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Smart Agri-Preneurship Dimensions and Food Accessibility in South-West, Nigeria

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SMARTAGRIPRENEURSHIPDIMENSIONSANDFOODACCESSIBILITYINSOUTHWESTNIGERIA

Strictly as per the compliance and regulations of:

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Abstract- Climate change, lack of resources and little market accessibility are current threats to food production, food accessibility, and food security. Climate-smart Agriculture is the way to turn around the situation to more resilience and higher Agricultural productivity leading to improved food accessibility and security status. This paper utilized a cross-sectional survey research design and primary data to examine the effect of smart Agri-preneurship dimensions on food accessibility in South-West, Nigeria. The study adopted Cochran, Hatzes, Butler and Marcy formula (1997) to ascertain the sample size. A reliable and valid questionnaire was administered to 558 Agri-preneurs. The regressed constructs revealed a positive and significant effect of smart Agri-preneurship on food affordability (Adj. $R2=0.642$, F (6551) $=167.442$ and $p=0.000$). The study concluded that smart Agri-preneurship dimensions affected food accessibility in South-West, Nigeria. The research recommends smart Agri-preneurship adaption to address food insecurity and most especially food accessibility, preferably within the South-South part of Nigeria where farmlands are affected by the oil population.

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I. Introduction

Food accessibility challenge has been attributed to be tied to the economic and physical access of the people to staple meals (Metu, Okeyika, &Maduka, 2016). Blekking, Waldman, Tuholske, & Evans, (2020) opined that a decrease in income, unemployment, and underemployment causes downturn inaccessibility to food. Though the price of food varies in developed countries of the world, it is at least accessible to most people. Bondemark, (2020).Nigeria has been affirmed by the world poverty clock report, as the country with the largest extreme poverty population as of June 2018, with an estimate of 86.9million out of a 170million people (Kazeem, 2018). Also based on the assessment of 109 countries by Global Food Security Index (GFSI) (2015), with an index score of 37.1, Nigeria was 91st position based on indices of food availability, affordability, quality, and safety. This further explains that the average Nigerian may be too poor to economically access foods grown within the country's low purchasing power. This is further aggravated by the infrastructural conditions needed for the production and distribution of food, such as transportation (road and rail), environmental degradation and non-sustainable Agricultural production arising from flooding (Metu, Okeyika, & Maduka, 2016).

Achieving food security around the world has remained major and continuous constraint encounter by different economies of the world due to continuous increase in population, high volatility of food price, low farm yield and poor Agricultural innovation investment. Food insecurity is a continuous persistent challenge to human growth and development, most of the scientists, experts and analysts allocate the majority of human development hindrance to food insecurity. Eliminating hunger and malnutrition and achieving global food security more widely, is among the most intractable problems farmer faces. However, according to the Food and Agricultural Organization (FAO) (2018), the level of food security achievement at the global realm is unimpressive and academic questions are being asked regarding why the dwindling farmer's returns. This perspective is actual and topical throughout all last century and the beginning of the 21st century.

There is evidence of food insufficiency in developed countries and severe food insufficiency in less developed countries (Nyambayo, 2015). Both situations, equally detrimental to the nutritional status of the populations and have led to malnutrition over-nutrition and undernutrition, respectively (Nyambayo, 2015). Food insecurity pre-existed in developed countries such as the United State of America and Canada (Walker, Block & Kawachi, 2012) for decades earlier than 2008. In the United States of America, FAO (2018) reported that there is a low dietary nutrient intake of families with food insufficiency when they compared the serum nutrient levels of food sufficiency and food insufficiency families in the American population. In Canada, there is a nutrient inadequacy in Canadian adults and adolescents with food insecurity and food insufficiency due to high price volatility and poor smart Agricultural investment (Lambie-Mumford, Crossley, Jensen, Verbeke & Dowler, 2014).

The Agriculture and food sector is facing multiple challenges. With the global population projected to grow from 7.6 billion in 2018 to over 9.6 billion in 2050, there will be a significant increase in the demand for food (DESA, 2019). At the same time, the availability of natural resources such as freshwater and productive arable land is becoming increasingly

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constrained. The performance of Nigeria's Agribusiness is tied to macro-development issues, for example; the average maize productivity in Nigeria is 2 tons per Hectare across the country which is well below the average observed in other countries with similar climate patterns, the yield deficit is calculated to be as low as -80% of the potential yield (Global Yield Gap Atlas [GYGA], 2018). Another macro-economic performance challenge is the structure and behaviour both regionally and nationally, of land fragmentation by members of large families which increases transaction costs and limits mechanization. The weak Agricultural support services for farmland aggregation limits large plantations that should have cost benefits of economies of scale (Popp, Olah, Kiss & Lakner, 2019). Also, limited infrastructure, low access to credit, poor access to fertilizers and very low knowledge on how to fight food insecurity has affected affordable nutritious food supply to the population (FAO, 2018).

The diagnosis from research points to smart Agri-preneurship as the potential to become an engine of inclusive growth through private and public investments at different scales that increase food security output and creates a network of poverty reduction across the population (Thornton, Aggarwal & Parsons, 2018). Despite a large number of studies (Khatri-Chhetri, Aggarwal, Joshi & Vyas, 2017; Cochrane, Cundill, Ludi, New, Nicholls, Wester, Cantin, Murali, Leone, Kituyi & Landry, 2017; Eme, Onyishi, Uche, & Uche, 2014) on smart Agri-preneurship and food accessibility, there remain a lacuna yet to be filled. The studies of Sakyi (2012) and Wekesa, Ayuya and Lagat (2018) recommended that further studies investigate the relationship between smart Agri-preneurship (greenhouse farming, hydroponics, geo-mapping, drone Agriculture, soil analysis, nutrient cycling) and food accessibility among Agribusinesses in developing countries (AGRA, 2018) like Nigeria. The food accessibility challenge in the country has been attributed to the economic and physical limited access of a vast majority of the population to nutritious food (Metu, Okeyika, & Maduka, 2016).

Although Nigeria prides itself as the largest economy in Africa, it has been affirmed by the world poverty clock report, as the country with the largest extreme poverty population as at June 2018, with an estimate of 86.9million out of a 170million people (Kazeem, 2018) which is more than 50% of the population. Also, further outcries from Gates (2019) have advocated that the Federal Government swings to action based on the Goalkeepers Report, as the country is predicted to have over 152m people in extreme poverty out of a projected population of 429m people by 2050. Also based on the assessment of 109 countries by Global Food security output Index [GFSI] (2015), with an index score of 37.1, Nigeria was 91st position based on indices of food availability, affordability, accessibility, and safety. This further explains that the average Nigerian may be too poor to economically access foods grown within the country due to low purchasing power. This limited food accessibility is further aggravated by poor infrastructural conditions for the distribution of food, such as transportation (air, road, and rail) and environmental degradation arising from flooding (Metu, Okeyika, & Maduka, 2016) which have affected food security output. Therefore, this study aims to examine the effect of smart Agri-preneurship dimensions on food accessibility anchored on the Lewis theory. The Lewis theory focused on how the traditional farmer can employ innovation and become modern farmer which enhance farmer creativity, creation of wealth and increase in productivity

II. Literature Review - Smart Agri-Preneurship

FAO (2018) defined Smart Agri-preneurship as an Agricultural activity that: Sustainably and efficiently increases productivity and income (adaptation), reduces or removes Greenhouse Gases (mitigation) and enhances the achievement of national food security output and development goals. This concept was generally meant to strike a balance between food production and environmental stability without compromising any of the two. Smart Agri-preneurship entails biotechnology and applies its technique in nutrient cycling, greenhouse farming, geo-mapping, soil analysis, and hydroponics by using living organisms or substances from these organisms to make or modify a product for a practical purpose (Abah, Ishaq & Wada, 2010; Fasiha, Kaleem, Aleem & Shujjah, 2017). These improved plants or animals or develop microorganisms for specific uses, become an edge or unique selling point to prolong farm produce shelf life and improved yield, besides the traditional genetic breeding techniques (Fasiha, Kaleem, Aleem & Shujjah, 2017).

Agribusiness and biotechnology cut across several fields, and smart Agri- preneurship seems to be in deer need in proffering a wide range of innovations in solving many problems that have tackled Agriculture before the advent of the modern-day Agri-preneur. More so, it is even more crucial in African countries characterized by poor research and poor farmers, whose sole livelihood depends on Agriculture (Fasiha et al., 2017). Smart Agri-preneurship is more like a blue ocean strategy which is the simultaneous pursuit of differentiation and low cost to open up a new market space and create new demand. It is about creating and capturing uncontested market space, thereby making the competition irrelevant. It, therefore, is seen as one of the unique ways of creating an atmosphere for sustainable Agribusiness growth, even amid competition and climate change.

The discipline of smart Agri-preneurship combines elements from many disciplines, such as genetics, microbiology, accounting, business administration, marketing, engineering, Agriculture and environmental science (David, 2016). Modern Agribusiness includes a range of tools that Agri-preneurs employ to understand and manipulate the healthy high farm yields for use in the production or processing of agricultural products in the value chain. Smart Agri- preneurship is being used to address problems in all areas of Agricultural production and processing (Fasiha et al., 2017). This includes plant breeding to raise and stabilize yields, improve resistance to pests, diseases and abiotic stresses such as drought and cold and to enhance the nutritional content of foods. Smart Agri-preneurs now use technology to speed up breeding programs for plants, livestock, and fish. Due to wash away of nutrients by erosions, most lands of the earth are becoming unbearable but some crops have been hereditarily altered by smart entrepreneurs to make them more liberal of conditions like salinity, cold and drought (Gaffney, Challender, Califf & Harden, 2019). Some progress toward increased food security output has been made, as insect-resistant, drought resistant and herbicide-tolerant varieties are reducing the risk of crop losses. One of the developments in the identification of a plant gene from Arabidopsis thaliana (tiny weed) shows tolerance to salt, drought and the heat and cold in plants. When this gene was inserted into tomato cells, these cells withstood these conditions far better than ordinary cells (Kropff, Pilgrim & Neate, 2019).

a) *Food Accessibility*

Food accessibility is defined as when individuals have adequate income or other resources to purchase or barter to obtain levels of appropriate foods needed to maintain the consumption of adequate diet or nutrition. The World Food Summit defines Access as having physical, economic and social contact. Accessibility is still not commonly accepted as an essential part of food security output. The ability to access food rests on two pillars, economic and physical access (FAO, 2012). Food accessibility and availability are strongly linked; food availability is fundamentally dependent on food production, but this can be local or distant. If distant, local food availability also depends on trade systems, packaging, transport and storage (Ingram, 2011). A key factor determining access to food is its affordability (Ingram, 2011). Food affordability and accessibility are dependent not only on food costs but also on the disposable income that can be spent (FAO, IFAD & WFP, 2013; Ingram, 2011). Access to food is primarily determined by the incomes, food prices and the ability of households and individuals to obtain access to social support. Individuals' access to food is also heavily influenced by social variables, including gender positioning and power hierarchies within households (FAO et al., 2013).

The establishment of human communities always depended on access to food. Food accessibility refers to people's ability to obtain the food they desire. Food accessibility can be described by three elements: affordability, allocation, and preference. The three elements of food utilization are nutritional value, social value, and food safety (Baffes, Kshirsagar & Mitchell, 2019). The ability to access food rests on economic and physical access (Timmer, 2012). Economic and physical access to food is an important component of food and nutrition security. Food accessibility and food availability are strongly linked. Food availability is fundamentally dependent on food production, but this can be local or distant. If distant, local food availability also depends on trade systems, packaging, transport, and storage. This adds to the cost for the consumer unless the cost of production at the distance is so much less than locally to off-set these additional costs (FAO, 2012).

According to Edrish and Neema (2019), poor access to reasonably priced, nutritious and good quality food may lead to poor diet with low consumption of fruits and vegetables and high consumption of energy-dense, nutritionally inferior food. Clark, Rouse, Sehgal, Bailey, Bell, Pike, Sharpe and Freedman (2019) stated that Low-income communities often have less physical access to food they desire due to the high cost of transportation and bad road infrastructure. Low accessibility of healthy food in some geographic location and demographic groups, increases the risk of health problems such as obesity, diabetes, and cardiovascular diseases and this has increasingly become a severe public health concern (Wiki, Kingham & Campbell, 2019). People with better access to providers of healthy (high- quality, fresh, low-fat and nutritious) foods; however, persons who can access affordable food tend to have healthier diets and lower levels of obesity with less growing health concern due to smart Agri-preneurs meeting their demands. Lack of food access or adequate nutrients weakens the immune system which reduces the life span in developing countries (Wright, Gupta & Yoshihara, 2018).

b) *Smart Agri-Preneurship and Food Accessibility*

The eradication of hunger is one of the topmost priorities in the Sustainable Development Goals especially in developing economies. Branca, McCarthy, Lipper, and Jolejole (2011) and Suberi, Tiwari, Gurung, Bajracharya, and Sitaula (2018) found that smart Agri-preneurship positively attempts to use scientific research and technology to improve the Agribusiness space and farmland management, thus increasing food accessibility and farm productivity. McPherson, Wang, Marsh, Mitchell, and Schachtman (2018) and Sakyi

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(2012) showed that soil analysis and climate change management through modern Agriculture technology to manage soil erosions and deforestation have significantly improved Agribusiness farmland management and food accessibility. Wekesa, Ayuya, and Lagat (2018) found that drone Agriculture, nutrient cycling, GeoMapping, and soil analysis have significantly increased food accessibility. Kropff, Pilgrim, and Neate (2019) opined that greenhouse farming with variable shading for the optimization of Agricultural and energy production are introducing new thinking towards addressing food insecurity and food accessibility.

Ponisio and Ehrlich (2018) showed that smart Agri-preneurship measures significantly increase food accessibility. Similarly, Obiero (2013), Ponisio and Ehrlich (2018) and Rogers, Lassiter, and Easton (2014) revealed that there is a positive and significant relationship between green-house farming, Hydroponics, geo-mapping and food accessibility as farms need not be too far anymore. This shows that sufficient investments in the Agribusiness sector would give better yields and enhanced productivity. Pandey, Tripathi, and Shankar (2018) and Oyakhilomen and Zibah (2014) showed that there are positive and significant effects and the relationship between smart Agri-preneurship measures food accessibility. On the contrary, However, Cai and Leung (2006) and Dauphin, Lubroth, and Jobre (2016) showed that geo-mapping and drone Agriculture analysis does not significantly increase food accessibility. Also, Kira and Sumari (2019) revealed that a geospatial approach insignificantly affects food accessibility.

III. Methodology

This study adopted a cross-sectional survey research design. This research design is appropriate because it enables the researcher to collect data that will represent the perception and view of people across a large geographical area, which in this case are the selected registered Agribusinesses across South-west, Nigeria. The adoption of this design is consistent with the studies of (Tammo, Ellen, Gersom & Eunice, 2017; Suryabhagavan, Asfaw & Argaw, 2016; Steven & Anne, 2016; Shoji, KerobimLakra, Kushwaha, Meena & Pravin, 2014; Kuforiji, Egwakhe & Binuyo, 2019). The unit of analysis of the sample for the study was the Agri-preneurs who own or manage the Agricultural firms. The justification for this unit of analysis is based on the fact that; (1) the smart Agri-preneur is at the top of the leadership team responsible for vision, innovation and effective communication of the ideas.

A total population of six hundred and thirty-two (632) Agri-preneurs within the South-Western states in Nigeria was further filtered to reflect only duly registered with the Ministry of Agriculture of the respective states that have kept proper records of their farm production output. Based on these event exclusion criteria, the population was further filtered to arrive at a finite population of the size of five hundred and fifty-eight (558) and also adopted as the sample size of the study using the Cochran (1997) formula. A structured questionnaire was adapted from previous studies (Singh, 2017; Amone, 2017; Al-Houti, 2017; El Ghoumari, Tantau, and Serrano, 2005; Kibiti and Gitonga, 2017; and Admane, 2013; Harrell, 2014; and Peuralahti, 2014; Al-Arab, Torres-Rua, Ticlavilca, Jensen, and McKee, 2013; and Hafsal, 2016; Gordon, 2004 and Pettersen, 2014) along the constructs with sections capturing demographic information, Smart Agri-preneurship dimensions (greenhouse farming, hydroponics, geo-mapping, drone Agriculture, nutrient cycling, and soil analysis) and farm productivity which was measured as a whole using a Likert scale ranging from very high (6) to very low (1).

Pilot testing was carried out to test the content of the research instrument and validation and reliability were confirmed through Kaiser-Meyer Olkin (KMO) > 0.6, Bartlett's test < 0.05, Composite reliability > 0.7 and Average Variance Extracted > 0.5 and scores from Cronbach's Alpha Coefficients > 0.7 respectively. The pilot study was undertaken in selected farms within the North central area of Nigeria, covering Kwara State and Benue State, largely because these Agriculture firms were outside the study area. Afterwards, primary data for the study which was retrieved by well-trained research assistants from the field was treated to conform to the assumptions of regression as well as minimize errors in the data collected and provide for better results. The researchers developed a structured model for the study using the main constructs, and the data were analyzed using multiple regression analysis.

Econometric model specification of the study

Y=f (X)

FA = f (GHF, HP, GM, DA, NC, SA) ....Functional Relationship 1

SAP = (GHF, HP, GM, DA, NC, SA)

y1= Food Accessibility (FA)

X= Smart Agri-preneurship (SAP)

X= (x1, x2, x3, x4.x5, x6)

Where;

X1= Green House Farming (GHF)

x2= Hydroponics (HP)

x3= Geo-Mapping (GM)
x4= Drone Agriculture (DA)
x5= Nutrient Cycling (NC)
x6= Soil Analysis (SA)

Where:

$\beta 0$ = the constant term which defines the food security output without inclusion of independent variables.
$\beta 1 - \beta 7$ = the coefficients for the individual influence of the respective smart Agri-preneurship variables on the food security output dimensions.
εi = Error term

a) Results and Discussion of Findings

To test a hypothesis (There is no significant effect of smart Agri-preneurship dimensions on food accessibility in South-West, Nigeria), multiple linear regression analysis was used. The independent variable of the study was smart Agri-preneurship dimensions while the dependent variable was food accessibility. Data from five hundred and fifty-eight (558) respondents were gathered and analyzed using SPSS version 23 software. The results of the multiple linear regression analysis are shown in Table1.

Table 1 shows the result of the analysis on smart Agri-preneurship dimensions (green house farming, hydro phonics, geo-mapping, drone Agriculture, nutrient cycling and soil analysis) on food accessibility. From table 1, the result of the analysis revealed that green-house farming (β = 0.197, t = 4.386, $p<0.05$), hydro phonics (β = 0.134, t = 3.019, $p<0.05$), geo-mapping (β = 0.106, t = 2.965, $p<0.05$), drone Agriculture (β = 0.050, t = 2.922, $p<0.05$), nutrient cycling (β = 0.198, t = 5.372, $p<0.05$) and soil analysis (β = 0.256, t = 6.846, $p<0.05$) have positive and significant effect on food accessibility in South-West, Nigeria. This finding indicated all dimensions of smart Agri-preneurship are significant in improving food accessibility in South-West, Nigeria.

Furthermore, the result of the multiple regression analysis showed the model summary (R2 and adjusted R2) of the effect of smart Agri-preneurship on food accessibility in South-West, Nigeria. The coefficient of determination (R2) value in the analysis is 0.646 which indicates that smart Agri-preneurship dimensions have a moderate positive and significant effect on food accessibility in South-West, Nigeria. The coefficient of multiple determination, adjusted R2 is 0.642 ($F(6, 551) = 167.442$, $p=0.000$) revealed that smart Agri-preneurship explained 64.2% of the changes in food accessibility in South-West, Nigeria while the remaining 35.8% could be attributed to other factors not included in this model. Also, the F-statistics (df = 5, 551) = 167.442 at p = 0.000 ($p<0.05$) indicates that the overall model is significant in predicting the effect of smart Agri-preneurship dimensions on food accessibility. This means that smart Agri-preneurship has a significant effect on food accessibility in South-West, Nigeria. The multiple regression model is expressed as thus:

$$FAC = 0.238 + 0.197GHF + 0.134HP + 0.106GM + 0.050DA + 0.198NC + 0.256SA \ldots\ldots \text{ eq. iv}$$

Where:

FAC = Food Accessibility; GHF = Green House Farming; HP = Hydroponics; GM = Geo-Mapping; NC = Nutrient Cycling; SA = Soil Analysis

The regression model presented above revealed that when smart Agri-preneurship dimensions are at constant zero, food accessibility would be 0.238. This informs that without smart Agri-preneurship dimensions, food accessibility would be at a positive value of 0.238. Furthermore, the regression model explains further that when green-house farming, hydro-phonics, geo-mapping, drone Agriculture, nutrient cycling, and soil analysis are improved by one unit, food accessibility would also increase by 0.121, 0.190, 0.161, 0.200 and 0.248 units respectively. This implies that an increase in smart Agri-preneurship dimensions (greenhouse farming, hydro-phonics, geo-mapping, nutrient cycling, and soil analysis) would lead to a subsequent increase in food accessibility in South-West, Nigeria. The result of the multiple regression analysis revealed that smart Agri-preneurship is very important in the realization of food accessibility in South-West, Nigeria. In light of the foregoing, the null hypothesis (H01) which states that there is no significant effect of smart Agri-preneurship dimensions on food accessibility in South-West, Nigeria was therefore rejected.

The findings of this study with the findings of Shoji, KerobimLakra, Kushwaha, Meena, and Pravin (2014) and Rogers, Lassiter, and Easton (2014) revealed that there is a positive effect between greenhouse farming and gas emission that helps the climatic environment and Agribusiness space and thus increase holistically farm productivity and food accessibility. Sharon, Choudhary, and Kumar (2010) empirically emphasized that the application of smart Agri-preneurship significantly improves overall farm productivity and soil fertility which in turn increases farm product accessibility. Eliopoulos and Potamitis (2017) empirically showed evidence that Agribusinesses who failed to adopt smart Agri-preneurship practices would be more severely negatively affected by weather changes than those adapting smart Agri-preneurship.

Yi-Hsuan, Ssu-Pei, and Ting-I (2019) examined the application of organic hydroponics on homegrown urban Agriculture in Taiwan. The study showed that for the inorganic nutrient solution, the farm yields of treatment with aeration are higher than those without aeration. On the contrary, for the organic nutrient solution, the farm yields from the treatment without aeration were higher than those with aeration. This confirms that nitrification is necessary for an organic hydroponic system which in turn significantly increases its farm product accessibility and output. Zaccardelli, Pane, Villecco, Palese, and Celano (2018) examined the environmental impacts of urban hydroponics in Europe. The results of the study show that the hydroponic farm performs better than cultivations in heated greenhouses, and similarly to conventional open-field farms. Nyambayo (2015) and Sharma, Acharya, Kumar, Singh, and Chaurasia (2018) studied how hydroponics as an advanced smart Agri-preneurship technique for vegetable production profiting Agribusiness. The study revealed that for the successful implementation of a commercial hydroponic technology, it is important to develop low-cost techniques that are easy to operate and maintain; require less labour, lower overall setup and operational cost and significantly increase food availability and accessibility.

IV. Conclusion

In this study, the researcher presented the concept of smart Agri-preneurship and food accessibility. The outcomes revealed that smart Agri-preneurship dimensions provided constructive and significant effects on food accessibility. Conversely, an examination of the smart Agri-preneurship dimensions revealed that most dimensions were critical due to the use of advanced smart technologies. The outcome of the study established the apriori expectation of the study. The study hence concludes that undeniably smart Agri-preneurship dimensions are imperious for the exponential development in food accessibility, which in turn improves pricing as well as the fresh delivery condition of food to the average person in South-West, Nigeria.

Physical and economic access to Agricultural produce is positively influenced by smart Agri-preneurship constituents as deduced from this research but critical attention to the Icarus paradox should be observed. When an Agribusiness opportunity is huge and Agri-preneurs invest in expensive sophisticated specialized equipment in Nigeria for increased food quality, a period of apparent success may be enjoyed as upper strata of the population is serviced but by the very elements that led to their initial success may fail due to political instability, inconsistent policy, galloping inflation, change of taste or lack of economic access. The research recommends smart Agri-preneurship adaption to address food insecurity and most especially food accessibility. Also, other smart Agri-preneurial pointers not considered in this study could be examined to confirm their influence on food accessibility, preferably within the South-South part of Nigeria, where oil pollution has affected farmland.

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Tables

Table 1: Summary of multiple regression analysis foreffects of smart Agri-preneurship onfood accessibilityin South-West, Nigeria.

Coefficients[a]						
Model Four $y4 = \beta0 + \beta1x1 + \beta2x2 + \beta3x3 + \beta4x4 + \beta5x5 + \beta6x6 + \varepsilon i$		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.238	0.141		1.691	0.091
	Green House Farming	0.197	0.045	0.188	4.386	0.000
	Hydro phonics	0.134	0.044	0.139	3.019	0.003
	Geo-Mapping	0.106	0.036	0.117	2.965	0.003
	Drone Agriculture	0.050	0.017	0.080	2.922	0.004
	Nutrient Cycling	0.198	0.037	0.208	5.372	0.000
	Soil Analysis	0.256	0.037	0.268	6.846	0.000

a. Dependent Variable: Food Accessibility
b. $R = 0.804^a$ $R^2 = 0.646$ Adj. $R^2 = 0.642$
c. $F(6, 551) = 167.442$ ($p=0.000$)

Source: Field Survey (2020)