

EFFECT OF COVID-19 ON AGRIBUSINESS SMEs: A STUDY OF BENUE STATE

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ABSTRACT

The main aim of this study was to examine the effect of COVID-19 on agribusiness SMEs in Benue State, Nigeria. The population for this study is 415 registered agribusiness SMEs. Multi-stage random sampling was used to arrive at a sample size of 204. Data for the study was collected using structured questionnaire. Inferential statistics was used to analyze data. The Logit regression was used to realize the effect of COVID-19 on agribusiness SMEs in Benue State. A total of 204 questionnaires were sent-out and the same 140 were retrieved; after careful scrutiny, 18 were rejected, because they were defaced and improperly filled. Findings showed that an increase in education of agribusiness managers was statistically positive and significant at a value of 5%. The coefficient of the educational level of agribusiness managers is positively and significant at 1%. This implies that additional years of formal education can increase the chance of SMEs survival during COVID-19. Higher education can enhance acquisition of innovation/technology, skills/competencies and adaptation of existing knowledge to new ones. Experience of agribusiness SMEs was significant at 1%. An increase in experience of agribusiness SMEs, influence the likely probability that agribusiness SMEs will use or not use available raw materials. That is, odds ratio of COVID-19 influence and non-influence is increased by a factor of 0.0003427, with other factors remaining constant. Consumer preference for product is positive and significant at a value of 1%. The study concludes that, there is certainly an effect of COVID-19 on agribusiness SMEs in Benue State. Awareness of Government policy and incentives regarding COVID-19 and agribusiness SMEs should be encouraged by government agencies, especially the National Orientation Agency. Benefits from government policies incentives on COVID-19 and agribusiness SMEs should be encouraged by bringing on board NGOs and cooperatives in order to checkmate nepotism and favoritism.

Keywords: Agribusiness SMEs, effect of COVID-19, Benue State

1. INTRODUCTION

Nigerian SMEs contribute significantly to the Nation's GDP and over 80% of the workforce. Yet enormous challenges hampering growth exist and COVID-19 heightens these. It is difficult for SMEs identify inherent growth opportunities in the aftermath of the pandemic or build lasting businesses for generations. With COVID-19, the challenges hampering the attainment of food security in Nigeria could deepen (PwC, 2020). The impact of the pandemic in Benue State is

already being felt in the form of rising food prices. As at April 2020, food inflation rose to 15% compared to 14.7% in December 2019. To ensure that the agricultural sector is not further impacted by the distortions caused by COVID-19, the government should ensure more palliatives are provided to farmers in the form of improved seedlings, basic farm implements at highly subsidized prices, and free or more affordable farm extension services (FAO, 2020). Also, of importance is the need to ensure that the sector is accorded more budgetary allocations in line with the Maputo declaration, increase the operational capacity of the strategic grain reserves, and reintroduction of farming clusters to be financed through Public Private Partnership (PPP) arrangement. In addition, state governments should reassess their area of core competence in the agriculture value chain and promote investment in that area.

The pandemic adds to other threats including climate change and recurrent drought, Fall armyworm (FAW) and locust infestations in West Africa. "In Nigeria, it becomes more important to provide support to production systems across value chains towards mitigating the impact of this pandemic," the minister added. The states were selected based on the importance of sorghum and millet as food crops and access of partners to needy smallholder farmers. Nigeria had initiated an early coordinated response to minimize impact, Minister Nanono said. He explained that Joint Technical Task Teams (JTTC) at national and state levels developed strategies to facilitate free movement of food and agricultural inputs exempted from lockdown (PwC, 2020). The government is also planning ahead with research institutions to produce breeder and foundation seeds for production of high yielding seeds for 2020 wet and dry season as well as 2021 rainy season," the minister said. Nigeria's Federal Ministry of Agriculture and Rural Development (FMARD) and Centre for Dryland Agriculture at the Bayero University Kano (CDA-BUK) joined hands with ICRISAT and Syngenta Foundation for the initiative, which draws support from the Technologies for African Agricultural Transformation (TAAT) of the African Development Bank, Harnessing Opportunities for Productivity Enhancement for Sorghum and Millets (HOPE II), Accelerated Varietal Improvement and Seed Delivery of Legumes and Cereals in Africa (AVISA) and Agricultural Transformation Agenda Support Program (ATASP-1) projects. To mitigate the impact of COVID-19 and contribute to building sustainable food systems and food security, ICRISAT developed a three-phase response plan with Recovery and Coping Phases, Adaptive Phase and Transformative Phase in West and Central Africa.

2. METHODOLOGY

The study adopted descriptive survey approach. The study area, Benue State is comprised of three Agricultural Zones. The population for this study is 415 registered agribusiness SMEs. However, since it will be impractical to study the entire population, a sample size from obtained sample frame was taken for the study. Multi-stage random sampling was used to arrive at a sample size of 204. Data for the study was collected using structured questionnaire. Inferential statistics was used to analyze data. The Logit regression was used to realize the effect of COVID-19 on agribusiness SMEs in Benue State. Following the procedure adopted by Essien (2014) and Barthelemy *et al.* (2016), the model is specified as:

$$\text{Prob}(Y_i = 1) = \text{Ln} \left(\frac{PY_i}{1-PY_i} \right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + e_i \quad \dots (1)$$

Where,

L_i = Logit or log of odds ratio

$PY_i = 1$ is the probability that COVID-19 affects agribusiness SMEs

$1 - PY_i$ is the probability that COVID-19 does not affect agribusiness SMEs

$\beta_1, \beta_2 \dots \beta_{10}$ = Coefficients to be estimated

e_i = error term

X_1 = price of product (Naira)

X_2 = education of owners/managers (years)

X_3 = age of owners/managers (years)

X_4 = experience in production/sales (years)

X_5 = cost of raw materials (Naira)

X_6 = availability of raw materials (1= adequate supply of raw materials during COVID-19, 0= otherwise)

X_7 = government policies (1= government policies help during COVID-19, 0= otherwise)

X_8 = technology (1= technology is vital during COVID-19, 0= otherwise)

X_9 = consumer preference (1= increased consumer consumption, 0= otherwise)

X_{10} = Cost of labour (Naira)

=estimated parameters, including the constant term (β_0).

a priori expectations are $\beta_1, \beta_2, \beta_3, \beta_4, \beta_7, \beta_8, \beta_9 > 0$ and $\beta_5, \beta_6, \beta_{10} < 0$

3. RESULTS AND DISCUSSION

3.1 Survey Response

A total of 204 questionnaires were sent-out and the same 140 were retrieved; after careful scrutiny, 18 were rejected, because they were defaced and improperly filled. A successful response rate of 59.80% was achieved as 122 of the questionnaires were considered acceptable. Majority of the respondents gave a positive remark; they commented that the study is an interesting project worth researching.

3.2 Effect of COVID-19 on Agribusiness SMEs in Benue State

Logit regression was used to estimate the factors influencing agribusiness SMEs during the COVID-19 pandemic via logit regression in Table 1; which show that an increase in education (X_2) of agribusiness managers was statistically positive and significant at a value of 5%. This implies that additional years of formal education can increase the change of managing the business. The coefficient of the educational level of agribusiness managers is positively and significant at 1%. This implies that additional years of formal education can increase the chance of SMEs survival during COVID-19. Higher education can enhance acquisition of innovation/technology, skills/competencies and adaptation of existing knowledge to new ones.

Table 1: Factors that affect agribusiness SMEs during COVID-19 (n=122)

		Coef.	Std. Err.	z	p > z
<i>logit model</i>					
Constant	β_0	45.6308	8.811621	5.18**	0.000
X ₁ = price of product (Naira)	β_1	0.9444308	0.9424302	1.00	0.316
X ₂ = education of owners/managers (years)	β_2	1.031881	0.3586103	2.88*	0.004
X ₃ = age of owners/managers (years)	β_3	0.2899172	0.0976580	2.96.*	0.006
X ₄ = experience in production/sales (years)	β_4	0.0003427	0.000677	5.06**	0.000
X ₅ = cost of raw materials (Naira)	β_5	0.9289832	1.244904	0.75	0.456
X ₆ = availability of raw materials	β_6	0.0390841	0.0767207	0.51	0.610
X ₇ = government policies	β_7	0.4039831	0.3278327	1.23	0.218
X ₈ = technology	β_8	0.0213085	0.0246783	0.86	0.388
X ₉ = consumer preference	β_9	0.0003506	0.0000756	4.64**	0.000
X ₁₀ = cost of labour	β_{10}	0.0670339	0.4740138	0.14	0.888
<i>parameters</i>					
Log Likelihood	LLF	-29.053085			
LR test of the one sided error	LR	326.98**			
Prob > Chi²		0.000			
Pseudo R²		0.8491			

Note: * and ** indicate that the parameter is significant at 5% and 1%, respectively

Source: Field Survey (2020) Computation from STATA Version 14.2 for Windows

Rubas (2004) however cautioned that acquisition of knowledge, and skills does not automatically translate to efficient (or substantial) use of resources; that but significant adoption (which for this study may indicate sustained use of raw materials in production) will only occur when such adds value to the individuals. This is important especially when the average gross margin of agribusiness SMEs are not radically different. Older agribusiness SMEs are also more likely to source for cheaper and better raw materials. For age of managers (X₃) of agribusiness SMEs, the likely probability that they will be affected or not by COVID-19 (i.e. odds ratio of COVID-19 effect or not) is increased by a factor of 0.2899172, other factors remaining constant. Experience of agribusiness SMEs was significant at 1%. An increase in experience of agribusiness SMEs (X₄), influence the likely probability that agribusiness SMEs will use or not use available raw materials. That is, odds ratio of COVID-19 influence and non-influence is increased by a factor of 0.0003427, with other factors remaining constant. The variable X₉ (consumer preference for product) is positive and significant at a value of 1%. The coefficient estimate for the variable X₉ is 0.0003506. This means that for a one-unit increase in X₉ (in other words, going from high to low), we expect a 0.0003506 increase in the log-odds of the dependent variable – COVID-19 influence or no-influence of COVID-19 – i.e. holding all other independent variables constant.

3.3 Test of hypothesis for objective

The LR chi² also referred to as LR test of the one sided error, is the likelihood ratio (LR) chi-square test. The likelihood chi-square test statistic was 326.98 which is significant at a 1% level

for the logit model on Table 1. The chi-square value of 19.70 achieved by Adikwu, Ayoola and Akerele (2016) was also statistically significant ($p < 0.05$). This implies that the model can be relied upon to explain probability of COVID-19 effect on agribusiness SMEs in the study area. The $\text{Prob} > \chi^2$ is the probability of obtaining the chi-square statistic given that the null hypothesis is true. This is, of course, the p-value, which is compared to critical value of 0.05 or 0.01 to determine if the overall model is statistically significant. In this case, the model is statistically significant because the calculated value is greater than the table values. Thus, the null hypothesis was rejected and the alternative accepted which states that, “*effect of COVID-19 on agribusiness SMEs in Benue State exists*”, was adopted.

4. CONCLUSION

There is certainly an effect of COVID-19 on agribusiness SMEs in Benue State. This effect is reflected in the price of products, experience in production/sales, cost of raw materials, availability of raw materials, government policies, technology, consumer preference, cost of labour, etc. However, certain agribusiness SMEs are able to cushion themselves against the COVID-19 pandemic which is reflected in their survival as of the time of this study, while the laggard agribusiness SMEs showed tendencies of folding up in the near future. The COVID-19 pandemic may have rendered havoc on agribusiness SMEs, but post COVID-19 plans and strategies are necessary for firms to survive in this bleak period.

5. RECOMMENDATIONS

Based on the findings of this study, the following recommendations are appropriate:

- i. Awareness of Government policy and incentives regarding COVID-19 and agribusiness SMEs should be encouraged by government agencies, especially the National Orientation Agency;
- ii. Benefits from government policies incentives on COVID-19 and agribusiness SMEs should be encouraged by bringing on board NGOs and cooperatives in order to checkmate nepotism and favoritism;

REFERENCES

- Abdelghafor, R.F. Mustafa, A.I. Ibrahim A.M.H. and Krishnan P.G. (2011). Quality of bread from composite flour of sorghum and hard white winter wheat. *Advance Journal of Food Science and Technology* 3(1): 9-15.
- Adeniji, T.A (2015). Plantain, banana and wheat flour composites in bread making: Prospects for industrial application. *African Journal of Food, Agriculture, Nutrition and Development*, 15(4): 10182-10197.
- Ayo, J.A.V..Ayo, A Popoola,C. Omosebi, M. and Joseph, L. (2014).Production and evaluation of malted soybean-acha composite flour bread and biscuit,. *African Journal of Food Science and Technology*,5(1)21–28,

<https://www.pwc.com/ng/en/press-room/liquidity-and-safety-of-staff-top-nigeria-businesses-covid-19-co.html>

<https://www2.deloitte.com/ng/en/pages/finance/articles/addressing-the-financial-impact-COVID-19-in-Nigeria.html>

- Ibe-Enwo A. U. (2009). Issues and Institutions in Micro-and Small Agro-Allied Processing Enterprises: Implication for Poverty Alleviation in Ebonyi State, Nigeria. Unpublished PhD Thesis submitted to the Department of Agricultural Economics, Management and Extension, Ebonyi State University. Pp.193.
- Ishaya, R., Ngaski, A. A., Maikasuw, A.A., Abubakar, B.Z. and Gona, A. (2018). Profitability analysis of groundnut oil processing among women in Zuru Emirate of Kebbi State *International Journal of Advanced Academic Research, Sciences, Technology & Engineering*. 4(2): 1-15.