



ECONOMICS OF PIG PRODUCTION AMONG COOPERATIVE PIG FARMERS IN IJEBU-NORTH LOCAL GOVERNMENT AREA OF OGUN-STATE, NIGERIA

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ABSTRACT

The study analysed economics of pig production among cooperative Pig farmers Ijebu-North Local Government Area of Ogun-State, Nigeria. A two-stage sampling technique was used for the study. Data were gathered using a well-structured questionnaire administered to seventy (70) respondents. Both descriptive and inferential statistics were used for the analysis. The results showed the mean age of the respondents was 36 years, majority (90%) of the respondents were males with an average of 6 persons per households. The result also indicated that majority (85.7%) of the respondents were married with an average of 13 years farming experience. Performance measures showed benefit-cost of 1.40, implied that for every ₦1.00 spent by the farmers on pig production, 40kobo was realised as profit. since, benefit-cost ratio exceeded 1. This indicated that pig production is economical, lucrative, viable and profitable enterprise. The results also revealed that inadequate credit facilities (100%) emerged as the most pressing concern and was ranked 1st, followed by weather conditions (96.7%) positioned 2nd, while inadequate market for piggery production. (65.0%) was least challenge ranked 12th. Therefore, study recommended solutions to the problems confronting pig farmers identified as follows; reduction of high price of drugs and vaccines, subsidizing or reduction of feed cost, provision of adequate funds, adequate and quality of breeding stock, provision of infrastructural facilities and provision of adequate marketing of piggery production. If all identified solutions mentioned were all put into practice as agreed as solutions to the some challenges facing the farmers, the pig production will be easier and attractive likewise, farmer's income, profitability and production will be increased.

Keywords: Costs, Returns, Farmers, Challenges, Pigs, Feeds

INTRODUCTION

Cooperatives are borne out of a problem since everyone has one kind of need, goal, and objective to meet, which cannot be met individually, Therefore the value of cooperative societies as an effective means of rural transformation is widely recognize in advanced and less developed countries. Humans have always cooperated in order to survive Nadeau (2016), explains, cooperative as forms of ownership allow the well-being of people, the planet, and future generations to take priority over profits for shareholders and executives, these cooperatives can be powerful forces of change. Despite the internal policies adopted by cooperative societies to remedy the case of rural backwardness, the problem has remained unresolved; this is evident in the following: Persistence of agriculture stagnation; hunger, unemployment, poor housing, poor infrastructure facilities, malnutrition and ignorance, inadequacy of social services, high birth rate and death rate, low life expectance, Adekola (2017) pointed that over 70% of the Nigerian population are under the grip of poverty. Also, ignorant on cooperative basic principle, managerial know how and ineffective implementation of strategies in the rural areas, Lack of government undivided attention on cooperative activities mostly found in rural areas. As a result of the ever increasing human population in Nigeria and virtually static agricultural productivity, the animal protein consumption among Nigerians has worsened in the past few years (Okpor, 2019). Ajala *et al.*, (2017) observed that only 8.4g of the recommended 53.8g of protein consumption levels of Nigerians is derived from animal sources which means there is less than 16% contribution of animal products to protein



consumption of Nigerians. Studies by Ogunniyi and Omoteso (2019) revealed that animal protein has become a luxury instead of a dietary necessity since only a certain class of citizens find it convenient to buy. Omage (2018) observed that animal protein, apart from its palatability, is essential for normal physical and mental development of man. In view of this, there is a need to increase the production of domestic animals which are conventional sources of animal protein. Pigs have some desirable characteristics (especially its prolificacy) which make it a good species of animals to multiply extensively to supply animal protein shortages. Ogunniyi and Omoteso (2019) showed that the neglect or slow growth of the swine industry can be attributed to reasons which include religion, acceptability and above all, management problems. Social factors that could influence pig production in Nigeria include a general preference for ruminant meat and lack of incentives for investing in large scale pig production due to economic and political factors. There's also a popular belief that pigs are filthy and pose hazard to health because some people are of the belief that pork has too much fat. This is untrue for pigs that are produced under modern intensive husbandry production techniques as pigs can be very clean animals (Ajala *et al.*, 2017) and when fed properly, can have low back fat content. Another important reason is the presence of a large population of Muslims in Nigeria especially in the northern part where eating of pork is a religious taboo. Nevertheless, swine production has contributed to the socio-economic development of Nigerians through improved income, employment, improved nutrition and wellbeing of the farmers. Pig is an omnivore which in some respect competes with man for food but is also efficient utiliser of by-products and waste from human feeding. One of the major advantages of pigs is their ability to convert different kinds of feed including kitchen waste to meat. Another noticeable advantage pig has over other livestock species is good feed-to-meat conversion. Considering general feed conversion, pig is the most efficient farm animal in the conversion of feed energy to body energy (Umeh *et al.*, 2019). This gives them a rapid growth rate and leads to early maturity. The high rate of productivity is another major advantage of pigs. They are highly prolific, polyestrous and capable of producing up to 2-2.5 litters per year (Litter per sow is 9.96) which is as a result of their short gestation period that is between 3-4 months (Okoli, 2016). They have higher carcass weight compared to other red meats producing animals. MSUE (2020) revealed that the pig is a more efficient carcass yielder than cattle, sheep or goat and has an average dressing percentage of about 70 % compared to 62 % for cattle and 50 % for sheep and goat. In addition to this, pig carcasses have a smaller proportion of bones and higher proportion of edible meat. Pig manure is a valuable fertiliser and can be aerobically digested to produce cooking gas. It also stimulates the growth of microorganisms for feeding fresh water fish and ducks (Okoli, 2016). The growing population of humans and reports of a large number of people, who are been undernourished or starving especially in developing countries have prompted the need for an increase in food production a major worldwide issue of concern. The lingering economic quagmire, coupled with increasing population growth, low food production, and continuously rising food demand in Nigeria have led to increasing cases of mal-nutritional diseases nationwide, Onah (2020). This ugly development has necessitated a national consciousness and outcry for a tremendous improvement in animal protein production, availability, accessibility, and affordability in the country. Therefore, food supply must be improved by all the concerned sectors, including the different value chains both in quantity, quality, and proportionally distribution to enhance food security.

Pig (*Sus scrofa*), a monogastric animal, with huge potential and profitability, remains a very lucrative livestock venture with the capacity to ameliorate the hunger problem and safe guard the future of the nation's food supplies as well as a veritable tool for curbing the increasing unemployment occasioned by the current economic down turn. The breeding and rearing of pigs for domestic and commercial purposes have gained more attention in recent times due to the rising demand, especially for dietary purposes; thus, creating more markets for those in the piggery enterprise, National Agricultural Sample Survey (2021). However, pigs are been neglected in some parts of the country like in Northern Nigeria due to their religious and social factors while in the Southern part, people refuse to participate in pig production due to its dirty nature without realizing that piggery production can generate income. Its meat (pork) is nutritive which is a good source of protein due to its composition of essential amino acids and slightly low content of water which yields



energy maintenance. The pig industry in Nigeria is an important arm of the livestock sub-sector in the overall agricultural sector, Ezeibe (2020). This assertion derives from the fact that porcine production, among other species, has a high potential to contribute to high economic gain in three ways. First, the pigs have high fecundity, high feed conversion efficiency, early maturity, short generation interval, and relatively small space requirements, Cameron (2020). Secondly, they are multipurpose animals providing about 40% of meat in the world market, cooking fats and bristles. Pig is equally important for agro-based industries like feed mills for the provision of bone and blood which are used for the production of bone meal and blood meal respectively, which are good source of calcium in animal nutrition, Oguniyi *et al.*, (2019). In addition, pig's manure is an excellent fertilizer for enriching poor soils and providing biofuel for cooking. Its skin is also useful for light leather production, Babatunde *et al.*, (2020). Thirdly, it is produced under a variety of production systems ranging from simple backyard piggery, and pigs living on garbage belts to family operated farms or large-scale integrated pig industries with sophisticated biosafety measures, Cameron (2020). Nigeria like many other developing countries is facing the problem of shortage of dietary protein. The gravity of this problem is with a growing population. Pork represents one of the fastest ways of increasing animal protein since pigs grow at a faster rate than cattle, goats, and sheep, Ajala *et al.*, (2017). Despite these attributes, the production of pigs in Nigeria has remained low. Nigeria has a large population of Muslims who constitute the majority of most States of the Northwest and Northeast zones as well as other zones in Nigeria, so opposition to pig production is very significant and may not favor profitable pig production due to their religious belief, Umeh *et al.*, (2019). Other factors that have militated against pig production in Nigeria include disease outbreaks, inadequate technical assistance in the form of extension services, inaccessibility of pig farmers to credit facilities, lack of adequate supply of genetically sound breeders, high cost of feed, poor infrastructure facilities, the fear of inadequate market for piggery products, the absence of pig product processing industry in Nigeria, and the belief that pigs are dirty and constitute a health hazard. This is untrue for pigs that are produced under modern intensive production techniques since under suitable modern husbandry pigs can be very clean animals, Ajala *et al.*, (2017). Pig production is an integral component of rural smallholder farming systems in Viet Nam, with around 66 percent of rural households keeping pigs (GSO, VHLSS 2024). The rapid growth in demand for pig meat in Viet Nam presents an opportunity for rural households, particularly the poor, to earn more income. This could happen by obtaining greater market value per unit of their produce, getting lower prices for their purchased inputs (e.g., feed), realizing higher productivity through technology that translates to lower cost per unit of output, and in increasing the scale of production. Asset-poor smallholders, as individuals, have a relatively weak bargaining position in the market. The aim of the study is to specifically describe the socio-economic characteristics of farmers, estimate cost and returns of pig production and identify the constraints militating against pig production and possible solutions to challenges confronting the pig farmers in the study area.

METHODOLOGY

The Study Area.

The study area was Ijebu North Local Government Area which is one twenty (20) Local Government Areas. in Ogun State, Nigeria. Ogun state is bounded in the West by Republic of Benin, in the South by Lagos State and shares boundary with Oyo State in the North and Ondo State in the East. The State has an estimated land of about 16,409.26 square kilometers. The estimated total population of Ogun State is 9,379,500 (NBS, 2024). The study area is located in the lowland, semi deciduous forest belt with undulating topography while the overall altitude ranges between 122m-152m above sea level. The main economic activities are farming, saw milling and transportation services. The wet season is characterized by high annual rainfall between 1,200mm and 1,500mm between March and October of every year. The mean temperature ranges between -23°C - 32°C. These climatic conditions favour production of arable like, permanent crops cocoa, kolanut and pig, fowls, sheep production among other livestock.



Sampling Technique and Sample Size

A two-stage sampling technique employed in selecting the respondents for the study. The first stage involved purposive selection of the Ijebu-North Local Government Area from Ijebu Division being the predominant area for pig production due to concentration of pig production and consumption of pork. In the second stage, five (5) towns were selected, namely Ago-Iwoye, Oru, Ijebu Igbo, Awa/Illaporu. In the final phase, a simple random sampling technique was utilized to select sixty (60) pig farmers from the previously identified villages, in proportion to their respective populations in each of the selected farming communities: Ago-Iwoye (22 respondents), Oru (10 respondents), Ijebu Igbo (18 respondents), Ilaporu/Awa (10 respondents). Ultimately, a total of sixty (60) pig farmers were included, constituting the sample size for the study, which subsequently used as the basis for analysis.

Methods of Data Collection

Primary data was acquired through a well-structured questionnaire and oral interviews, gathering insights from the respondents (cooperative pig farmers). The secondary data was obtained from published journals, Internet sources, unpublished projects, conference papers, unpublished theses and disseminations and other relevant publications.

Methods of Data Analysis

Descriptive and inferential statistics were employed to analyze the collected data. Descriptive statistics, including frequency tables, percentages, cumulative frequency, and means, were used to examine the socio-economic characteristics of pig producers and constraints facing pig production among the farmers and possible solutions to challenges confronting the pig farmers. Inferential statistics, such as Budgetary analysis, was used to analyse cost and returns among pig farmers' production in the study area.

Budgetary analysis: Analysis of costs and returns was used to evaluate the profitability and rate of return on investment in tomato marketing in periodic markets in the study area. The return to marketing was determined using Gross Margin (GM) while profitability level was determined with Net Profit (NP).

$$GM = TR - TVC \text{ -----(i)}$$

where:

GM = Gross Margin (₦)

TR = Total Revenue (₦)

TVC = Total Variable Cost (₦)

$$\pi = TR - TC \text{ -----(ii)}$$

OR

$$\pi = GM \text{ -----(iii)}$$

where:

TC = Total Cost (₦)

$$TC = TFC + TVC \text{ -----(iv)}$$

TFC = Total Fixed Cost (₦)

$$RRI = NI/TC \text{ -----(v)}$$

where:

RRTVC = Rate of Return on Total Variable Cost (TC-TFC/TVC)

$$\text{Profitability ratio} = NI/TR \text{ -----(vi)}$$

$$\text{Benefit cost ratio} = B/C \text{ -----(vii)}$$

RESULTS AND DISCUSSION

Socio-economic Characteristics of the Respondents

The results on Table 1, revealed that 14.3% of respondents were under 25 years, 21.1% were aged 26-30 years, 40.0% fell within the age bracket of 31- 40 years bracket, 17.1% were between 41- 50 years and 7.1% were aged 51 and above. The data on respondents' ages showed that the majority are active, youthful and agile positioned in their productive age bracket, with an average age of 36 years. This finding corroborates the assertions of Shittu *et al.*, (2025), who noted that a significant



majority (85.9%) of pig farmers fell within this age range. The results also showed that majority (90%) of the respondents were males with only (10%) females in Pig. production within the study area, indicating a predominance of male pig production involvement. In additionally, a substantial 85.70% of the respondents were married, while only 14.3% remained single. The predominance of married pig producers indicated that they bear family responsibilities, and married farmers are likely to experience greater pressure to enhance outputs due to family obligations and caring. This findings aligned with the findings of Oimage (2018) who reported that majority of farmers had family to carter for. The findings further revealed that 28.6% of respondents had a household size of 4 or fewer, 45.7% had a household size ranging from 4 to 7, 14.3% had between 8 and 11 members, and 11.4% had 12 or more, yielding an average household size of 6 persons. This suggests a moderate household size that facilitates a balance between production and consumption, thereby providing a foundation for profitable and moderate investment. The findings also revealed that 14.3% of the respondents had less than 5 years of experience, 32.9% possessed 6 to 10 years of experience, 31.4% had between 11 and 15 years, 21.4% had over 16 years of experience. This shows that the majority 85.7% of respondents have amassed substantial experience, which is likely to enhance the efficiency of their production and increase their profitability. Regard to educational attainment, 20% of the respondents possessed tertiary education, 28.6% of respondents had completed secondary education, 35.7% had primary education and 15.7% had no formal education. This implied that a significant majority (84.3%) of the producers are educated, simply means they can read and write. This finding is consistent with Umeh *et. al.*, (2019), who asserted that farmers with higher educational levels can adopt innovation easily to improve their income. The findings further identified that 17.1% of respondents had been members of cooperatives for less than 3 years, 35.6% had joined cooperatives between 3 and 6 years ago, while 25.8% and 21.4% had been cooperative members for 7 to 10 years and 11 years ago or more respectively, with an average of 5 years. This revealed that a significant majority (82.9%) of respondents had been members of cooperative societies for more than 3 to 11 years ago or more.



Table1: Distribution of Respondents based on the Socio-economic Characteristics (n=70)

Socio-economic characteristics		Frequency	Percentage	Cumulative frequency	Mean
Sex					
	Males	90	90.0	90.0	
	Females	10	10.0	100.0	
Age (years)	≤25	10	14.3	14.3	36 years
	26-30	15	21.4	35.7	
	31-40	28	40.0	75.7	
	41-50	12	17.1	92.8	
	51 & above	5	7.1	100.0	
Marital status	Single	10	14.3	10.0	
	Married	60	85.7	100.0	
Household size	<4	20	28.6	28.6	6 persons
	4-7	32	45.7	74.3	
	8-11	10	14.3	88.6	
	12 & above	8	11.4	100.0	
Farming experience (years)	≤5	10	14.3	14.3	13 years
	6-10	23	32.9	47.2	
	11-15	22	31.4	78.6	
	16 & above	15	21.4	100.0	
Educational level (years)	No formal education	11	15.7	15.7	
	Primary education	25	35.7	51.4	
	Secondary education	20	28.6	80.0	
	Tertiary education	14	20.0	100.0	
Cooperative membership	< 3	12	17.1	17.1	5 years
	3-6	25	35.7	52.8	
	7-10	18	25.8	78.6	
	11 & above	15	21.4	100.0	
Total		70	100		

Source: Field Survey, 2025

Cost and Returns of Pigs Production

Estimated production margin for pig farmers revealed the Total Revenue (TR), Total Fixed Cost (TVC), Total Variable Cost (TFC) and Total Cost were ₦339,178.17, ₦3,918,179, ₦366,874.00 and ₦4,257,317.23 respectively while the Gross Profit (GP) was ₦2,034,701.71 and the Net Profits (NP) was ₦169,556.54. This results concur to the findings conducted by Babatunde *et al.*, (2020) using Gross Margin Analysis revealed that pig production is profitable with net income of ₦169,556.54. The calculated Rate of Return on investment (ROR), Profitability ratio (PR), Rate of returns on variable cost (RRVC) and Benefit-Cost ratio (B/C) were 40%, 0.30, 143.3% and 1.40 respectively. The costs and returns analysis revealed variable cost (92.03%) and fixed cost (7.97%) of the total cost of pig production with labour cost (27.07%) and cost of feeds (46.61%) constituting the highest variable cost. The RORI was estimated as 0.40 (40%) in this study. This result is lower than the findings Ajala *et al.*, (2017) which was 0.56 (56%). The higher RORI revealed in this findings could be attributed to access to capital, resource efficiency, contribution from people who gave out

capital in form of cash to producers to enable easy production of pigs and improved output. The findings further showed benefit-cost of 1.40, implied that for every ₦1.00 spent by the farmers on pig production, 40kobo was realised as profit, this disclosed that the enterprise is profitable and economical since, benefit-cost ratio exceeded 1. This findings agrees with (Baruwa, 2019) who concluded that swine production is a profitable business.

Table 2: Distribution of Cost and Sales Revenue and Profitability Analysis of Tomatoes Production

Variables	Value (₦)	Percentage %
Total Revenue	5,952,880.77	
Breeding Stock (Piglets cost)	205,571.11	4.83
Cost of labour	1,150,474.20	27.02
Feeds	1,984,312.63	46.61
Hired mating boar	155,235	3.65
Medications	196,711.12	4.62
Transportation	150,110	3.53
Repair and other expenses	75,765	1.77
Total Variable Cost	3,918,179.06	92.03
Depreciation		
Reservoir	52,320	1.23
Building/pen	198,861.03	4.67
Rent on land	71,880.87	1.69
Loan interest on fixed capital %/ annum	10,576.27	0.25
Feeders	5,500	0.13
Total fixed cost	339,138.17	7.97
Total Cost (TC)	4,257,317.23	100
Net income (NI)	1,695,563.54	
Gross margin (GM)	2,034,701.71	
Profitability index (PI)	0.30	
Rate of return on Variable Cost (RRVC)	143.3%	
Benefit cost ratio B/C	1.40	
Return on investment (ROI)	40%	

Source: Field Survey, 2025

Constraints Militating Against Pig Farmers' Production in the Study Area.

Cooperative pig farmers faced many challenges in the study area. The identified twelve (12) problems were analysed and ranked in order of importance in Table 3. They were; poor quality of breeding stock, high cost of feeding, inadequacy of fund, susceptibility to diseases, insufficient labour supply, high cost of drugs and vaccines, lack extension services, inadequate credit facility inadequate market piggery production, poor infrastructure facilities, weather conditions and religion. inadequate credit facilities (100%) was ranked 1st, weather conditions (96.7%) positioned 2nd, High cost of pen (95.0%) ranked 3rd, high cost of feed (93.3%) ranked 4th, poor quality of breeding stock (90.0%) was positioned 5th, lack of extension services (88.3%) was also ranked 6th while inadequate labour supply (83.3%), high cost of drugs and vaccines (81.7%), poor infrastructure facilities (75.0%) and religion (75. 0%), susceptibility to diseases and environment (66.7%) and inadequate market for piggery production (65.0%) were all positioned as 7th, 8th, 9th, 11th and 12th respectively. Insufficient credit facility emerged as the major challenge and most pressing concern confronting pig producers. In turns lead to low income and abandon of pig business when capital is no more available for the farmers for continuity of pig production. High cost of feeding ranked 4th with a substantial percentage value of (93.3%) could lead to decrease in farmers' profit margin. This agrees with the



earlier findings of Baruwa (2019) who reported that increase in feed costs as one of the major challenges in the pig enterprises, which in turn leads to reduction in profits or quick conversion of profits into losses.

Table 3: Distribution of Respondents based on the Constrains *Militating against Pig Production*

Challenges to pig production	Yes		No		Rank
	Frequency	(%)	Frequency	(%)	
Lack of adequate credit facility	70	100.0	0	0.0	1 st
Weather conditions	68	96.7	2	3.3	2 nd
High cost of pen	67	95.0	3	5.0	3 rd
High cost of feeding	65	93.3	5	6.7	4 th
Poor quality of breeding stock	63	90.0	7	10.0	5 th
Lack of extension services	62	88.3	8	11.7	6 th
Inadequate labour supply	58	83.3	12	16.7	7 th
High cost of drugs and vaccines	57	81.7	13	18.3	8 th
Poor infrastructure facility	53	75.0	17	25.0	9 th
Religion	53	75.0	17	25.0	9 th
Susceptibility to diseases and environment	47	66.7	23	33.3	11 th
Inadequate market for piggery production	45	65.0	25	35.0	12 th

Source: Field Survey, 2025

CONCLUSION AND RECOMMENDATIONS

The results showed that majority (90%) of farmers dominated by males involving in agricultural pursuits, with an average of 6 persons per households size along with a certain level of formal education and average age of 36 years old. The result also indicated that majority (85.70%) of them were married with an average of 13 years farming experience. Cooperative pig farmers faced many challenges in the study area which were identified, analysed and ranked in order of importance. The results revealed that Inadequate credit facilities (100%) emerged as the most pressing concern was ranked 1st, followed by weather conditions (96.7%) positioned 2nd, while inadequate market for piggery production (65.0%) were all positioned. Conclusively, these measures of performance indicated that pig production in the study area is lucrative, viable and profitable enterprise. The study therefore, recommended that government should establish feed mills to help in the production of pig feeds so as to reduce scarcity and hence help bring down the pain on price of pig feeds. Government should also provide credit facility for farmers with low or no interest rates. Farmers should be encouraged to form more cooperative societies to improve their business interest, expansion of their enterprise and enhance profitability. The solutions to the problems confronting pig farmers were identified as follows; reduction of high price of drugs and vaccines, subsidizing or reduction of feed cost, provision of adequate funds, adequate and quality of breeding stock, provision of infrastructural facilities and provision of adequate marketing of piggery production. If all identified solutions mentioned were all put into practice as agreed as solutions to the some challenges facing the farmers. The pig production will be easier and attractive likewise, farmer's income, profitability and production will be increased.

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