



SOCIO-ECONOMIC ANALYSIS OF SMALLHOLDER PIG PRODUCTION IN SABON GARI LOCAL GOVERNMENT AREA, KADUNA STATE, NIGERIA

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Abstract

Multistage sampling procedures were adopted in this study to select Sabon Gari Local Government Area (LGA), 3 out of 11 wards in the LGA and 49 pig farmers. The aim was to analyze the socio-economic as well as costs and returns of pig production in the LGA. A structured questionnaire was used to generate primary data which were analyzed using descriptive statistics and gross margin analysis. Results showed that majority of the farmers fell within the active productive age of 30-50 years; 67% were males and over 67% were married. The total variable cost (TVC) amounted to ₦185,000 while the gross income was ₦539,000 yielding a gross margin of ₦354,000 and return on investment of ₦2.91. Major constraints identified include shortage of funds and poor pricing of produce. Recommendations proffered include better access to credit and membership of cooperative and farmer groups.

Keywords: Socio-economic analysis smallholder pig production

Introduction

Unarguably, Nigeria with a population of about 165 million (NPC, 2006) is grossly undersupplied with essential food components, notably animal protein. According to Odedire and Adekinle (2015), low supply and high cost of animal protein such as beef, pork, mutton, chevron, poultry, eggs and milk have brought about an acute shortage of animal protein in the diet of most Nigerians. Many have argued that one veritable area of the livestock industry that is rather ignored, but holds the key to animal protein sufficiency in Nigeria is pig farming.

Pig is one of the domestic animals reared in Nigeria and belongs to the family *suidea* and order *Antiodactayla*, but especially to the domestic animals known scientifically as *Susscorfa* from which domestic pig was developed (Adetunji, 2011). The special advantages of pig rearing are enormous; pig produces better twice a year and this may range from 8 to 16 piglets in a litter. Also, pigs eat anything that is edible when given.

Pig production in Nigeria has not fully developed to exploit its full potentials. A study by Adetunji (2011) revealed that the neglect or slow growth of the swine industry can be attributed to acceptability and management problems. Evidently, in Sabon-Gari LGA, most of the producers are small scale producers, some with as few as two animals; pens for the pigs are ramshackle structures which often breakdown making it easy for the animals to go free range. Feeding is mostly on haphazard basis, depending most of the time on waste products. Generally, little or no use is made of concentrate feed for enhanced growth and productivity. Furthermore, there is the preponderance of low productive breeds in terms of size and quality.

Inspite of the daunting challenges outlined, many people still engage in rearing pigs and make a living out of it. The objectives of this study are to:

- i. describe the socio-economic characteristics of pig farmers in the study area,
- ii. describe the system of pig production in the area,
- iii. estimate the costs and returns of the enterprise,
- iv. identify the major constraints affecting pig production in the study area.



Materials and Methods

The Study Area

This study was conducted in Sabon-Gari Local Government Area of Kaduna State, Nigeria. With headquarters in Dogarawa, the LGA is situated within the Northern senatorial zone of Kaduna State alongside Kubau, Ikara, Makarfi, Soba, Zaria and Lere LGAs. Comprising of 11 wards, Sabon Gari LGA is situated at an elevation of 684mm above sea level, with annual average rainfall of 1000mm characterized by two seasons, the dry and wet seasons. The inhabitants of the area are predominantly Muslims, with others being rather Christians or animists.

Sampling and Data Collection

Purposive sampling was used to select Sabon Gari LGA and the three wards where pigs are commonly reared namely Basawa, Samaru and Sabon Gari. Secondly, considering the fewness of pig farmers in the area, a census of all 49 pig farmers in the three wards were covered using a structured questionnaire to elicit desired information.

Data Analysis

Primary data generated was analyzed using descriptive statistics including the measures of central tendency and dispersion. Gross Margin Analysis was used to estimate the costs and returns. Gross Margin (GM) is expressed as:

$$\begin{aligned} \text{GM} &= \text{GR} - \text{TVC} \\ &= \sum P_r Y_r - \sum P_i X_i \end{aligned}$$

Where GR = Gross Revenue; TVC = Total Variable Costs

$\sum P_r Y_r = Y_r$ = Output of pig production and P_r = Unit price of pig

$\sum P_i X_i = P_i$ = Unit price of i^{th} input (₦) and X_i = quantity of i^{th} input (₦).

Results and Discussion

Socio-Economic Characteristics of the Respondents

The socio-economic characteristics of pig production in Sabon Gari LGA are shown in Table 1 covering sex, age, marital status, educational status and years of experience.

Table 1: Distribution of Pig farmers based on socio-economic characteristics

Socio-economic Characteristic	Frequency	Percentage
Gender		
Male	33	67.3
Female	16	32.7
Age (Years)		
21 – 30	9	18.4
31 – 40	24	49.0
41 – 50	19	22.4
>50	5	10.2
Marital Status		
Single	7	14.3
Married	33	67.3
Divorced	3	6.1
Widowed	6	12.2
Educational Status		
No formal education	8	16.3



Primary education	27	55.1
Secondary education	10	20.4
Tertiary education	2	4.1
Years of experience		
<5	3	6.1
6 – 10	18	36.7
11 –15	23	47.0
>15	6	12.2
Membership of Cooperatives		
Yes	18	36.7
No	31	63.3

Source: Field study, 2018

The results in Table 1 showed that 67.3% of the pig farmers were males while 32.7% were females. This implies that males were more actively involved in pig production than females. This is in agreement with the findings of Oggunniyi and Omoteso (2011) who reported the dominance of males in their work on pig production in Oyo State.

On age, the results showed that 18.4% of the respondents fell within the age bracket of 21-30 years, 49% 31-40 years and 22.4%, 41-50 years only 10.2% of the pig farmers were above 50 years. Evidently, majority of the respondents (71%) fell within the active productive age of 30-50 years. This result agrees with the findings of Ajala and Adeshinwa (2007) in Southern Kaduna area of Kaduna State.

The educational status of the respondents showed that 55% had primary education while 20.4% had gone up to secondary education. Only 4.1% had tertiary education while 16% had no formal schooling. Regarding the years of experience in pig production, majority (83%) had put in 6-15 years; only 12.2% had put in over 15 years. The record of membership of cooperative societies was poor as only 18 farmers (31.7%) were members of cooperative/farms groups.

Pig Production Practices

The study revealed that most of the pig farmers were small scale operators with herd size ranging from 1-30 pigs. Details of production status and practices are shown in Table 2.

Table 2: Distribution of Pig Producers Based on production details

Items	Frequency (n=49)	Percentage
Herd size (numbers)		
1-10	13	26
11-20	27	55.1
>20	9	18.4
Breed Type		
Local	49	100.0
Exotic	0	0.0
Type of Housing/pens		
Concrete house	26	
Metal house	7	
Wooden house	16	
Type of Feed		
Concentrate only	0	0.0
House wastes	41	83.7
Mixture	8	16.3

Source: Field study, 2018.



The results on herd size, breed type, type of housing and feed types show the scale and status of pig farming in the area as below the commercial scale. Furthermore, the poor feeding regime and breed to type can only guarantee low yield (Petrus *et al*, 2011).

Costs and Returns of Pig Production

The costs and returns for pig production in the study area are based on average-sized farm using gross margin analysis as shown in Table 3.

Table 3: Summary of Costs and Returns of Pig Production

S/No	Items	Units	Unit Price (₦)	Total (₦)
1	Variable Cost			
	Piglets	14	5,000	70,000
	Feeding	14	3,650	51,100
	Labour (man-days)	22	1,500	33,000
	Drugs and vaccination	14	1,100	15,400
	Transportation	14	250	3,500
	Miscellaneous/contingency	14	500	12,000
	Total Variable Costs (TVC)			185,000
2	Gross Returns			
	Mature boar	7	35,000	245,000
	Mature sow	7	42,000	294,000
	Gross Revenue (GR)			539,000
	Gross Margin (GM) = GR – TVC			354,000
	Return on Investment (GR/TVC) = ₦2.91			

Source: Field study, 2018

The results in Table 3 showed that total variable cost (TVC) amounted to N189,000 while the gross returns from sale of mature boars and sows stood at N539,000 generating a gross margin of N354,000 and return on investment of N2.91 per naira invested. The enterprise is profitable and is in agreement with the findings of Ajala (2003) on the economics of pig production in Jama'a LGA of Kaduna State.

Pig Production Constraints

As earlier mentioned pig farmers in the area of study face a myriad of constraints which adversely affect productivity and returns.

Table 4: Distribution of Respondents Based on Identified Constraints

S/No	Constraints	Frequency*	Percentage*
1	Inadequate capital	43	87.8
2	Poor pricing of produce	37	75.5
3	High cost/unavailability of feedstuffs	41	83.7
4	Poor housing/pen facilities	22	44.8
5	Poor extension input	26	53.0
6	Pests and diseases	18	36.7
7	Poor sales patronage	38	77.5

Source: Field study, 2018 *Multiple responses allowed

Table 4 presents the major constraints limiting pig production in the study area with inadequate capital (87.8%) topping the list followed by high cost/unavailability of feedstuffs (83.7%) and poor sales patronage (77.5%). The 4th and 5th constraints respectively are poor pricing of produce (75.5%) and poor extension input (53%). It is interesting to note that poor housing (44.5%) and pests and diseases (36.7%) did not



feature prominently as constraints limiting pig production in the area. These constraints are similar to those identified by Adetunji (2011) in Oyo State.

Conclusion and Recommendations

The finding of this study indicates that pig production in Sabn Gari LGA of Kaduna State is a profitable venture, inspite of the many challenges faced by the farmers. The gross margin of ₦354,000 and return on investment of ₦2.91 are high profit indicators. For better returns the study recommends better access to credit and the formation and membership of cooperative and farmer groups by the respondents.

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