of the form of agriculture practiced in the study area. These forms ranged from peasant family farming to modern family farming; and from family farm business to modern farm business, when one considers both labor and dependability to the market as criteria of appreciation. However, when using only the market-based criterion in terms of the production share devoted to the market, two categories of farms arise: family farm and farm business. Based on these two types of farms, the analysis of the determinants showed that basic training in agriculture and land ownership positively influenced the probability of starting a farm business. In contrast, savings, number of active household members and contact with agricultural extension services negatively impact the probability of young farmers to engage in agricultural entrepreneurship. These negative influences highlight not only the importance of attractive and accessible credit for young entrepreneurs, but also the need to develop another type of coaching that can better support young entrepreneurs in their decision to create an agricultural business. Due to the importance

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of agricultural entrepreneurship in the socioeconomic development of the country, capitalizing on the factors identified by this study in the development of entrepreneurship support programs could help to better promote the entrepreneurial engagement of youth in the study area. While it is true that the present study focused only on agricultural production, it urges, prospective future research to cover other fields such as food processing and livestock to generate a global and more accurate database that could widely be used in the promotion of agricultural entrepreneurship in the country.

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Table 1: Typology of farms in the study area

Modern farm business • DR > 50% • HL > FL	**Family farm business** • DR > 50% • HL ≤ FL
Modern family farm • DR < 50% • HL > FL	**Peasant family farm** • DR < 50% • HL ≤ FL

DR = Market Dependence Rate; HL= Hired Labor; FL= Family Labor

Source: Adapted from **Lamarche [15]**

Table 2: Variables introduced into the regression model

Categories	Variables	Code	Modalities	Expected sign
Resource factors (labor, capital and land)	Land ownership	LANOW	0 = No, 1= Yes	+
	Savings as a method of financing the farm business	SAVE	0 = No, 1= Yes	-
	Number of active household members	NAW		+
Factors relative to the creator skills	Basic agricultural training	BAT	0 = No, 1= Yes	+
	Basic education	EDUC	0 = No, 1= Yes	-
Factors relative to the entrepreneur/business environment	Membership of an agricultural organization	MAO	0 = No, 1= Yes	-
	Contact with agricultural extension service	AES	0 = No, 1= Yes	+

Source: Survey data, January 2019

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Table 3: Descriptive statistics relative to the selected farmers

Quantitative Variables	Farm Businesses (140)		Family Farms (58)		All Farms (198)	
	Means	Standard deviation	Means	Standard deviation	Means	Standard deviation
Age	30	3.58	30	3.77	30	3.57
Number of household active members	1	1.33	2	1.33	1	1.33
Qualitative variables						
	Frequency (%)		Frequency (%)		Frequency (%)	
Gender						
• Male	60		45		56	
• Feminine	40		55		44	
Basic Education						
• primary level	28		16		24	
• Secondary level	34		36		35	
• University level	9		7		8	
No basic education	29		41		33	
Religion						
• Animist	22		74		37	
• Christian	49		24		42	
• Muslim	19		2		21	
Basic agricultural training	28		5		21	
Land ownership						
• Direct access	94		91		93	
• Indirect access	6		9		7	
Saving	72		97		79	
Membership of an agricultural organization	20		16		19	
Contact with agricultural extension service	28		31		29	
Marital status						
• Married	84		95		87	
• Widower	1		2		2	
• Single	14		3		11	
Ethnic group						
• Ditammari	25		91		45	
• Wamma	20		0		14	
• Bariba	44		2		31	
• Others	11		7		10	
Previous status of the operator						
• Manager	1		10		4	
• Student	9		7		8	
• Employee	3		2		3	
• Unemployed	87		81		85	

Source: Survey data, January 2019

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Table 4: Types of farm business in the survey area

Types of farm business		Effective	Frequency (%)	Total
• Farm business	Modern farm business	36	18.2	140 (70.7%)
	Family farm business	104	52.5	
• Family farm	Modern Family farm	10	5.1	58 (29.3%)
	Peasant family farm	48	24.2	

Source: Survey data, January 2019

Table 5: Results of the logistic model

Variables	Agricultural entrepreneurship			
	Coefficients	Standard deviation	Z	Marginal effects
Dependant variable: farm business creation, 0/1				
Constant	0.303	1.087	0.280	-
Basic education (EDUC)	0.144	0.430	0.330	0.019
Basic agricultural training (BAT)	1.869**	0.872	2.140	0.244
Land ownership (LANOW)	2.982***	0.583	5.110	0.390
Savings as initial capital (SAVE)	-1.463*	0.857	-1.710	-0.191
Membership of an agricultural organization (MAO)	0.445	0.638	0.700	0.058
Number of agricultural workers (NAW)	-0.419**	0.172	-2.440	-0.055
Contact with an agricultural extension service (AES)	-1.085*	0.598	-1.810	-0.142
Diagnostic tests:	Number of observations: 198 Prob > chi2: 0.000 Log likelihood: -81.448 Pseudo R^2: 0.309 LR $chi^2(7)$: 72.96			

Note: *** significant at the 1%, ** significant at the 5% * significant at the 10%

Source: Survey data, January 2019

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REFERENCES

1. **Bensghir A and A Reghioui** La culture entrepreneuriale : Étude comparative entre les étudiants marocains et mauritaniens. In : Dossiers de Recherches en Economie et Gestion. 2015 ; **413** : 1–27.

2. **Gundolf K** Entrepreneur, entreprise et entrepreneuriat : Proposition d'une lecture relationnelle. Mémoire de master en sciences de gestion. Université de la méditerranée-AIX-MARSEILLE II. 2010.

3. **Mechtour R and R Slamani** L'entrepreneuriat enjeux et importance. Ecole des Hautes Etudes Commerciales d'Alger (HEC Alger). 2020. https://www.researchgate.net/publication/338395317 *Accessed 20th March 2019.*

4. **Taouab O** Essai empirique sur les déterminants de l'acte entrepreneurial dans le secteur textile marocain. *European Scientific Journal*. 2014 ; **10 (1)** : 414-424.

5. **Migan G** Politique et dispositifs d'insertion et de création d'emplois. Conférence des Ministres du PQIP/DCTP. 2014.

6. MAEP. (2017). Plan Stratégique de Développement du Secteur Agricole (PSDSA 2017- 2025).

7. **INSAE** Recensement général des entreprises du Bénin, 2ème édition (RGE2). 2010.

8. **INSAE** Enquête Modulaire Intégrée sur les Conditions de Vie des ménages. 2015.

9. **FAO** Les jeunes et l'agriculture : Principaux enjeux et solutions concrètes. 2014a.

10. **Bélières JF, BOSC PM, Faure G, Fournier S and B Losch** Quel avenir pour les agricultures familiales d'Afrique de l'Ouest dans un contexte libéralisé ? *IIED. Dossier* N°113. 2002.

11. **FAO.** Programme du recensement mondial de l'agriculture. Collection FAO: Développement statistique. FAO Rome. 2000 ; **5** :28p.

12. **Sourisseau JM, Bosc PM, Freguin Gresh S and JF Beliere** Modèles familiaux de production agricole : Comprendre leur diversité et leur fonctionnement. *Autrepart*. 2012 ; **62(1)** :159-182.

13. **Baudry B** Economie de la firme. Edition la découverte Paris. 2003. 128p.

14. **Silem A and JM Albertini** Le lexique d'économie, 10ème édition. Ed. Dalloz.2008.

15. **Lamarche H** Agriculture familiale : Comparaison internationale ; tome 1, une réalité polymorphe. Editions L'Harmattan, Paris, FR. 1991.

CC BY NC ND

16. **Neupane RP, Sharma KR and GB Thapa** Adoption of agro-forestry in the hills of Nepal: A logistic regression analysis; *Agricultural Systems*. 2002; **72 (1)**: 177-96.

17. **Pindyck RS and DL Rubinfeld** Econometric Models and Economic Forecasts. McGraw-Hill Book Co. New York. 1981.

18. **Greene WH** Econometric analysis, 7th edition. Pearson Education 2012, Prentice Hall, New York, 1951. 1198p.

19. **Gujarati DN** Basic Econometrics, 4th ed. The McGraw Hill Companies, New York. 2004.

20. **Gillet A, Brostaux Y and R Palm** Principaux modèles utilisés en régression logistique. Biotechnol, Agron, Soc, Environ, 2011; **15(3)** : 425-433.

21. **Ouédraogo S** Les facteurs déterminants de l'adoption des technologies de conservation des eaux et des sols dans le Plateau central du Burkina Faso. Science et technique, Lettres, Sciences sociales et humaines, 2009 ; **26 (1)** : 89-104.

22. **Degla KP and CB Dedewanou** Les déterminants de l'adoption de la gestion intégrée des ravageurs et de la fertilité des sols par les producteurs de coton au Nord-Benin Annales de l'Université Abdou Moumouni, 2012. Tome XII-B, pp. 66- 75.

23. **Sodjinou E, Glin LC, Nicolay G, Tovignan S and J Hinvi** Socioeconomic determinants of organic cotton adoption in Benin, West Africa. Agricultural and Food Economics. 2015;**3**: 12.

24. **Barry S** Déterminants socio-économiques et institutionnels de l‟adoption des variétés améliorées de maïs dans le Centre-Sud du Burkina Faso. Revue de d'Economie Théorique et Appliquée, 2016 ; **6(2)** :221-238.

25. **Yabi JA, Bachabi FX, Labiyi IA, Ode CA and RL Ayena** Déterminants socio-économiques de l‟adoption des pratiques culturales de gestion de la fertilité des sols utilisées dans la commune de Ouaké au Nord-Ouest du Bénin. Int. J. Biol. Chem. Sci., 2016 ; **10(2):** 779-792.

26. **Sigué H, Labiyi IA, Yabi JA and G Biaou** Facteurs d‟adoption de la technologie "Microdose" dans les zones agroécologiques au Burkina Faso. International Journal of Biological and Chemical Sciences, 2018 ; **12** :2030-2043.

27. **Deffa Kane NO, Tahirou S, Ntep Massing FP and L Liboudou** Les déterminants de l'entrepreneuriat des jeunes en Afrique de l'Ouest : Le cas de la Mauritanie et du Sénégal. FR-CIEA. 2014 ; **81**:14 www.trustafrica.org/icbe *Accessed 8th March 2020.*

CC BY NC ND

28. **Perraillon MC** Interpreting Model Estimates: Marginal Effects. University of Colorado Anschutz Medical Campus, Nova School of Business and Economics Lisbon, Portugal. 2019 https://clas.ucdenver.edu/marcelo-perraillon/codeand-topics/marginal-effects *Accessed 6th June 2022.*

29. **Toulmin C and B Gueye** Transformations de l'agriculture ouest-africaine et rôle des exploitations familiales. IIED. Dossier N°113. 2003.

30. **Berti F and P Lebailly** L'agriculture familiale africaine au cœur des Objectifs du Millénaire pour le Développement (OMD). Colloque fédérateur de Bamako du 26-31 octobre 2009. Université de Bamako. Mali.

31. **Cirad** Agriculture familiale. Valorisation et Innovation en Partenariat. 2014; www.cirad.fr/innovation-expertise *Accessed 10th February 2019*.

32. **Deon F and L Fox** L'emploi des jeunes en Afrique subsaharienne. Série Forum pour le Développement de l'Afrique. DC : Banque mondiale. 2014.

33. **FAO** Rapport sur la typologie des exploitations agricoles à Madagascar. 2014b.

34. **Sossou CH** Le financement de l'agriculture au Bénin : Stratégies de gestion et d'adaptation des exploitations agricoles. Thèse de doctorat en français. 2015;181p.

35. **Kay RD, Edwards WM and PA Duffy** Farm Management. Sixth Ed. New York, McGraw-Hill. 2008.

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