

(CASE REPORT)



COVID-19 pandemic and effect on large scale poultry production: A case study of Ibadan Metropolis, Oyo State, Nigeria

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Abstract

This study was conducted to examine the effect of COVID-19 on large scale poultry production in Ibadan metropolis, Oyo state. Cross sectional data were obtained using a well structured questionnaire from one hundred large scale poultry farmers selected through a multi-stage random sampling technique. The data were subjected to descriptive statistics and gross margin analysis. The result obtained shows that majority of the farmers had 5000-6000 birds, used 1-5 labours and deep litter system to rear chicken in the study area. Increased production cost, transportation challenges and sales reduction were some of the qualitative effects of this pandemic on the farmer. The estimated gross margin value before the onset of COVID-19 was # 4,156,920 and after the onset was #2,543,975 signifying the adverse quantitative economic effect of COVID-19 on poultry production. It is therefore recommended that government should provide palliatives to relief these farmers.

Keywords: COVID-19; Effect; Poultry; Farmers; Gross Margin; Ibadan

1. Introduction

Pandemic is not a new event encountered in the history of humanity; mankind had faced various pandemics. The common feature of pandemics is their serious negative effects on the world emotions and global economy [1]. Pandemic is an epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting large number of people. In the light of this, COVID-19 can be characterized as a pandemic [2]. This is due to the rapid increase in the number of cases outside China that has affected a growing number of countries [3]. Many countries around the world have been declared by World Health Organization (WHO) a state of public Health Emergency of International Concern (PHEIC) [4]. This virus is also airborne which spreads through infected respiratory droplets of cough and sneeze [5]. Infected person shows the flu-like symptoms of COVID-19 normally 2-14 days after exposure and include a series of ailments such as coughing, sore throat, fever, muscle and body aches [6]. Transmission takes place by touching the objects (surface having viral particles) and then it can easily enter into human body via touching of natural orifices like mouth, nose and eyes. These symptoms could however lead to fatal pneumonia air life threatening complications like acute respiratory difficulty or heart diseases in older patients. In curtailing this in Nigeria, government at both the federal and state level imposed and enforced drastic public health measures such as curfews,

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movement restrictions, lockdowns (partial and total), social distancing, ban on interstate travel, and closure of markets [7].

However, WHO has indicated that outbreak of COVID-19 is not just a public health crisis; it is a crisis that will touch every sector of the economy including agriculture, with the pandemic inflicting damages worth millions to farmers and agro-processor across the country [8]. Against the earlier assumption that this pandemic would not affect food security, experts are already raising fear that if urgent measures are not taken to protect the farmers, the country may experience severe food shortage [9, 10]. In Nigeria, frustration is already building up among farming communities as they watch their investments go down the drain with poultry subsectors being worst hit. This study thus aimed at assessing qualitatively and quantitatively the effect of COVID-19 pandemic on large scale poultry production in the Ibadan metropolis.

2. Methodology

This study was carried out in selected local government areas in Ibadan, Oyo State and multistage random sampling technique was used in selecting commercial poultry farmers. The first stage involved random selection of four local government areas in Ibadan metropolis; these are Ido, Lagelu, Oluyole and Egbeda local government areas while 25 large scale poultry farmers were randomly selected from each local government area to give 100 respondents used for this study. Data obtained were analysed using descriptive statistics and gross margin analysis. The gross margin model is expressed as follow:

$$GM = TR - TVC$$

where GM is the gross margin, TR is the total returns or revenue while TVC is the total variable cost.

3. Results and discussion

3.1. Enterprise Characteristics of Large-Scale Poultry Production

For the enterprise characteristics, four parameters (Fig. 1-4) were captured: the flock size, labour strength, type of birds produced and production system. These are major parameters that distinguished large scale poultry farmers from others. Majority of the farmers had bird that ranges from 5000-6000 birds, used 1-5 labours and deep litter system to rear mostly chicken.

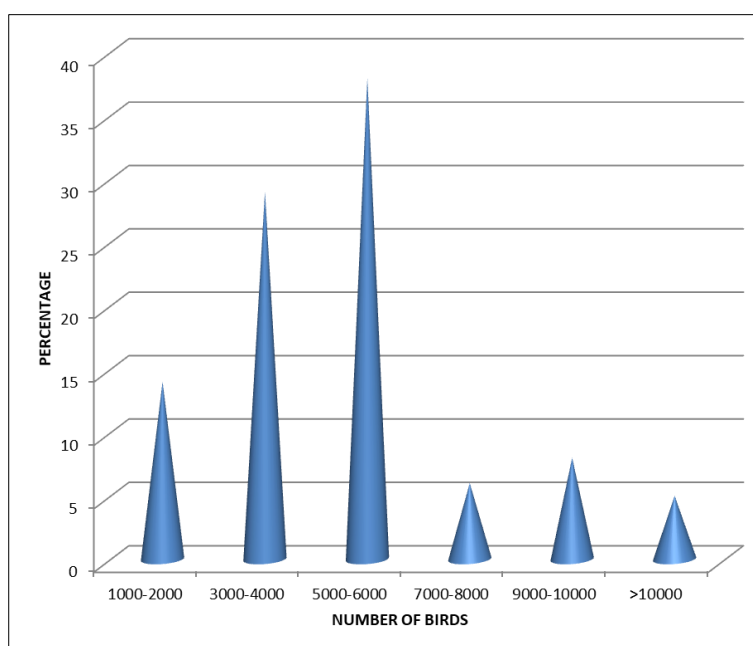


Figure 1 Flock size; (Source: Field Survey, 2021)

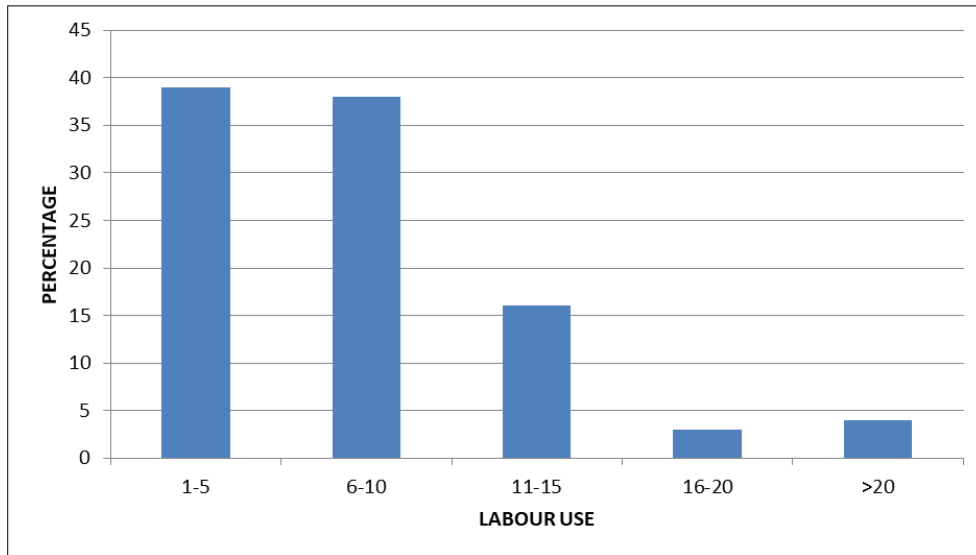


Figure 2 Labour Strength; (Source: Field Survey, 2021)

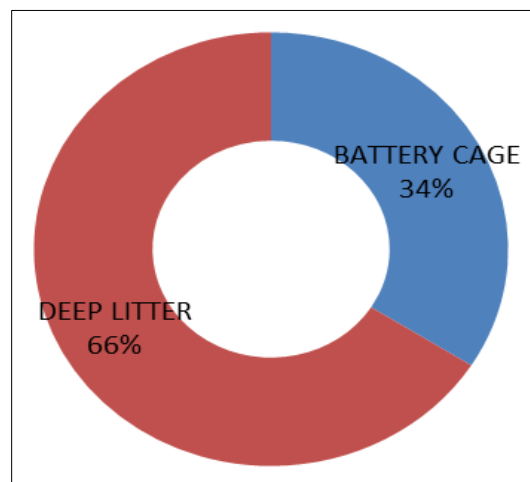


Figure 3 Production System; (Source: Field Survey, 2021)

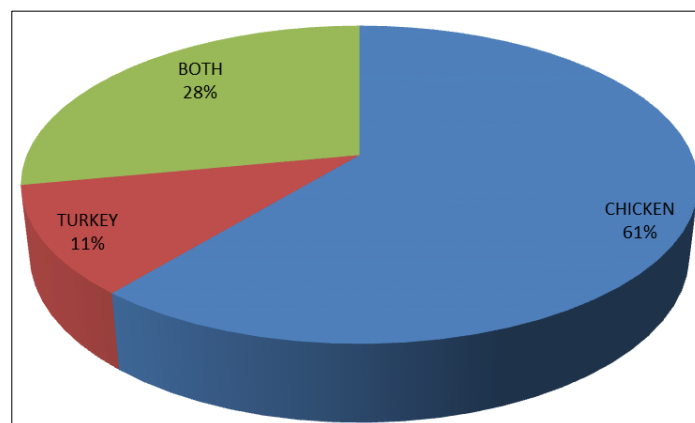


Figure 4 Type of Birds; (Source: Field Survey, 2021)

3.2. Effect of Covid-19 Pandemic on Large Scale Poultry Production

The devastating effect of Covid-19 pandemic on large scale poultry production was quantitatively and qualitatively investigated. Fig. 5 revealed that increase in production cost has been a major effect of this pandemic on production followed transportation challenges during lockdown period which affect sales and make production inputs not available. This consequently resulted in significant hardships and economic losses [11, 12]. Similar result was reported by [9]. The gross margin estimates before and after the onset of COVID-19 depicts the quantitative economic effect of this pandemic on large scale poultry production (Table 1). The total variable cost before the onset of COVID -19 was #809,489 which is lesser than the total variable cost (#875,833) after the onset of COVID-19. Also, total return before the onset of COVID-19 was #4,966,409 while the total return after the onset of COVID -19 was #3,419,808. The gross margin of these farmers was reduced by almost 50% as a result of COVID-19 Pandemic. This result corroborates the findings of [13] that Nigeria would experience continued poor growth and investment consequent upon the fluctuations in commodity prices due to COVID-19.

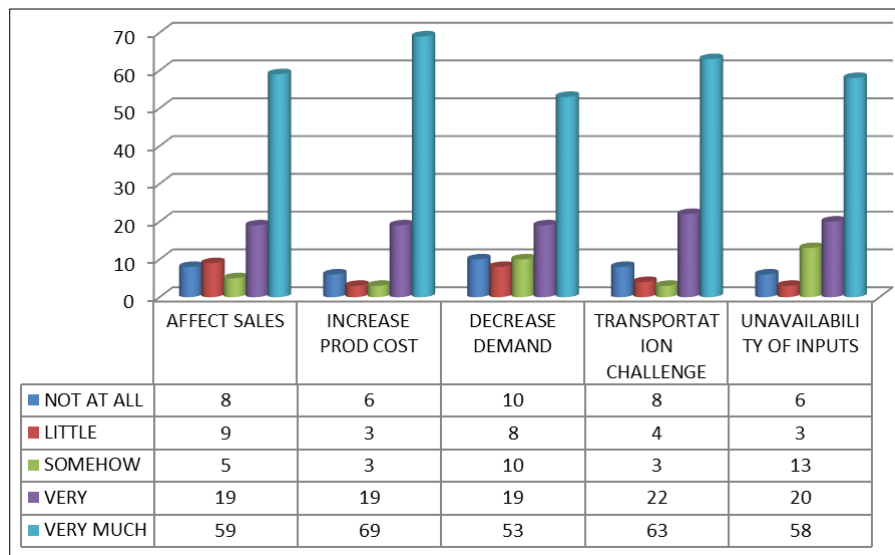


Figure 5 Effect of COVID-19 on production; (Source: Field Survey, 2021)

Table 1 Gross Margin Effect of COVID-19 Pandemic on Large Scale Poultry Production

Variable	Before	After
Cost of wood shavings	#22,500	#25,000
Cost of charcoal	#35,000	#40,000
Cost of feed	#423,906	#442,500
Cost of vaccine	29,583	#33,333
Cost of transportation	#20,000	#25,000
Cost of fuel	#90,000	#95,000
Cost of biosecurity	#10,000	#15,000
Cost of labour	#180,000	#200,000
Total revenue cost	#809,489	#875,833
Return on egg	#3,105,960	#2,150,280
Return on chicken	#391,964	#344,928
Return on Turkey	#1,468,485	#924,600
Total return (TR)	#4,966,409	#3,419,808
Gross margin = (TR - TVC)	#4,156,920	#2,543,975

Source: Field Survey, 2021

4. Conclusion

Based on the findings of this study, it was concluded that Covid-19 pandemic affected large scale poultry farmers by increasing production cost and consequentially reduced economic benefit in term of gross margin of the poultry farmers.

Recommendation

This study thus recommended that farmers should consider alternatives to farm inputs to reduce the cost of inputs and government should provide loan for these farmers to relief them of the effect of this pandemic.

Compliance with ethical standards

Acknowledgments

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Disclosure of conflict of interest

The authors declared that there is no conflict of interest on this article.

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