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PROFITABILITY ANALYSIS OF KILISHI MEAT PROCESSING IN KEBBI STATE

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Abstract

The study determined the Profitability of Kilishi meat processing in Kebbi State, Nigeria. A multi-stage sampling technique was used to select 120 Kilishi meat processors. A well structured questionnaire and oral interview were used to collect information based on processors socioeconomic characteristics and input- output data on processing. Descriptive Statistics and Net Farm Income Analysis were used to achieve the stated objectives of the study. The result shows that 100% of kilishi meat processors were male, Majority, 80% of the processors were married. The processors had average years of 43years. An average processor had one form of education or the other. The major animals used for Kilishi meat processing includes; Cattle, Sheep, Goat and Camel meat with 66.67%, 16.67% 10.83% and 5.83% respectively. Results from the study reveal that the processors realise a net income of ₦15, 585.85 suggesting that Kilishi processing is profitable. The constraints involved in Kilishi processing include; problem of sunlight during raining season, fresh meat being expensive, high cost of firewood and difficulty in accessing credit with 70.83%, 68.33%, 47.50% and 27.50% respectively. There is a need to enhance processors access to credit, encourage–processors to form cooperative society and develop policies towards ease of accessing processing inputs.

Keywords: Kilishi, Processing, Profitability, Processors, Kebbi State.

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INTRODUCTION

The importance of animal protein and its inadequacy in the diet of most households in developing countries of Africa and South East Asia are variously documented (Okolo, 2011; Ume, *et al*; 2016). For instance, Food and Agriculture Organization, (FAO), (2008) reported that animal protein origin is capable of predisposing victims to low productivity, high infant mortality, malnutrition and related diseases. This animal protein origin could be acquired in Nigeria through mainly cattle, poultry, goat, camel and sheep (Ajala *et al;* 2007).

Meat is one of the most popular and nutritious food items which come from the flesh of animals that are suitable as food (Forrest *et al.,* 2001).Meat however is a highly perishable food item due to abundance of a number of nutrients that favours the growth and multiplication of microorganism (Fonkem *et al.,* 2010). As meat are rapidly spoilt by reaction of microorganisms, man has over the decades developed a number of techniques in preserving meat that can maintain its stability and increase its self life while at the same time possessing adequate nutritive value and desirability (Apata *el al.,*2013). One of the meat preserving method is that in which the fresh meat are modified by the use of one or more seasoning, heat treatment or drying (FAO,2008).

Dried meat (Kilishi) is one of the processed meat products that are highly seasoned with spices and groundnut cake mixture (Mgbemere *et al.,* 2011). Kilishi is prepared by partially drying thin sheets of quality beef in the sun followed by addition of ingredients before the second sun drying period and partially roasted. It is prepared mainly from livestock products in the form of meat slices, infused slurry of defatted groundnut paste and spices and sun dried With the increased awareness and consumption of kilishi with the skyrocketing price of the production both in local and international markets as a result of high price livestock, its therefore becoming imperative to produce kilishi from other meat types. With the present widening gap between population growth and livestock growth, the livestock subsector of the agricultural sector seeks to provide affordable and readily available sources of animal protein to the Nigerian populace and to do this, several livestock options have been explored such as cattle, poultry, sheep as well as goats. A revolution in the aesthetic qualitative and quantitative production of kilishi is one by which Nigeria can improve the level of protein nutrient deficiency. This is possible if raw materials for processing are cheaper. Kilishi would therefore be within the reach of most members of the population of much needed animal protein intake. Any means of augmenting the performance of this indigenous meat product through packaging may offer some solutions to this age long problem since cost and technology are the major constraintsto improved packaging of this meat products. It's in this background that this work explores the profitability of kilishi processing in the study area by identifying the socioeconomic characteristics of kilishi processors in the study area, identify the different types of livestock used in kilishi processors, and cost and return of kilishi venture in the study area

METHODOLOGY

Study area

Kebbi state is located in the north western part of Nigeria between latitude $10^{0}8$N and $13^{0}15^{1}$N and longitude $3^{0}30$, $^{1}3^{0}$E and $6^{0}2^{1}$E. It has an area of 36,800km^{2} is bounded by Sokoto state to the north east, Zamfara state on the eastern part, Niger state to the south and

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international boundary with Benin republic to the west. It has a population of 3, 256,541million people. Majority of people in Birnin Kebbi are into Agricultural activities. (NPC 2006).

Sampling Technique and Sample Size

The sampling Technique and sample size described by Ishaya *et al.* (2018) was adopted. A multi- stage random sampling method was used to collect data for the study area. Kebbi state is made up of four (4) agricultural zones i.e Argungu, Bunza, Yauri and Zuru zones. In the first stage, from each of the four (4) agricultural zones one leading local government area noted for kilishi meat processing each were purposely selected giving a Total of four (4) local government areas which are Argungu, Gwandu, Yauri and Ribah for the study. Secondly from each of the Four (4) local government areas two (2) leading towns which are Argungu, Lailaba, Gwandu, Dalijen, Wasagu, Ribah, Yauri and Yauri central noted for Kilishi meat processing were purposely selected giving a total of eight (8) towns from each of the 8 towns fifteen (15) kilishi processors were randomly selected, thus giving a total of one hundred and twenty (120) processors as sample size.

Data Collection

Primary and secondary data were collected for the study through the use of structured questionnaires which were used to elicit relevant information on the socio-economic characteristics of kilishi meat processors such as age, marital status, educational level, years of experience and household size. Other information sourced includes prices of both inputs and output to kilishi meat processing and problems encountered in kilishi meat processing was identified.

Analytical Technique

The analytical tools used for the study include: Descriptive statistics and Net Farm Income adopted from Ishaya *et al.* (2018).

Descriptive statistics

Descriptive Statistics such as Frequency, Mean, Standard Deviation and Percentage were used.

Model for Net Farm Income Analysis (NFI)

Total expenses are defined as the total cost (TC) incurred during production period which is obtained by multiplying the various inputs used by unit prices. On the other hand, the total revenue (TR) or gross farm income (GFI) is the sum of outputs multiplied by their unit prices. Net farm income is the difference between gross revenue and total cost. The model is specified as:

NFI = GR-TC; TC = TVC+TFC

Therefore
NFI = Net farm income or profit and is the difference between gross revenue and total cost.

GR = Gross revenue (₦) represent the sum of the total value of kilishi

TC = Total cost (₦), TVC = Total Variable cost (₦) and TFC = Total fixed cost (₦)

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The variable cost items considered include costs of labour, cost of fresh meat, cost of fire wood, cost of spices labour and cost of oil while fixed costs (FC) include depreciation on equipments such as basin, bucket, knife, mat, Table, wire mash, paper sheet and poly bags

RESULTS AND DISCUSION

Distribution of kilishi meat processors according to socio-economical characteristics

Result in Table 1 showed that 100% of kilishi meat processing venture across the study area. Sex determines the ability to perform some physical works. It is also known that men are more competent than women. This is because they are more energetic than their women. This means that some ventures are gender sensitive. This work is in line with the work of Ishaya *et al.* (2018) who reported that 100% of women are involved in groundnut oil processing venture. Majorities 80% of kilishi meat processors were married and 20% were single, this implies that most of the respondents were settled family men with enough responsibilities. This finding is in line with the report of Adetunji and Adeyemo (2012), 30% of the kilishi processors are between 31-40 years with an average years of 43years old from findings revealed that the age of the processors is an important factor that affects their level of processing and overall coping ability in meat processing business. Age is also believed to influence the level of physical work and the willingness to take risk. This implies that the age groups of the processors are within the active ages; thus, having high level of productivities. This is because this age group is less risk averse. This work is in line with the work of Abdulraham *et al*. (2015), which show that majority of agricultural processors are younger and can contribute positively to agricultural production for next decade. Majorities of kilishi processors had Arabic, primary, secondary, tertiary and adult form of education with 58.34%, 15.00%, 10.83%, 5.83% and 10.00% respectively. This implies that educational level is a key factor in shaping the perception of processors and it also influences adoption decision of processors (Ishaya *et al.*, 2018). This study shows that kilishi meat processing with formal education has a great ability to adopt new technology and innovation. This is expected to have a positive influence on their level of profitability. According to Oyeleke (1999), educations had a positive and significant impact on farmer's efficiency in production. Adepoju *et al.* **(**2007) also reveals that education enables every individual to gain knowledge and skill and this increases their power of understanding.

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Table1: Distribution of kilishi meat processors according to socio-economic characteristics

Characteristics	Frequency	Percentage
Sex		
Male	120	**100.00**
Marital status		
Single	24	20.00
Married	96	80.00
Age		
21-30	6	5.00
31-40	36	30.00
41-50	28	23.33
51-60	34	28.33
>60	16	15.33
Educational level		
Arabic	70	58.34
Primary	18	15.00
Secondary	13	10.83
Tertiary	7	5.83
Adult education	12	10.00
Household size		
<4	10	8.00
4-6	30	25.00
7-9	32	26.00
10-12	28	23.33
>13	20	16.67
Occupation		
Rearing animal	40	33.33
Farming	60	5.00
Trading	5	4.17
Fishing	15	12.50
Processing experience		
<5 years	50	41.66
6-10	35	29.17
11-16	21	17.50
>20	14	11.67
TOTAL	120	100

Source: Field survey, 2017

Results in Table 1 showed that 26.67% of kilishi meat processors had 7-9 persons as household size with mean household size of 8 persons with a mean processors years of 7years as households expand, there is increased need to get more income through kilishi meat processing so as to meet the needs of the family. Household size is the total number of people living together in a house, feeding from the same pot. It is expected to have a negative influence on efficiency. Okike (2000) confirmed the negative influence of household size on farmer's efficiency. This reveals labour could be sourced easily from such a house hold size to enhance production. Most of the processors involved in other business such as farming, animals rearing, fishing and trading with 50%, 33.33% 12.50% and 4.17% respectively. This implies involvement of the kilishi meat processors in other business added to their input in

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kilishi meat processing business. Business experience could have negative or positive effect on the efficiency of a business. This finding stems from the fact that farmers with more years of experience are older and are therefore less willing to adopt new efficiencies in production. The table also indicates that 41.66% of the respondents had 5 years of experience. These findings indicate that the processors. This implies that appreciable proportion of the processors were quite knowledgeable in kilishi meat processing and management. The number of year of experience of a kilishi meat processing could be an important factor in predicting adoption behaviour. Experience in farming helps farmers to maximize their output through efficient input utilization (Ezeano *et al*., 2017). The findings of Onyenweaku *et al.* (2010) and Ume *et al.* (2012*)* concurred to the assertion. They were of the opinion that farmers through long years of farming experience could be able to set realistic plan aimed at boosting their farm output at minimal costs.

Different types of animals used for Kilishi processing

Table 2 showed that different types of animals are used in kilishi meat processing i.e cattle, sheep meat, Goat and camel meat 66.67%, 16.67% 10.83% and 5.83% respectively for kilishi venture. This suggests that cattle meet are used for kilishi meat processing.

Table 2: Different types of animals used for Kilishi processing

Types of animals	Frequency	Percentage
Cattle	80	66.67
Sheep	20	16.67
Goat	13	10.83
Camel	7	5.83
TOTAL	**120**	**100.00**

Source: Field survey, 2017

Average cost and returns among kilishi meat processors in Kebbi State

Costs and returns of kilishi meat processing is presented in Table 3, Result of total variable cost per individual processor for kilishi meat processing in the study area is ₦45,801.20, while average total fixed cost per processing is ₦3,881.50 and Net farm income per processing is ₦15, 585.85. It can be observed that variable cost dominated the fixed cost processing accounting for as much as 94.58% of the Total cost of kilishi meat processing in the study area, that is ₦45,801.20 as against 5.42% that is 3,881.50 labour and fresh meat as input accounted for 78.47% of the total cost of processing. This implies that kilishi processing in the study area is profitable. The benefit cost ratio also revealed a value of ₦1.35 suggesting that for every ₦1.00 invested 1.35kobo is generated as income. Thus, the business of kilishi meat processing is viable. This work is in line with the work of Ishaya *et al.* (2018)

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Table 3: Profitability of Kilishi Processing in Kebbi State

Variable	Average cost (₦)	Total cost(₦)	Percentage
Revenue	**65,505.56**	**7,860,667.20**	
Variable cost Items			
Cost of labour	7,500.00	900,000.00	15.49
Cost of fresh meat	30,500.00	3,660,00.00	62.98
Cost of fire wood	4,500.00	540.024.00	9.29
Cost of spices	2000.00	240,060.00	4.13
Cost of oil	1300.00	156,060.00	2.69
Total Varible Cost	**45,801.20**	**5,496,144.00**	**94.58**
Fixed cost items			
Basin	300.00	36,000.00	00.62
Bucket	84.50	10,140.00	00.17
Knife	480.20	57,624.00	00.99
Mat	320.00	38,400.00	00.66
Table	685.50	82,260.00	01.41
Wire mash	300.00	36,000.00	00.61
Paper sheet	1225.00	147,000.00	00.02
Poly bag	456.30	54,756.00	00.94
Total fixed cost	3881.50	315,180.00	05.42
Total cost	**49,919.70**	**5,811,324.00**	**100.00**
Profit	**15,585.85**		
Benefit cost ratio	**1.35**		

Source: Field survey, 2017

Distribution of Kilishi processors according to constraints encountered.

The constraints encountered by the processors in order of magnitude of importance include; problem of sunlight during raining season as reported by the processors, fresh meat is expensive, Firewood and difficulty in accessing credit with 70.83%, 68.33%, 47.50% and 27.50% respectively. This implies that the constraints thus creating difficulty in setting in the marketing of the produce and insufficient funds for the business activities are also challenges by the respondents. This makes it difficult for processors to purchase the necessary inputs for processing. Difficulty in accessing credit is a great challenge to the business of kilishi meat processing.

Table 4: Distribution of constraints encountered in Kilishi processing

S/n	Constraints involved	Frequency	Percentage
1	Problem of sunlight during raining season	85	70.83
2	Fresh meat is expensive	82	68.33
3	Fire wood is expensive	57	47.50
4	Difficulty in accessing credit	33	27.50

***Multiple responses were recorded**

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CONCLUSION AND RECOMMENDATION

Based on the findings of this study it can be concluded that Kilishi meat processing in the study area is quite profitable realising a net income of ₦15,585.85 per average processor. In order to enhance the business of kilishi meat processing, the processors should be supported with incentives in the form of credit at a minimum interest rate and without collateral so as to enhance their performance.

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