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Does Agri-Business/Small and Medium Enterprise Investment Scheme (AGSMEIS) Impact on Youth Entrepreneurship Development in sub-Saharan Africa? Evidence from Nigeria

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Abstract

Purpose - The purpose of this paper is to critically examine the agri-business/small and medium investment schemes (AGSMEIS) in Nigeria. Its special focus is to investigate the impact of the AGSMEIS on youth entrepreneurship development in Nigeria.

Design/methodology/approach - This paper adopts a survey research technique, aimed at gathering information from a representative sample of the population, as it is essentially cross-sectional, describing and interpreting the current situation. A total of 1,200 respondents were sampled across the six geopolitical zones of Nigeria.

Findings - The results from the use of a combined propensity score matching (PSM) and logit model indicate that AGSMEIS initiative generates significance gains in empowering youths in enterprise development, and if enhanced will help many young people become entrepreneurs.

Practical implications - This suggests that AGSMEIS initiative can facilitate youth's access to credit and help them become owners of small and medium enterprises.

Social implications - It implies that investing in young people for small and medium enterprises could bring Nigeria into the modern economy and lift sub-Saharan Africa out of poverty.

Originality/value - This research adds to the literature on youth entrepreneurship development's debate in developing countries. It concludes that targeting the young people in AGSMEIS should form the foundation of public policy for entrepreneurship, poverty alleviation, and economic development.

Keywords Agri-business/small and medium investment schemes (AGSMEIS), youth entrepreneurship development, sub-Saharan Africa

Paper type Research paper

1. Introduction

A major group of Africans that has remained widely excluded from recent economic progress in the continent is the young people (IMF, 2013). The lack of gainful employment for young Africans is one of the most critical policy challenges of the region. This needs to be addressed through measures that stimulate labour markets, while encouraging long-term declines in fertility (ILO, 2012). While reductions in fertility rates and relevant skills development are crucial for Africa to benefit from the type of demographic dividend Asia experienced, labour market demand must be a priority to improve employment levels (IMF, 2017). Meanwhile, in Nigeria, agri-business/small and medium enterprises investment scheme (AGSMEIS) represents a voluntary initiative of the bankers' committee approved at its 331st meeting held on February 9, 2017. The scheme requires all banks in Nigeria to set aside 5 % of their profit after tax (PAT) annually (CBN, 2017). The initiative is to support the federal government of Nigeria's (FGN) efforts and policy measures for the promotion of agricultural business, small and medium enterprises (SMEs) as vehicle for sustainable economic development and employment generation (Adamgbe *et al*, 2020). The objectives of the scheme includes: ensures access to finance for SMEs as these are the engine of growth of the Nigerian economy; generates much-needed employment opportunities in Nigeria; develops agricultural value chain and ensure sustainable agricultural practices; and boost the managerial capacity of Agri-Business/SMEs as pipelines of growing enterprises that can become huge corporate organizations (CBN, 2018). The activities of the scheme include businesses across the agricultural value chain, such as: inputs supply, production, storage, processing, logistics and marketing. However, the extent to which the AGSMEIS initiative has contributed to the sustainable economic development and employment generation in Nigeria remains contested. While proponents view AGSMEIS as a vehicle for potentially reinvigorating old dynamics in agri-business, critics see it as a platform for new functions to be demanded of old institutions (Kanife, 2020; Olajide, 2021; Emenike, 2021; OFA, 2021). The foregoing deliberation highlights the complexity of the different perspectives surrounding AGSMEIS contribution to economic development in the country.

Meanwhile, in Nigeria, youth unemployment rates remains substantially high, with a significant proportion of employment being in agriculture and informal, urban sector, both of which are characterized by low and variable incomes, leaving millions of young people trapped in poverty (Adamgbe *et al*, 2020, OFA, 2021, Okolo-Obasi *et al*, 2021). This has created some incentives for youths to migrate to cities, thus fuelling the frustrations and tensions in already saturated

urban centers. Young people risk their lives in attempts to reach Europe as migrants crossing the Mediterranean Sea (African Development Report, 2014, 2015). In context, some authors have suggested that a mechanism by which the lives of youth can be improved is through the amelioration of communities in which they live in order to make them better places (Villaruel, *et al*, 2003; Lerner *et al*, 2002). Other authors highlight the importance of strengthening communities, so that they can be functional in nurturing and supporting young people, thus ensuring the sustainable development (Benson and Pittman, 2001; Ariyo and Mortimore, 2012). Against this background, our emphasis in this study is on empowering and developing rural youths; so that they will in-turn contribute positively to development of agricultural value chain and sustainable agricultural practices of their communities. The AGSMEIS programme is a development agenda that provides young people with resources needed to improve their livelihoods and those of their communities by means of boosting the managerial capacity of Agri-Business/SMEs as pipelines of growing enterprises. Hence, this paper contributes to the ‘youth in entrepreneurship development’ in developing countries debate by assessing the empirical evidence related to the following objectives: determine the level of youth’s participation in AGSMEIS; ascertain the impact of AGSMEIS on youth’s access to financial services; examine the impact of AGSMEIS on youth's access to critical factors of production; analyze the impact of AGSMEIS on young Nigeria’s access to training for entrepreneurship development and capacity building.

The rest of the paper is structured as follows. Section 2 considers the literature and theoretical underpinnings. Section 3 describes the methodology and data. Section 4 focuses on the empirical results and corresponding discussion. Concluding remarks, caveats, and future research directions are discussed in section 5.

2. Literature and theoretical underpinning

2.1 Youth unemployment

Across the world, young people make up the bulk of labour force and bear most of the unemployment burden. However, the heterogeneous nature of African demographics as implied in their dissimilar structures and trends, calls for policies that are context specific, in order to achieve youth employment outcomes that are both timely and sustainable. Africa will continue to account for a significant and rising share of the global youth population; rising from a fifth in 2012 to as high as a third by 2050 (Bloom, 2012). Current trends suggest that much of the youth bulge will be concentrated in sub-Saharan Africa (World Bank, 2014). This will leave

Africa with the challenge of providing jobs to 29 million labour market entrants every year, which is close to 6 percent of the current workforce (UNDP, 2016). Meanwhile, Africa creates 3 million wage-earning jobs annually, compared to the 10-12 million youth that enter the labour force each year (Africa Development Report, 2016). As a result, fostering entrepreneurship has become a key pillar of policy agenda in developing and emerging countries to expand employment opportunities for youths. According to ILO (2012), the policy discourse has coalesced around two distinct pathways whereby entrepreneurship can address youth unemployment. First, the growth approach, whereby entrepreneurship as an engine of economic growth and job creation – these are entrepreneurs of all ages that create and grow businesses that will generate job for youth. Second, the livelihood approach, whereby entrepreneurship by youth as a means to acquire productive employment and livelihood for themselves.

However, all regions of the world have been experiencing changes in population demographics, technology, and more frequent occurrence of aggregate shocks. These changes have brought about varied responses including, heightened emphasis on entrepreneurship by governments, organisations and the public (Dana, 2011, Mason *et al*, 2009). The interest in entrepreneurship is particularly relevant for Africa, which has a very high share of necessity entrepreneurs (Dana *et al*, 2018). However, opportunity entrepreneurship has remained relatively scarce (Uduji and Okolo-Obasi, 2021).

2.2 Youth entrepreneurship

The concept of entrepreneurship can be defined as a group of actions conducted by individual and/or groups where the main goal is to create new opportunities that are not existent nor part of the already established organizations (Anyanwu, 2013, 2016). It was also noted that the entrepreneurship is more tied to individuals and that its potential is mainly contained on a lower level, rather than on a macro-economic level. As noted earlier, entrepreneurship positively affect economic growth (Africa Development Report, 2014, 2016), while youth entrepreneurship also has a positive effect on economic development as well as on youth unemployment rate (Villaruel, *et al*, 2003; Lerner *et al*, 2002). According to Uduji *et al* (2019b, 2020c), entrepreneurship development might be the only viable path to a sustainable livelihood for many young people in Africa today. Dana (2007a, 2007b, 2007c) agreed, in that economic policies in many African countries have seen shifts toward supporting entrepreneurs, and Small and Medium-sized Enterprises (SMEs) as a source of both economic growth and employment

creation, especially for the youth. Mason *et al* (2009) concur that for the youth, becoming an entrepreneur may come with a number of challenges, including having acquired the necessary business training to develop a profitable enterprise and securing capital to invest in a new firm. However, these challenges may also vary by gender and geographical divides. For example, Nikilopoulos and Dana (2017) suggest that access to capital and training in urban areas is generally better than in rural areas, and young women may hold other responsibilities within the household that prevent them from securing the training or spending the time necessary on running a business. Uduji and Okolo-Obasi (2019b, 2021) arrive at the same view, in that the extra challenges provide the basis for intervention in start-up capital, skill, networking and mentoring, to put the chances of young entrepreneurs on an equal footing with those of adults.

2.3 Theoretical underpinning

According to Dana (2007a), entrepreneurship is a well-known phenomenon lacking a single precised definition. The empirical literature equates entrepreneurs with measures such as self-employment or new business activity (Mason *et al*, 2009). In contrast, the theoretical literature defines entrepreneurship base on personality traits, skills, behaviours (Papanek, 1962, Harris, 1970, Kirzner, 1997). To varying degrees, three traits have recalled in the various theoretical definitions of entrepreneurship: bearing uncertainty and risk; competent management; finding and exploiting opportunities (Harris, 1971). To this point, the act of entrepreneurship, such as creativity, risk-taking, confidence, determination should be separated from the science of entrepreneur, such as planning, management, accounting, marketing (Kirzner, 1998). According to Papanek (1962), an entrepreneur executes all activities due to economic incentives. Harris (1970,1971) harmonize in the same opinion, in that profit motive is the prime driving force that change an individual into an entrepreneur, and as such an entrepreneur emerges due to incentives and economic profit. Kirzner (1997, 1998) have the same view, in that a typical entrepreneur is the arbitras, who discovers opportunities at low prices and sells the same at high prices because of inter-temporary and inter-partial demand. In all, the inner drive of an entrepreneur is associated with economic gains, which drive him into economic activities, as this theory regards economic gain as a pre-condition for the supply of entrepreneurs. According to the supporters of this theory, the following are the factors which promote or demote entrepreneurship in a country: (i) the availability of a bank credit; (ii) high capital formation with a good flow of savings and investments; (iii) supply for loadable funds with a lower rate of interest; (iv) increase demand for consumer goods and services; (v) availability of productive resources; (vi) efficient economic policies like fiscal and monetary

policies and; (vi) communication and transportation facilities. Thus, we use economic gain and incentive as a framework for descriptive analysis of youth participation in entrepreneurship development in sub-Saharan Africa. This theoretical underpinnings and the contextualization of theoretical underpinning in the light of the AGSMEIS programme, theoretically elucidate the connection between youths' participation in the AGSMEIS intervention programme and their potential benefit in entrepreneurship development from the AGSMEIS programme in Nigeria. Though this paper settled for quantitative methodology, we viewed the outcome from the economic theory of entrepreneurship.

Noticeably, we hypothesize that AGSMEIS intervention has not impacted on youth entrepreneurship development in Nigeria. The positioning of the research in response to this testable hypothesis swerves from existing youth empowerment literature (Filmer and Fox, 2014; ILO, 2012; Asongu *et al*, 2019a, 2019b, 2019c, 2019d; Ugwuanyi *et al*, 2021; Uduji and Okolo-Obasi, 2017, 2018a, 2018b, 2018c; IMF, 2013; UNDP, 2016; Uduji *et al*, 2019e, 2019f, 2019g, 2019h; World Bank, 2014; Asongu *et al*, 2020d, 2020d, 2020e; Dana, 2007a, 2007b; Uduji and Okolo-Obasi, 2019a, 2019b, 2019c, 2021; IMF, 2017; Dana, 2011; Mason *et al*, 2009; Uduji *et al*, 2020a, 2020b, 2020c, 2020d; Ramadani *et al*, 2019; Asongu *et al*, 2020a, 2020b, 2020c; Nikolopoulos and Dana, 2017; Uduji *et al*, 2020e, 2021a, 2021b, 2021c, 2021d; Dana and Dana, 2005; Dana *et al*, 2018).

3. Method and materials

The study adopts a quasi-experimental design using a quantitative methodology as a contribution given the paucity of studies on AGSMEIS evaluation in Nigeria (Uduji *et al*, 2019a). The study used the survey research technique with the aim of gathering cross-sectional data from a sample of the population. The survey is essentially cross-sectional as it describes and interprets what exists at present in the country.

3.1 Sampling procedure

For primary data collection, we used multi-staged sampling method to select the final respondents. In the first stage, we clustered States according to the six geopolitical zones of the country to ensure that no zone is left out. In the second stage, using purposive sampling, we selected one State from each of the geopolitical zones on the basis of the report of the national social investment office, on participation in the Nigeria's government enterprise empowerment programme (GEEP), which was launched in 2016 with the aim to offer interest and collateral

free credit to the micro SMEs (MSMEs) operating at the bottom of the Nigerian economic pyramid (CBN, 2018). Hence, we selected Kogi State (North-Central), Borno State (North-East), Kano State (North-West), Enugu State (South-East), Rivers State (South-South), and Lagos State (South-West). In the third stage, from the selected states, four local government areas (LGAs) were randomly selected from the list of all the LGAs in each of the states, giving a total of twenty four LGAs. In the fourth stage, we randomly selected three communities from each of the selected LGAs to ensure adequate representation. Hence, we arrived at a total of seventy two communities for the study. In the last stage, we engaged the help of the community leaders to select one thousand, two hundred (1200) respondents from the seventy two communities. This was achieved after assigning maximum of twenty (20) and minimum of fifteen (15) respondents to each of the communities. Out of this sample we had four hundred in the treatment and eight hundred in the control (Table 1).

Table 1. Sample size determination table

Zone	States	Population	Youth Population	% of Total Population	Sample Per state	Treatment	Control
North							
East	Borno	5,860,183	2,637,082	12	147	61	84
North							
Central	Kogi	4,473,490	2,013,071	9	113	36	75
North							
West	Kano	13,076,892	5,884,601	27	329	106	220
South							
East	Enugu	4,411,119	1,985,004	9	112	35	77
South-							
South	Rivers	7,303,924	3,286,766	15	184	59	123
South							
West	Lagos	12,550,598	5,647,769	26	316	103	221
		47,676,206	21,454,293	1	1200	400	800

Source: NPC, 2007/Authors' computation.

3.2 Data collection

To differentiate between the AGSMEIS participants (treatment group) and those who are yet to participate (the control group), the respondents were asked if they have in any form participated in the national social investment (*trader moni, market moni* etc.) programme of the federal government to improve their livelihood. We administered a structure questionnaire of which scores were allocated according to the study objectives to the selected respondent in a form that represents an appropriate tool to evaluate qualitative issues by quantitative information (Appendix 1). The administration was done directly by the researchers with the

help of research assistants because of the following three reasons: first, the study area is multi-ethnic and multi-lingual with over 250 ethnic groups that speak different local languages and dialects; secondly, some of the terrains are rough with high level of violence that required a local guide/guard; thirdly, some of the questions contained in the questionnaire would require further explanation that could be best explained in local dialects.

Secondary data were also generated from the national bureau of statistics (NBS), national directorate for employment (NDE), small and medium enterprises development (SMEDAN) and other relevant enterprises development agencies in Nigeria. This data was used for a trend analysis of entrepreneurship in selected region.

3.3 Analytical framework

The study analyzed the impact of AGSMEIS on youths' empowerment in the areas of access to finance, production input, training and capacity building in Nigeria. To achieve the study objectives and test the hypothesis, both descriptive and inferential statistics were used. The results of the descriptive statistics are presented in tables, charts and graphs.

3.4 Econometric model

The emphasis of this empirical analysis is to scrutinize the impact of AGSMEIS on access to credit, production input, training and capacity building of youths in Nigeria. To achieve this, we expressed a standard logit with marginal effect to be able to estimate what the determinants of access are. This is because, the built-in PSM command in stata *teffects psmatch* can only use logit perfectly well for the researchers' kind of matching. Hence, we employed logit estimation to assess the decision of the youth either to participate in the AGSMEIS or otherwise as specified thus:

$$Y_i = \alpha + \beta X_1 + \mu_1 \quad \text{Equation 1}$$

In the estimation model, $Y_i = 1$ only where the youth i th chose to participate in the AGSMEIS but $Y_i = 0$ otherwise. The Equation (1) is a model with a binary outcome of the probability of a Nigerian youth to participate in the scheme (Y_i) in the face of a set of factors (X_i) which are considered exogenous to the individual as expressed thus:

$$P(Y_i = 1) = f(X_1 \beta_1) \quad \text{Equation 2}$$

$$P(Y_i = 0) = 1 - f(X_i \beta_1) \quad \text{Equation 3}$$

Here, Y_i is the response of i th youth that chose to participate in the AGSMEIS or not and X_i stands for the set of characteristics associated with the i th youth. In the logit model we used the logistic cumulative function to estimate the probability thus:

$$P(Y = 1) = \frac{e^u}{1+e^u} \quad \text{Equation 4}$$

$$P(= 0) = \frac{e^u}{1+e^u} \quad \text{Equation 5}$$

Regression of the conditional expectations of Y on X is the probability model where $u = \beta_i X$. Hence we carried out the same treatment for all the dependent variables estimating binary treatment and binary outcome model using the propensity score matching. While modelling the decision of a youth jointly with the outcome variables, the issue of endogeneity was addressed (Woldemichael, 2020).

In the propensity score matching (PSM), we created value of the probability of participating in the scheme from the logit regression, assigning each youth a propensity score. The control groups (those yet to participate in the scheme) with very low propensity score outside the range found for participants were dropped at this point. For each youth in the treatment group, a youth in the control group that has the closest propensity score as measured by absolute difference in score referred to as nearest neighbour was obtained. With this, we applied the nearest five neighbours to make the estimate more rigorous. The mean values of the outcome of indicators for the nearest five neighbours were calculated and the difference between the mean and actual value for participating in AGSMEIS (treatment) is the estimate of the gain due to AGSMEIS. This difference between treatment and control groups is estimated by the (ATT) average treatment effect on the treated normally expressed based on PSM as follows:

$$ATT_{PSM} = E_{p(x)} \{E(y_1/Z = 1, P(x)) - E(y_0/Z = 0, P(x))\}, \quad \text{Equation 6}$$

$E(P(x))$ stands for expectation with respect to the distribution of propensity scores in the population. The true ATT indicates the mean difference in AGSMEIS participation. In this, we achieve an adequate match of a participant with her counterfactual in as much as their observable characteristics are identical.

4. Results and Discussion

4.1 Descriptive analysis

The analysis of the respondents begins with a description of some of their social (education), demographic (age, marital status, household size) and economic (occupation, income) characteristics. These are characteristics that are common among both the treatment and the control. The characteristics are important in understanding the differences in the socio-economic status of the youth who participate in AGSMEIS from the federal government compared with their non-participant counterparts in Nigeria. Analysis (Table 2) shows that about 62% of the treatment group is males, while 38% are females. Also about 67% of the control group is males, while 34% are females. This is an indication that the males are more likely to be empowered through the AGSMEIS than females. Only a fraction of 2% of the treatment groups is under employment job while the control has only 5%. About 28% of the treatment and 18% of the control group are involved in farming, while 39% and 31% in trading. About 12% of the treatment group is unemployed, while 20% of the control is unemployed. The average age of the respondent in the treatment group is 26 years, while that of the control is 32 years. This finding gives consent to Uduji *et al.* (2019e, 2019f) in that respondents in the control group are often more educated than the respondent in the control group in Nigeria. In the treatment group, only 7% are not educated at all, while the control group have 14% uneducated respondents. The findings from this analysis also admit with CBN (2018) annual reports in that even after the receipt of aids from the AGSMEIS, there appears to be no much difference in the earnings of both the treatment group and the control group. Only about 8% of the respondents in treatment group earn more than 300,000 while the control has about 9% that earn same amount.

Table 2. Socio-economic characteristics of the respondents

Variables	Treatment Group			Control Group		
	Freq	%	Cum	Freq	%	Cum
Sex of Respondent						
Male	248	62	62	532	67	67
Females	152	38	100	268	34	100
	400	100		800	100	
Primary Occupation						
Fishing	25	6	6	68	9	9
Trading	154	39	45	246	31	39
Farming	112	28	73	141	18	57
Employment job	8	2	75	42	5	62

Handicraft	53	13	88	142	18	80
Unemployed	48	12	100	161	20	100
	400	100		800	100	
Age of Respondents						
Less than 20 years	10	3	3	68	9	9
21-25 years	99	25	27	151	19	27
26-30 years	129	32	60	283	35	63
31 - 35 years	92	23	83	185	23	86
Above 35 Years	70	18	100	113	14	100
	400	100		800	100	
Level of Education						
None	27	7	7	112	14	14
FSLC	153	38	45	221	28	42
WAEC/WASSCE	122	31	76	342	43	84
Degree and above	98	25	100	125	16	100
	400	100		800	100	
Marital Status						
Single	192	48	48	276	35	35
Married	128	32	80	420	53	87
Widow	23	6	86	39	5	92
Divorced/Separated	57	14	100	65	8	100
	400	100		800	100	
Household Size						
1-4 Person	248	62	62	472	59	59
5-9 Person	112	28	90	234	29	88
10-14 Person	22	6	96	72	9	97
15 Person and above	18	5	100	22	3	100
	400	100		800	100	
Annual Income						
1000 - 50,000	11	3	3	32	4	4
51,000 - 100,000	35	9	12	85	11	15
101,000 - 150,000	75	19	30	125	16	30
151,000 - 200,000	77	19	50	197	25	55
201,000 - 250,000	93	23	73	173	22	77
251,000 - 300,000	76	19	92	116	15	91
Above 300,000	33	8	100	72	9	100
	400	100		800	100	

Source: Authors' compilation based on household survey.

Analysis (Table 2) indicates that irrespective of receiving or not receiving from the AGSMEIS, the average annual income of both the treatment group and the control groups are still low. The treatment group has an average income of ₦210, 000 000 (\$514,000) per annum, while for the control group the average income is ₦195, 000 (\$75,000) per annum. This finding

assent to Adangbe *et al* (2020) in that Covid-19 pandemic is really hitting hard on the Nigerian economy, and the impact is so felt on every facet of the economy.

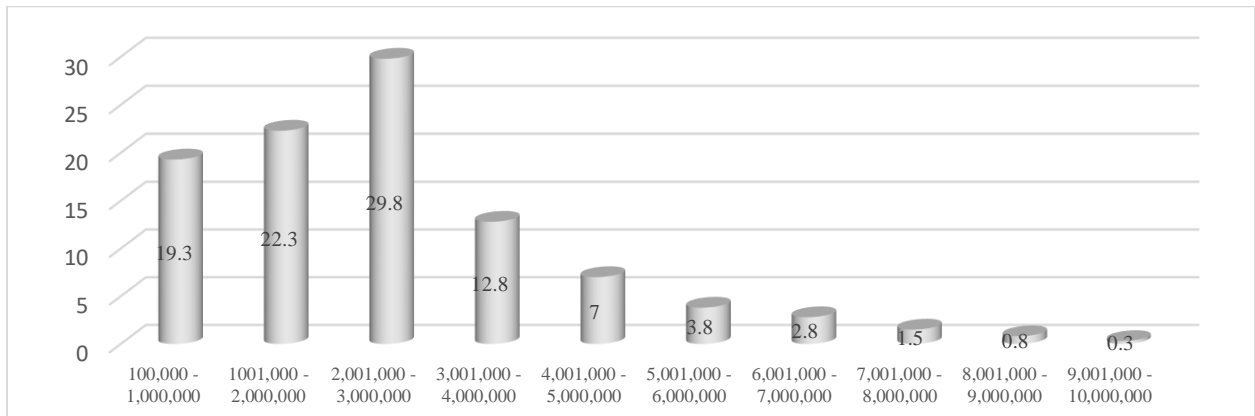


Figure 1. Percentage distribution of respondents by value of empowerment received.

Source: Author’s compilation based on field survey.

From the analysis (Figure 1), about 84% of the respondent (treatment) have received a total of resources valued at less than or equal to ₦4,000,000 (\$9,700) from the scheme, while about 7% have received between ₦4,001,000 and ₦5,000,000. Less than 10% of the participants have received above ₦5,000,000. This is an indication that the fund is actually for micro and small investments. It is important to observe that having issued out to 19.3% of the respondent 1,000,000 or less means that many may have used their receipts for consumptions.

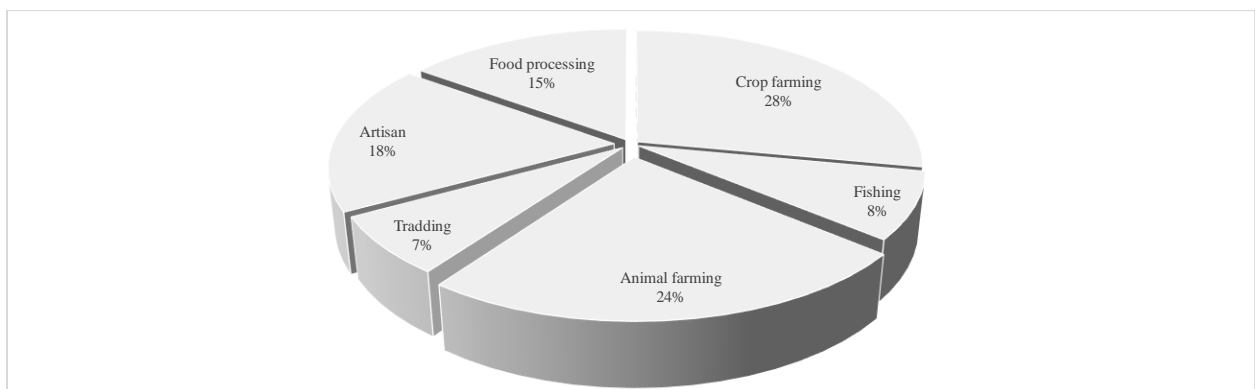


Figure 2. Percentage distribution of AGSMEIS empowerment by sectors in Nigeria.

Source: Author’s compilation based on field survey.

Analysis (Figure 2) shows that food processing accounted for 18% of the AGSMEIS empowerment while artisan (mechanics, tailors, hair dressers etc.) accounts for 18%. On the other hand, trading accounts for only 7%, meaning that the scheme target more on those who are into production. While animal farming accounts for 24%, crop farming tops the list

accounting for 28% and fishing took only 8%. This coincides with Kanife (2020) in that the FGN should focus more on diversification of the economy which will create more jobs for those displaced from their jobs and also for those who have been unemployed. If this is achieved the AGSMEIS loan will help the economy be on a sustainable path to recovery to increase income and more revenue to the government.

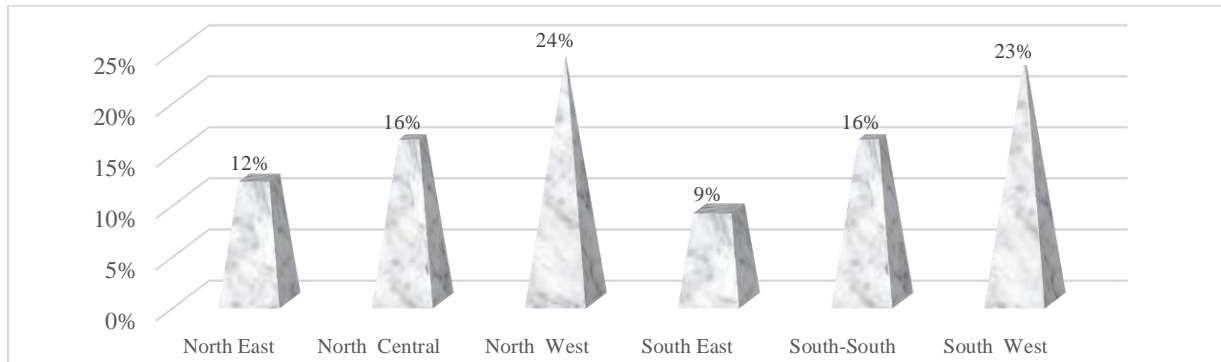


Figure 3. Percentage distribution of youths AGSMEIS participation by regions in Nigeria.

Source: Author’s compilation based on field survey.

Analysis (Figure 3) showed that while South-West region and North-West regions recorded highest in the number of participant and recipients of the AGSMEIS empowerment, South East has the least participants. This left a lot to be desired as South-East is the region that is known to have more penchants to private entrepreneurship. However, it could be explained by the fact that most government intervention programmes has not always been successful in the region (Uduji *et al*, 2020a, 2020b, 2020c, 2020d, 2020e, 2020f).

Table 3. Distribution of respondent according to reasons for no participating in AGSMEIS.

Reasons	N/E	N/C	N/W	S/E	S/S	S/W	Average
Aware but not interested	15	20	8	18	21	16	16
Unaware and uninterested	10	9	15	19	17	21	15
Unaware and interested	54	63	55	20	31	37	43
Aware but cumbersome process	12	7	11	28	23	19	17
Undecided	9	1	11	15	8	7	9

Source: Author’s compilation based on field survey.

A further probe into why many youths have not participated in the scheme shows that while about 16% of the youths are aware of the scheme but are not interested, 15% are unaware of the scheme and are also not interested, probably because of their political inclinations or lack

of trust in the FGN and their intervention programmes. However about 43% of the respondent are very interested but are unaware of the scheme. Another 17% claims they are aware but could not cope with the cumbersome processes involved, while 9% are undecided. This harmonize with Olajide (2021) in that more awareness creation of the scheme should be embarked on.

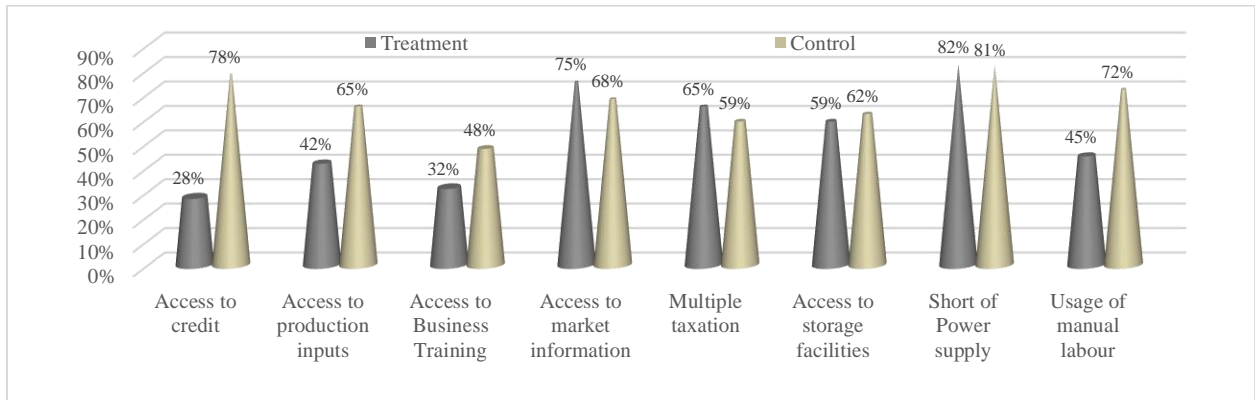


Figure 4. Percentage distribution of respondents by challenges faced in business development in Nigeria.

Source: Author's compilation based on field survey.

Analysis (Figure 4) shows that only 28% of the treatment group is complaining of access to credit, while the control group recorded 78%. About 42% of the treatment complains of access to production input, while the control has 65%. Also about 32% of the treatment group is still desirous of business management training while 48% of the control is in the same position. This suggests that, even though there is need for training in management of SMEs, majority of the youths are vast and require mainly credit facilities to launch into entrepreneurship. About 75% of the treatment group does not have access to market information and on time, likewise 68% of the control group. This further suggests that even when one is empowered with credit, there is still pressing need to access market information. While 65% of the treatment group is complains of multiple taxation, 59% of the control has the same fate. This finding corresponds with ILO(2012) in that inequality remains a big challenge to business growth in the sub-Saharan Africa. Emenike (2021) also concur that the increase in the number of complaints from the treatment is due to formalization of business before participating in AGSMEIS. Other complaints (Figure 4) include access to storage facilities, power supply and usage of manual production method which are significantly high for both the treatment and control. Uduji and Okolo-Obasi (2021) give consent to the finding (figure 4) in that supporting SMEs with affordable credit facilities as well as ensuring the support of infrastructure investment (transport, energy and ICT) is key to achieving broad-based economic growth and development in Nigeria.

4.2 Econometric analysis

Analysis (Table 4) summarized the average differences in the basic scores and independent observable characteristics between recipients and non-recipients. We estimated the determinants of access to credit, production inputs, and business training/capacity building as presented in table 3 which shows the marginal effects of logit estimations of access to credit in column 2, while the standard error is in column 3. Access to production input is presented in column 4 with the standard error in column 5. Column 6 and 7 outlined both marginal effect of access to training and capacity building and the standard error. Access to credit as dependent variable has the coefficients of small business significant and positive at 5%, while the coefficients of crop farming, animal farming, food processing and literacy are positively significant at 10%. This suggests that literate farmers have an increased probability of accessing credit from AGSMEIS. A unit increase in crop farmers has 613% of accessing credit, while the animal farming has 7.8% probability and food processing is 5.2%. Also the analysis suggests that a unit increase in literacy will lead to 5.6% increase in access to credit.

Table 4: Marginal effects of the determinants of access to credit, Access to Production Input and Access to Training

	Access to credit		Access to Production input		Access to Training	
	DY/DX	Std. Error	DY/DX	Std. Error	DY/DX	Std. Error
Small business	0.072**	0.024	0.032	0.043	-0.021	0.062
Medium business	-0.018	0.065	0.041	0.051	0.018	0.038
Crop farming	0.063*	0.013	0.013	0.067	0.043	0.033
Animal farming	0.078*	0.028	0.048	0.014	0.022	0.028
Artisan	0.015	0.042	0.035	0.017	0.065*	0.005
Fishing	0.034	0.014	0.044	0.012	0.023	0.014
Trading	0.012	0.021	0.022	0.029	0.025	0.032
Food processing	0.052*	0.002	0.042	0.014	0.032	0.032
Location (urban)	0.028	0.018	0.018	0.032	0.024	0.021
Sex (Male)	-0.002	0.032	-0.052*	0.012	0.011	0.025
Age	-0.014	0.043	-0.034	0.033	-0.012	0.010
Political affiliation (opposition)	-0.002	0.032	-0.052*	0.022	-0.006	0.005
Education	0.026	0.016	0.046	0.022	0.017	0.021
Literacy	0.056*	0.062	0.026	0.036	0.019	0.016
Business nature (formalized)	0.121	0.024	0.112	0.001	0.011	0.021
Marital status	0.003	0.013	0.013	0.033	0.019	0.031
Household size	-0.025	0.010	-0.015	0.052	-0.015	0.035
Primary occupation	0.033	0.023	0.043	0.033	0.034	0.023
Annual income	-0.042	0.032	0.034	0.012	0.014	0.017
Credit access			0.054**	0.028	0.082**	0.021
N	1200		1200	1200	1200	1200
Pseudo R2		0.032		0.046		0.049
Log likelihood		-421.532		-210.613		-341.352
Prediction		0.416		0.208		0.221

Computed from the field data * = significant at 10% level, ** = significant at 5% level, *** = significant at 1% level.

Under access to Production input (column 4 & 5) as dependent variable, access to credit became one of the explanatory variables and is significant at 5%. This shows that a unit increase in access to credit will lead to a 5.4% increase in access to production inputs. Sex of the respondents, political affiliation is also negatively significant at 10%. This confidently implies that the being a female or a member of the opposition party has a negative impact in accessing production input provided under AGSMIES. Under business training/capacity building (column 6 & 7) as dependent variable, access to credit is also a major determinant. The coefficient is positive and significant at 5%. This suggests that a unit increase in the access to credit will increase access to training by 8.2%.

Table 5. Comparison of mean score and observable characteristics across participants and non-participants (N = 1200)

Score in Percentage of maximum score	Treatment	Control	Difference
Score on access to credit	31.32	26.28	5.04**
Score on access to production inputs	25.82	24.13	1.69**
Score on access to business training/capacity building	27.25	23.48	3.77**
Score on access to market information	24.57	19.32	5.25**
Socio-Economic Characteristics			
Age	23.41	17.35	6.06
Sex	12.25	10.15	2.10
Education	21.33	14.17	7.16
Marital status	22.19	23.81	1.62
Household size	12.51	16.71	-4.20
Primary occupation	21.22	14.31	6.91*
Annual income	51.26	43.63	7.63
Observation	400	800	

Source: Authors' compilation based on household survey.

Matching treatment and control we noted the difference in means which shows that the score on access to credit, score on access to production inputs, score on access to business, training/capacity building, and score on access to market information are reasonably high for the AGSMEIS participants compared to the control group, and the differences are 5.04; 1.69; 3.77; and 5.25 respectively in all the categories measured. After examining the selected observable characteristics, the result shows that there are significant positive differences in Age = 6.06, sex of respondents = 2.10, education =7.16, marital status =1.62, primary occupation = 6.91 and annual income =7.63 and also a significant negative difference in household size (4.20).This simply implies that as the treatment group has shown increase in almost all the indices measured, there is every possibility that participating in AGSMEIS may be a catalyst to reducing youth unemployment and underemployment in Nigeria.

4.3 Robustness test

In line with the probability of participating in the scheme as predicted in the model, we estimated the impact of participating in AGSMEIS on youth empowerment by the average treatment effect (ATT). The observations we carefully certified are ordered randomly and there are no large disparities in the distribution of propensity scores. Hence we noted that the NNM (nearest neighbour matching) yields the highest and most significant treatment effect estimate in all the four outcome categories.

Table 6. Estimated impacts of participating in AGSMEIS on youth empowerment via different matching algorithms

	Access and Knowledge Score in Percentage of Maximum Score		Average Treatment effect on the treated
	Receivers	Non- Receivers	
Nearest neighbour matching	Using single nearest or closest neighbour		
Score on access to credit	41.32	26.28	15.04**
Score on access to production inputs	25.82	24.13	1.69**
Score on access to training/capacity building	27.25	23.48	3.77**
Score on access to market information	24.57	19.32	5.25**
Observations	206	206	
Radius matching	Using all neighbours within a caliper of 0.01		
Score on access to credit	21.41	11.27	10.14**
Score on access to production inputs	23.34	19.18	4.16**
Score on access to training/capacity building	26.32	23.52	2.8**
Score on access to market information	16.23	14.31	1.92**
Observations	271	371	
Kernel-based matching	Using a bi-weight kernel function and a smoothing parameter of 0.06		
Score on access to credit	27.32	19.41	7.91**
Score on access to production inputs	48.78	29.62	19.16**
Score on access to training/capacity building	43.24	24.32	18.92**
Score on access to market information	15.12	13.34	2.22**
	400	800	

* = significant at 1% level; ** = significant at 5% level; and *** = significant at 10% level

Source: Authors' compilation based on household survey.

Analysis (Table 6) shows that the nearest neighbour matching estimate of the access to credit due to participating in AGSMEIS is approximately 15%. On this note, we tried the other two matching method (Radius and Kernel-based matching) as we think that the NNM method yields relatively poor matches as a result of the limitation of information. The estimated impact using radius matching algorithm is about 10%; while kernel-based matching algorithm produces average treatment effect on the treated of 8%. This is a confirmation that the scheme, AGSMEIS generates significant gains in the struggle to reduce youth unemployment, and if encouraged and improved upon will lift many out of poverty which is majorly the outcome of

unemployment and underemployment, as consented in Asongu *et al*, 2019; Okolo-Obasi, *et al*, 2021; Uduji *et al*, 2020g, 2020h).

Table 7. Imbalance test results of observable covariates for three different matching algorithms via standardized difference in percent

Covariates X	Standardized differences in % after		
	Nearest neighbour matching	Radius matching	Kernel-based matching
Age respondent	4.3	18.5	13.4
Sex respondent	3.8	16.8	23.8
Primary occupation	9.5	25.8	17.1
Educational qualification	3.8	13.7	12.8
Annual income	2.3	15.9	11.1
Marital status	4.2	11.9	12.4
Household size	3.8	31.6	10.8
Perception of AGSMEIS	4.8	62.8	14.5
Constant	6.1	45.8	26.5
Mean absolute standardized difference	4.7	26.9	15.8
Median absolute standardized difference	2.3	15.9	11.1

Source: Authors' compilation based on household survey.

We further checked the imbalance of single observable characteristics and it shows that the quality of the simple method of choosing the only closest neighbour with respect to the propensity score NNM is much higher than that the KM and RM in matching. The summary statistics (Table 6) for the overall balance of all covariates between participating in AGSMEIS (treatment group) and not participating in AGSMEIS (control group) confirms the higher quality of NNM. For the kernel-based matching and radius; both the mean and the median of the absolute standardized difference after matching are far above the threshold of 5%, while the NNM is reasonably below. In sum, regarding the average treatment effect, our findings suggest that participation in AGSMEIS has a higher ATT of access to credit, production inputs and training compared to their counterparts with the same propensity score. The study has demonstrated that AGSMEIS has the potential to transform and empower African youths' enterprise in agri-business/SMEs. Entrepreneurship (or self-employment) is the main labour market opportunity that young people could have. An essential component of achieving broad-based economic growth and development in this region will be harnessing the growth potentials of these youth start-ups.

4.4 Trend of Micro Small and Medium Enterprise Development and formalization in Nigeria

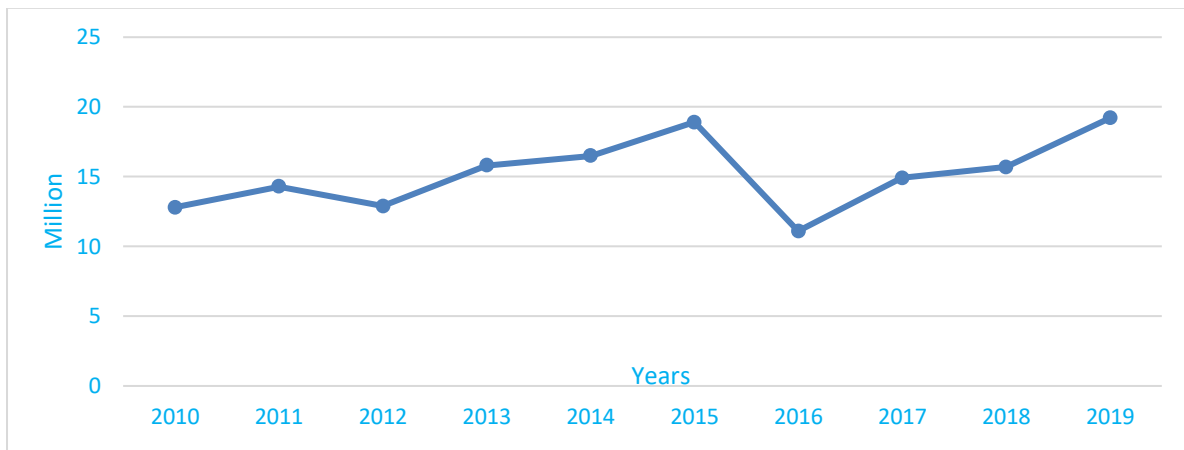


Figure 5. MSMEs development in Nigeria 2010 - 2019

Source: NBS, 2020.

Actually, the economy of the nation may have been down in the past few years due to insecurity and other harsh economic conditions that threatens the existence of large enterprises. This had prompted the relocation and closure of many of such enterprises, and thereby creating high level of unemployment in the country. However, statistics have shown a significant increase in the number of MSMEs formalized and many young Nigerians becoming self-employed, especially in the agricultural value chain (Olajide, 2021; OFA, 2021). Analysis (Figure 5) shows that, development and formalization of MSM enterprise has been erratic, but has also recorded a steady increase from 2017 after coming out of a big dip in 2016 (NBS, 2020). Though many other factors may have played their roles, but the provision of small credit via AGSMEIS must have contributed significantly to this development (CBN, 2017).

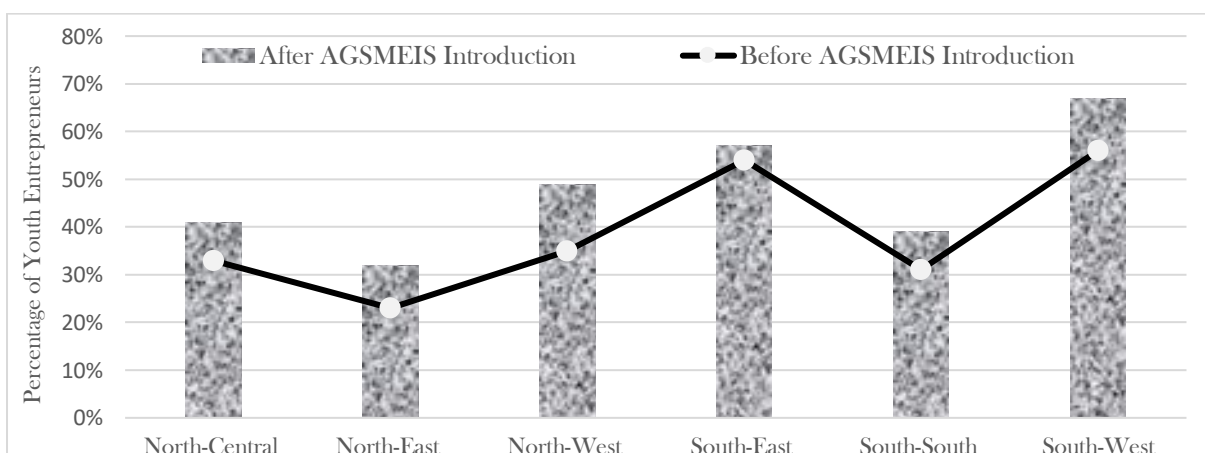


Figure 6. Percentage growth of youth in self-employment by region

Sources: SMEDAN, 2020.

A pre-post AGSMEIS introduction analysis (Figure 6) shows that, due to the introduction of AGSMEIS and some other factors, there has been increase in the number of youths getting involved in developing business of theirs (SMEDAN, 2020). In the north central, there has been an average of 8%, North-East 9%, North-West, 14%, South-East, 3% South-South, 8% and South-West 11%. This is a total indication that, AGSMEIS has made a significant impact.

Table 8. Unemployment and Underemployment of Youth 15 -35 Years from 2010 - 2019

Year	Youth Labour			Rate of		
	Force Population	Underemployed	Unemployed	Employed	Unemployment	Underemployment
2010	27,335,153	1,152,226	713,890	25,469,037	3	4.2
2011	28,209,878	1,441,860	825,740	25,942,278	3	5.1
2012	31,914,210	1,363,812	3,619,219	26,931,179	11	4.3
2013	33,927,916	1,343,777	3,342,005	29,242,134	10	4.0
2014	34,790,095	2,069,011	1,013,478	31,707,606	3	5.9
2015	36,720,239	2,735,677	2,573,225	31,411,337	7	7.5
2016	40,739,520	3,905,930	3,995,056	32,838,534	10	9.6
2017	42,630,875	5,561,563	6,271,177	30,798,135	15	13.0
2018	44,229,419	5,710,510	7,135,199	31,183,710	16	12.9
2019	48,456,720	5,654,232	7,543,562	35,258,926	16	11.7

Source: NDE, 2020.

Analysis (Table 8) shows that the rate of unemployment and underemployment has been erratic. However, even while the unemployment rate is not reducing, the rate of underemployment has been dropping since 2018 (NDE, 2020). This reduction in underemployment can be attributed to the number of youth that have accessed the AGSMEIS loan and have started their own entrepreneurship endeavor.

On the whole, our findings indicate the same view with secondary data information in that AGSMEIS initiative generates significant gains in empowering youths in enterprise development, and if enhanced, will help many young people become entrepreneurs (NBS, 2020; SMEDAN, 2020; NDE, 2020). The findings also arrive at a settlement with Papanek (1962), Harris (1970,1971) and Kirzner (1997,1998), in that developing entrepreneurial ecosystems that would include adequate supply of credit for SMEs at reasonable cost, even for those who do not have traditional collateral, could go a long way towards facilitating high growth entrepreneurship. However, in extension and contribution, this study suggests that preparing youth in both the hard and soft skills for entrepreneurship is essential for AGSMEIS to empower young people. While entrepreneurial training and education are the most commonly used in non-monetary interventions, international experience with these measures is mixed. Youth entrepreneurship training programmes can be successful provided that other necessary pre-conditions are met, including correct targeting and a good time limit. AGSMEIS can target

the most vulnerable (in rural areas, from low-income families) or maximize the number of potential beneficiaries.

5. Concluding Remarks, Caveats, and Future Research Directions

Agri-business/small and medium enterprises investment scheme (AGSMEIS) is a voluntary initiative of the banker's committee approved at its 331st meeting held on February 9, 2017. The scheme requires all banks in Nigeria to set aside 5% of their profit after tax (PAT) annually. The initiative is to support the federal government of Nigeria's efforts and policy measures for the promotion of agricultural businesses, small and medium enterprises (SMEs) as vehicle for sustainable economic development and employment generation. In this study, we determined the impact of AGSMEIS on youth empowerment in Nigeria. This paper contributes to the African youth entrepreneurship debate by assessing the empirical evidence in four areas that have received much attention in the literature: what is the level of youth's participation in AGSMEIS? Does AGSMEIS impact on youth's access to financial services? What is the impact of AGSMEIS on youth's access to critical factors of production? Does AGSMEIS impact on young Nigeria's access to training for entrepreneurship development and capacity building?

A total of 1200 respondent were sampled across the six geopolitical regions of Nigeria. Results from the use of a combined propensity score matching and logit model indicate that AGSMEIS initiative generates significant gains in the struggle against youth unemployment, and if enhanced and intensified would lift many young people out of poverty; which emerges as a result of unemployment and underemployment in sub-Saharan Africa. The findings suggest that Africa policy makers need to be at the forefront of youth labour market policy to develop a labour market initiative that can absorb and harness the potential value of this growing youth population in the region. Supportive policies that provide business training and support to SMEs will play an important role. Equipping young people with business skills, both while at school and within the market place, is needed to turn, what are often survivalist enterprises, into growth oriented business that have the potential to generate employment opportunities for others. Supporting SMEs with affordable credit facilities as well as ensuring the support of AGSMEIS is the key to empowering the African youth.

In terms of implications for practice, it is apparent from the findings that youth empowerment in entrepreneurship development can be enhanced by AGSMEIS intervention. Hence, more youths (especially those in the informal economy sector) need to leverage on the AGSMEIS

programme in order to benefit from associated rewards, *inter alia*: insurance of the Nigerian youth having access to finance for SMEs businesses across the agricultural value chain, which includes input supply, production, storage, processing, logistics and marketing of agricultural products. The implication for policy largely surrounds the relevance of how AGSMEIS can be consolidated by policy makers to act as an agricultural enhancement interface between the government and the youths in the country. On the implication for research, although this study shows that AGSMEIS play an important role in bridging the finance gap for entrepreneurship development, it is imperative to extend this research with a study that determines whether AGSMEIS can be a substitute for the Nigeria's growth enhancement support scheme (GESS).

The main caveat of the study is that it is limited to the scope of Nigeria. Hence, the findings cannot be generalized to other African countries with the same policy challenges. In the light of this shortcoming, replicating the analysis in other countries is worthwhile in order to examine whether the established nexuses withstand empirical scrutiny in different contexts of Africa.

Disclosure statement

No potential conflict of interest was reported by the authors.

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APPENDIX 1

**DRAFT QUESTIONNAIRE FOR AGSMEIS YOUTH
EMPOWERMENT PROGRAMME IN NIGERIA**

State _____ LGA _____

City/Town _____

Name of Respondent: _____

Name of Enumerator: _____ Enumerator's ID _____

1. Sex of Respondent :
Male [] Female []
2. Age Bracket:
a) Between 20 - 30 [] b) Between 31 - 40 [] c) Between 41 - 50 []
d) Between 51 - 60 [] e) Above 60 []
3. Marital Status:
a) Married [] b) Single [] c) Separated [] d) Widowed [] e) Divorced []
4. Number living in household at present (Household Size):

5. Highest Educational Qualification of Respondent:
a) None [] b) Primary [] c) Secondary [] d) Tertiary []
6. Religion of the Respondent
a) Christianity [] b) Islam [] c) Traditional d) others []
7. Employment status of Respondent
a) Government/Private non-farm Paid Employment [] b) Self-employed (non-farm) [] c) Full
Time Farming [] d) Full time Student [] e) Unemployed [] g) Others []
8. If self-employed, what is the major occupation of Respondent?
a) Trading [] b) Handicraft e.g mechanic, welding, bicycle repairs, etc [] c) Palm wine Tapping []
d) Others (Please Specify _____)
9. If in other employment, are you involved in part time farming
a) Yes [] b) No []
10. How long have you been farming:
a) 0- 10 Years [] b) 11- 20 Years [] c) 21 - 30 Years [] d) 31 - 40 Years [] e) Above 40 Years []
11. If you are involve in farming, what is the size of your farm:
a) 0 - 1 hectare [] b) 2- 3 hectares [] c) 4 - 5 hectares [] d) 6- 7 hectares [] e) Above 7 hectares []
12. Range of monthly income of Respondent
a) (0- 50,000) [] b) (51,000 - 100,000) [] c) (101,000 - 150,000) [] d) (151,000- 200,000) []

- e) (201,000-250,000) [] f) (251,000-300,000) [] g) (301,000-350,000) [] h) 351,000- 400,000 []
- i) Above 400,000) []

13. Do you or any other person(s) in your household earn off farm income

- a) Yes [] b) No []

14. If yes, what is the range of the monthly income from other household members put together

- a) (0- 50,000) [] b) (51,000 - 100,000) [] c) (101,000 - 150,000) [] d) (151,000- 200,000) []
- e) (201,000 - 250,000) [] f) (251,000 - 300,000) [] g) (301,000- 350,000) [] h) 351,000- 400,000 [] i) Above 400,000) []

Section B Knowledge and Participation in AGSMIES

15. Are you registered as a farmer?

- a) Yes [] b) No []

16. If no, why

- a) I know nothing about that [] b) The distance to the registration point is far [] c) I am not a party member [] d) Our religion is against it [] e) I have no access to telephone [] f) I don't know how to read and write []

17. What is the walking distance between your house and the registration/redemption point?

- a) Between 1-20 minutes[] b) between 21-40 minutes[] c) between 41-60 minutes [] d) above 1 hour []

18. Have you heard about Agri-Business/Small and Medium Enterprise Investment Scheme (AGSMEIS)before now?

- Yes [] No []

19. If yes to 19 above, have you ever used it to access agricultural credit?

- Yes [] No []

20. If no to 20 what is the major reason for not accessing credit with (AGSMEIS).

- a) It requires training [] b) It requires rigourous documentation [] c) You must know someone []
 - d) I am not a member of the ruling party [] e) I cannot cope with the training fees [] f) Others []
- Please specify _____

21. If yes to 20 above, tick the range of credit you have used it to access?

- a) Below 100,000 [] b) 100,000 - 1,000,000 [] c) 1001,000 - 2,000,000 [] d) 2001,000 - 3,000,000 []
- e) 3001,000 - 4,000,000 [] f) 3001,000 - 4,000,000 [] g) 4001,000 - 5,000,000 [] h) 5001,000 - 6,000,000 [] i) 6001,000 - 7,000,000 [] j) 7001,000 - 8,000,000 [] k) 8001,000 - 9,000,000 [] l) 9001,000 - 10,000,000 [] g) 4001,000 - 5,000,000 []

22. If yes to 19 above, how did you hear about (AGSMEIS)?

- a) Through a friend [] b) Through the internet [] c) Through our village head [] d) Through extension agent [] e) Through a training institute [] f) Through radio and television []

23. Is your village/location properly located where you can access an EDI?

- a) Yes [] b) No [] c) Not sure

24. Was it the exact amount you applied for that was granted to you?

- a) Yes [] b) No []

25. If no to 25 above, are you satisfied with the amount granted to you after

- a) Yes [] b) No [] c) Not sure

26. Before the last 4 years, how do you source your farm credit

- a) Personal reserve [] b) ADP [] c) Cooperatives [] d) Friends and family [] e) Banks and other money lenders []

27. Before the last 4 years, how easy do you source your farm credit

- a) Very easy [] b) Moderately easy [] c) hard [] d) Very hard [] f) Not at all []

28. Before the last 4 years, how costly was your farm credit

- a) Very costly [] b) Moderately costly [] c) not sure [] d) lowly costly [] f) lowly costly []

29. If you have access the (AGSMEIS), in what area has it help in your farming? (tick as many)

1	Purchase of input	
2	Hiring of labour	
3	Access to land	
4	Access to modern machineries	
5	Feeding of household	
6	Others	

30. Where you trained formally before application of loan

- a) Yes [] b) No []

31. If yes to 31 above by who

- a) Through an EDI [] b) NIRSAL MFB [] c) By ADP [] d) By a cooperative [] e) Self training []

32. In the last years, have there been any improvement in farm entrepreneurship in your area?

- a) Yes [] b) No []

b) If Yes, to 33, how will you attribute it to the government AGSMEIS programme

- (a) Wholly [] (b) To a large extent [] (c) To a little extent [] (d) Not at all []

c) Those who access the AGSMEIS loan, how will rate its impact on their farming activities

- (a) To a large extent [] (b) To a little extent [] (c) Not at all [] d) negatively []

d) What do you see as the four major challenges of AGSMEIS in your Locality

We thank you most sincerely for your time and support in completing this questionnaire.

Name of Enumerator: _____

Signature: _____ Date: _____