

FACTORS AFFECTING EGG SUPPLY BUSINESS IN KENYA: A SURVEY OF THIKA WEST DISTRICT

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ABSTRACT

This paper examines factors affecting egg production and distribution business in Thika West district. The district has for the past twenty years ranked among the top producers of eggs in the country. However in the past few years the business has been growing marginally over the past few years. A drop by 30% in production is expected in the year 2013 if proper interventions are not put in place. The purpose of this study was to analyze the factors (cost of input, market structures, poultry diseases and capital) that affect egg supply business with the view of coming up with the recommendations on how to enhance growth of business in Thika west district. The target population in this study was 1014 poultry farmers, 25 feeds manufacturers and 128 wholesalers and middlemen. A sample size of 101 poultry farmers, 25 feeds manufacturing firms and 39 wholesalers and middlemen was selected through simple random sampling. Data was collected using questionnaires. The collected data was analyzed through qualitative and quantitative methods and presented in tables and figures. Based on the results of the findings, the research concludes that the cost of inputs has gone up drastically over the last fifteen years as compared to the price of eggs and this has negatively affected the industry leading reduced supply of eggs at high price in the district. In order to reduce the cost of feeds the government should subsidize the inputs such as fertilizers that are used in the farms to produce the feeds' raw materials such as cornflower, cotton seed cake and wheat pollard.

Key Words: Poultry farmers, Egg supply, Cost of input, Market, Vaccination, Business

1. Introduction

The poultry industry in many parts of the world has been facing many challenges over the past years and these have greatly affected its rate of growth. Many countries in especially in Africa have recorded minimal growth rate in their post colonial eras as a result of combination of social, economic and political challenges. Kekeocha[3]. In Kenya, Thika West district has for many years been ranked as one of the leading producer of eggs in Kenya supplying the product to major towns in Kenya and exporting some to the neighboring countries. Most of the egg producers in the district reside on small pieces of land and one of the most viable farming business options is egg production and distribution. Kariuki[2].

Unfortunately, the business has been growing marginally in the last six years KEPOFA[4]. The factors that have been contributing to the marginal growth need to be analyzed and appropriate strategic management interventions put in place. Kariuki [2] estimated that egg production might fall by 30% in the year 2013 if proper strategies are not put in place. The decline can be attributed to a combination of different factors that includes; high cost of inputs, weak market structures, disease outbreaks, inadequate capital to start and expand the businesses, inadequate trainings for the farmers, poor infrastructure (such as electricity, water, internet connections), weak government policies to regulate the industry as well as poor parent stocks that in turn affect the productivity levels in the farms.

A decline in production is bound to negatively affect many other businesses in the value addition chain such as feeds raw material suppliers, feeds manufacturing firms as well as the confectionery industry that depend on the volumes of eggs produced and can lead to massive unemployment. In order to ensure that production is maintained so as to meet the increasing demand, there is need to analyze the reasons behind this trend and come up with the necessary strategies before the problem gets out of control. The purpose of this study was to analyze the factors that affect egg supply business with the view of coming up with the recommendations on how to enhance growth of business in Thika west district.

2. Literature Review

2.1 Theoretical framework

Poultry production business is an important income generating activity for many African medium and small scale farmers. In Kenya, it contributes to the lives of 21 million Kenyans and 6.1% of the country's GDP. There are approximately 32 million birds in Kenya out of which 76% are free ranging indigenous chicken, 8% are broilers and 14% commercial layers. KEPOFA[4] Commercial layers are mainly kept at the periphery of major cities such as Nairobi due to the ease of procuring inputs and a ready market for the products as well as access to good infrastructure especially roads and electricity. The increase in demand for the eggs can be attributed to two factors: increasing proportion of the middle class households and rising health consciousness among consumers. The product is a cheap source of proteins. The average cost of an egg is ten shillings which is affordable even to the low income earners. The main source of proteins; mainly beef and chicken are out of reach to many Kenyans; a kilogram of meat of either goes for more than three hundred shillings. The industry is positioning itself to play a key role in reducing the level of malnutrition in the country which is a major cause of infant mortality.

It is recognized that the industry has the potential to generate higher incomes to the businessmen and transform living standards of its players if appropriate interventions are developed and relevant strategies put in place. In deed the Kenya Economic Report KIPPRA[5], identifies poultry as one of the lead livestock enterprises that can contribute the most towards the attainment of Millennium Development Goals (MDG's). The industry is therefore posed to play a strategic role in the ongoing socio economic pillar under the vision

2030. In Kenya, poultry farming for egg production had been on the increase in the last ten years. This has been mainly in the rural and the peri-urban areas where many medium and large scale poultry business has flourished mainly as a result of the diminishing land size, high population density and the escalating unemployment levels in the formal sector. However, the industry that had potential for high growth in income has seen slow growth over the past six years. The cost of production was 1.9 billion in the year 2008 compared to 4.3 billion in the year 2011.

2.2 Empirical Literature

The empirical literature covers the four independent variables that include:

2.2.1 Cost of inputs

The cost of inputs determines the size of business that the businessmen are able to set up. When the cost is high, many farming businessmen will either opt to reduce the size of the business or close the business altogether which will result to decreased output. For the poultry business, inputs especially feeds constitute up to 70% of the total costs in many African countries. A big problem in livestock production in Africa is the high cost of feeds ingredients especially grains for intensive production. This high cost has acted as a deterrent to many potential livestock farming businessmen especially those that cannot access credit facilities from banks. It also leads to under-utilization of the available farming lands as farmers only stock small numbers that they can be able to take care of, Ngoupayou[9]. Rural and urban infrastructure is one of several subsets of activities that are essential elements for African rural transformation. The existence of poor quality or inadequate infrastructure will inevitably impact negatively on the competitiveness of African agriculture through increasing internal transport costs, reducing levels of value-additions, as well as lowering transaction efficiencies in the marketing chains. The provision of adequate and cost-effective rural infrastructure will clearly, therefore, underpin the development of agriculture in general and, in particular, facilitate lower-cost production and marketing to enable countries in the region to respond to both national and international market demand.

2.2.2 Markets

The availability of markets and market information will encourage the farmers to produce goods having confidence that there exist ready customers. Any market that is inconsistent will be less attractive to the investors. Farming businessmen will prefer to invest in areas that have adequate information about the present and potential customers as well as safe markets for their products. The presence of cheap imports in the markets will in most cases discourage investors from putting their money in establishing businesses that will eventually have to unfairly compete with them. Investors will prefer to invest in businesses that are free from unfair and un-regulated competition.

The poultry industry also faces the challenge of trade barriers that have been implemented in some countries such as China, India and Russia and India have introduced policies in their respective countries meant to hamper entry of the US poultry products McArdle[7]. In Kenya, the livestock industry suffers from poor organization. There is little if any focus on the government in trying to put up systems that can lead to smooth flow of products from the farmers to the consumers. During dry seasons, the country experiences acute milk shortages. When the country experiences good rains, there is usually an overproduction which in some cases has led to the farming businessmen draining their milk down the drains. In Kenya, egg traders have been illegally crossing the border to Uganda to buy cheaper eggs for reselling in Kenya, earning better returns in the market places, but leaving Kenyan farmers suffering from poor egg sales. This is as result of the lower cost of feeds in Uganda which enables the farmers to sell their eggs at a relatively lower price compared the Kenyan egg producers, Kariuki[2].

2.3.3 Poultry diseases

These remain one of the greatest problems facing the poultry businessmen across Africa where many farmers lack the basic preventive and control mechanisms. They also lack basic trainings on nutrition, knowledge of key animal diseases prevalent in their respective countries and knowledge about disease resistant animal breeds, Portsmouth[11]. Threat of disease outbreaks will result to farming businessmen avoiding particular farming businesses which they consider risky. Many businessmen and investors are averse to risk and will prefer to invest their money where they feel that it will be relatively safe. An outbreak of a given disease will lower the final output due to deaths and low production.

Diseases outbreak is one of the biggest challenges affecting the livestock industry in Africa. The fact that most of the most serious poultry diseases are air-borne and can affect large number of flocks makes this challenge an issue requiring very close monitoring. This problem is compounded by the fact that in many African countries, many insurance firms are yet to develop policies specific to livestock farming especially poultry. Many Kenyan poultry farmers have in the past lost thousands of birds as a result of the outbreak of highly infectious diseases such as New castle and Gumboro, (Kariuki[2].

In Africa, many livestock diseases are usually based on control rather than on elimination and will thus keep on recurring. Recent research in Kenya has indicated that many livestock businessmen spend a big portion of their income treating endemic diseases. The problem has been getting worse as the government does not have enough funds. Also the veterinarians have mobility problems especially when there are disease outbreaks due to poor roads. As a result, the livestock sector has been under-performing in the last twenty, Farrell[1]. In Zambia, the biggest threat in livestock farming business is lack of general preparedness during cases of disease outbreaks. The chances of frequent outbreaks are very high due to the many migratory birds visiting Zambia from other parts of the world as well as increased human traffic. In the year 2005, out of the 20 Million chicks hatched for poultry production, 1.5 million died due to an outbreak of Gumboro disease. The government has put up several task forces such as Avian Influenza task force to alleviate the problems but their success has been low, Kombo[6].

2.2.4 Capital

Availability of capital determines how easy or difficult will it be to start up the business and eventually expand it. Businesses such as poultry farming on large scale are capital intensive. If the farming businessmen do not have access to sources of capital such as loans, the output will be low. Livestock farming especially poultry business is capital intensive. In many African countries, farmers lack access to credit facilities. Many banks do not prefer taking the poultry and the farm structures as collateral and thus end up closing out many would be medium and large scale farmers as a result. Many farmers also lack the basic skills of drafting business plans that they can use in obtaining loan facilities from banks. In Ethiopia, many small and medium scale livestock farmers lack access to credit facilities as many banks are not willing to take poultry and the farming structures as collateral, Farrell[1].

Livestock farming especially poultry business is capital intensive. In many African countries, farmers lack access to credit facilities. Many banks do not prefer taking the poultry and the farm structures as collateral and therefore end up closing out many potential investors in the poultry industry, Randall[12]. Tanzania has extensive tracks of land that lie idle and un-utilized because many potential farmers cannot access credit facilities to set up the farming businesses. The government has been slow in putting up policies that can encourage formation of cooperative movements to facilitate acquisition of cheap loans Neshein[8].

2.2.5: Critique of existing literature relevant to the study

The past studies that have been carried out have put more focus on the large scale poultry business and have failed to address the challenges that are faced by the small and medium businessmen. These group forms a bulk of the population under study in this study. The studies done have also tended to focus more on the developed countries such as Europe and the United States. In Africa, the studies have concentrated on the large economies such as South Africa and Nigeria leaving out countries that are yet to develop their poultry industries such as Kenya. In Africa, free ranging birds make up 76% of the total bird population and form a major source of livelihood to many families especially in the rural areas. Much of the studies that have been done before have capitalized on large scale capital intensive systems leaving out the majority of the poultry businessmen.

3. Methodology

The research adopted a descriptive survey to gather data. Kothari[7], define a descriptive survey as a method of research which gathers data at a particular point in time with the intention of describing the nature of existing conditions of, or determining specific information. The target population in this study was 1014 poultry farmers, 25 feeds manufacturers and 128 wholesalers and middlemen. A sample size of 101 poultry farmers' 25 feeds manufacturing firms and 39 wholesalers and middlemen was selected through simple random sampling. Data was collected using questionnaires. The collected data was analyzed through qualitative and quantitative methods and presented in tables using Statistical package for social scientist. According to Orodho[10], this is the simplest way to present data.

4. Empirical Results and Discussion

4.1 Response rate

A total of 165 questionnaires were distributed to the selected respondents in Thika West District, Kiambu County and the response rate is as shown below:

Table 1: Response Rate

Category	Targeted Sample Size	Response	Response Rate (%)
Farmers	101	75	74
Whole sellers	39	35	90
Manufacturers	25	20	80
Total	165	130	79

Out of the 165 questionnaires distributed, a total of 120 questionnaires were duly filled representing 79% response rate (Table 1). This was an acceptable rate and could be attributed to the fact that the questionnaires were physically administered to the respondents and collected instantly.

4.2: Cost of inputs

The researcher sought to find out the effect of cost of input on poultry business and the results are as shown below.

4.2.1: Change in the cost of inputs

The survey aimed at finding out the change in the cost of inputs over the last fifteen years. The study focused on the poultry feeds which constitute more than 70% of the total costs and the results are as tabulated below:

Table 2: Trend of the cost of feeds over the last 3/5/10/15 years.

Year	Cost of poultry feeds	
	Price (Kshs)	% increment
2013	2500	229
3 years ago	2310	204
5 years ago	1746	130
10 years ago	1063	40
15 years ago	760	-

As shown in table 2, the cost of feeds has risen dramatically over the last fifteen years. It rose by 40% ten years ago, 130% five years ago, 204% three years ago and by 229% in the year 2013. Unfortunately, this has affected poultry business due to high cost of production with very minimal or no profit at all.

4.2.2: Effect of cost of inputs on imports of eggs

The respondents were asked if the cost of inputs encourages imports of eggs from other countries.

Table 3: Effect of cost of inputs on eggs imports

Effect on imports	Frequency	Percent
Encourages imports	59	91
Doesn't encourage imports	6	9
Total	65	100

As the results in table 3 shows, 91% of the interviewees responded that the cost encourages the imports of eggs especially from Egypt and South Africa where the cost of production is too low compared to Kenya.

4.2.3: Effect of cost of inputs on supply of eggs in the market

The survey sought to know if the supply of eggs in the market is affected by the cost of inputs.

Table 4: Effect of cost of inputs on supply of products in the market: per age category (% in brackets)

	Age (in years)				Total
	20-30	31-40	41-50	51-65	
Supply reduced	4 (80)	30 (88)	21 (95)	3 (75)	58 ((89)
Supply increased	0 (0)	2 (6)	0 (0)	0 (0)	2 (3)
Supply not affected	1 (20)	2 (6)	1 (5)	1 (25)	5 (8)
Total	5 (100)	34 (100)	22 (100)	4 (100)	65 (100)

As shown in table 4, 80% and above of the respondents aged between 20-50 years responded that the supply of eggs in the market is reduced by the cost of inputs. 75% of the respondents aged 51-65 years said that the supply is reduced as a result of the cost of inputs. This implies that high cost of production reduces supply of eggs in the market.

Table 5: Effect of cost of inputs on supply of products in the market: per education category (% in brackets)

	Highest level of education					Total
	KCSE below	& Bachelor's degree	College Diploma	College certificate	Post graduate degree	
Supply reduced	20 (90)	9 (90)	14 (88)	12 (86)	3 (100)	58 (89)
Supply increased	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Supply not affected	2 (10)	1 (10)	2 (12)	2 (14)	0 (0)	7 (11)
Total	22 (100)	10 (100)	16 (100)	14 (100)	3 (100)	65 (100)

As per table 5, 89% and above of the respondents across the different education levels responded that the supply of eggs in the markets is reduced by the cost of inputs while 11% said that the costs is not affected.

4.2.4 Effect of cost of input on the prices of eggs

The respondents were asked about the effects of the cost of inputs in the market in regard to the prices of eggs and the results are as shown in the table below.

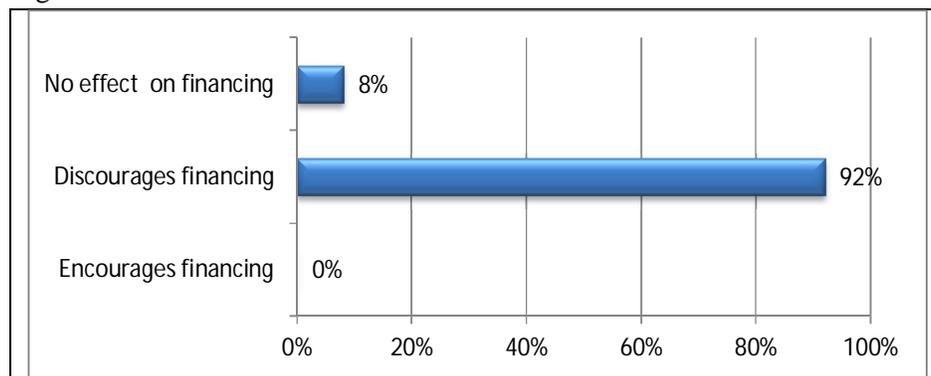
Table 6: Effect of cost of input on the prices of eggs

Effect on price	Frequency	Percent
Prices increased	60	92
Prices decreased	0	0
Price not affected	5	8
Total	65	100

As table 6 shows, out of all the respondents interviewed, 92% responded that the cost of inputs leads to an increase in the prices while 8% responded that the prices are not affected.

4.2.5 Effect of cost of input on the business financing

The survey sought to establish the effects of the cost of inputs on the business financing and the results are as shown in the figure below.

**Figure 1: Effect of cost of input on business financing**

As is evident in figure 1, 92% of the interviewees gave the response that the cost of inputs discourages potential financiers with 8% said that it had no effect on the financiers. None of the interviewees gave the feedback that financing is encouraged as shown above.

4.3: Market structures

4.3.1 Price of eggs versus cost of feeds:

The research analyzed the rate of increment in the prices of eggs and the results are as given in the table 7.

Table 7: Price of eggs and feeds over the last 3/5/10/15 years.

Year	Price per tray of eggs		Cost of poultry feeds	
	Price (Ksh)	% increment	Price (Ksh)	% increment
2013	265	194	2500	229
3 years ago	230	156	2310	204
5 years ago	200	122	1746	130
10 years ago	150	64	1063	40
15 years ago	90	-	760	-

Taking year 1998 as the base year, the results show that the cost of eggs and feeds had increased by 64% and 40% respectively over the last ten years, by 122% and 130% respectively over the last five years. Over the last three years, prices of eggs and feeds had increased by 156% and 204% respectively by 194% and 229% respectively in the year 2013. As per the results in table 5.9, the cost of feeds has been increasing at a higher rate than that of the eggs meaning reduced profit margins for the farmers. The results in table 9 show that the rate of feeds increment has been higher compared to the price of eggs over the fifteen year period.

4.3.2: Existence of a ready market for the eggs:

The study attempted to find different aspects for the egg supply market conditions and the results are as provided in table 8.

Table 8: Existence of a ready market for the eggs: per age category (% in brackets)

	Age (In years)				Total
	20-30	31-40	41-50	51-65	
Strongly disagree	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Disagree	0 (0)	1 (3)	2 (8)	0 (0)	3 (5)
Neutral	1 (15)	3 (8)	1 (7)	1 (25)	6 (8)
Agree	1 (15)	16 (48)	10 (44)	2 (50)	29 (44)
Strongly agree	3 (70)	14 (41)	9 (41)	1 (25)	27 (43)
Total	5 (100)	34 (100)	22 (100)	4 (100)	65 (100)

As shown in table 8, 85% and above of the respondents in the age bracket 20-50 years, agreed (agreed, strongly agreed) that a ready market is available for eggs while 75% of the ones in the age bracket 51-65 agreed that a ready market is available. This implies that the younger farmers are more aggressive in looking for the markets as compared to the older ones.

Table 9: Existence of a ready market for the eggs: per education category (% in brackets)

	Highest level of education					Total
	KCSE below	& Bachelor's degree	College Diploma	College certificate	Post graduate degree	
Strongly disagree	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Disagree	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	1 (2)
Neutral	0 (0)	1 (10)	3 (18)	0 (0)	0 (0)	4 (6)
Agree	5 (23)	4 (40)	7 (45)	4 (28)	1 (33)	21 (32)
Strongly agree	17 (77)	4 (40)	6 (37)	10 (72)	2 (67)	39 (60)
Total	22 (100)	10 (100)	16 (100)	14 (100)	3 (100)	65 (100)

As is evident in table 9, 80% and above of the respondents in the different education levels agreed (agreed, strongly agreed) that a ready market is available for eggs. This implies that a ready market is available for businessmen irrespective of their education levels.

4.3.3 Effect of imports of eggs on the local market

The respondents were asked whether imported eggs had any effect on the local market. The results from the survey in regard to the imports are as shown in the table below:

Table 10: Effects of poultry imports on the local market

Imports affect local market	Frequency	Percent
Strongly disagree	2	3
Disagree	2	3
Agreed	12	18
Strongly agreed	49	76
Total	65	100

As table 10 shows, 94% of the respondents agreed (agreed, strongly agreed) that imported eggs affect the local market while 6% of the respondents disagreed (disagreed, strongly disagreed) that local market was not affected.

4.3.4: Trade restrictions affecting the business

The study attempted to find out the existence of trade restrictions which can affect the business leading to low trade of eggs.

Table 11: Trade restrictions effect on business

Trade restrictions affect business	Frequency	Percent
Strongly agreed	25	38
Agreed	27	42
Strongly disagreed	7	11
Disagreed	6	9
Total	65	100

Out of all the respondents, 80% agreed (Strongly agreed, agreed) that trade restrictions have been put in place that affects the trade of eggs in the district. 20% of the respondents responded that there were no trade restrictions in place that could affect the eggs business. (Strongly disagreed and disagreed as shown in table 11).

4.4 Poultry diseases

This section provides results and discussions of the effect of poultry diseases on egg supply in Thika West District of Kiambu County.

4.4.1 Most prevalent diseases and losses incurred

In this survey, the respondents were asked to outline the most prevalent poultry diseases that had affected their businesses. The most prevalent diseases in the district were outlined as:

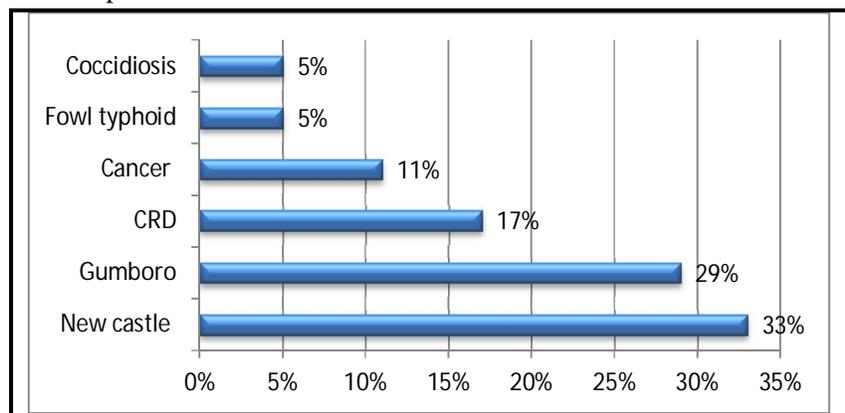


Figure 2: Most prevalent diseases

The results in figure 2 indicate that New castle and Gumboro are the most prevalent diseases at 33% and 29% respectively out of all the cases cited. Chronic respiratory disease (CRD) was at 17%, Cancer at 11%, fowl typhoid (5%) and coccidiosis at 5%. The research findings are in tandem with that of McArdle[7] that New Castle and Gumboro diseases cause high mortality rates in many farms in Africa.

4.4.2 Effects of poultry diseases on egg supply business

The respondents were asked whether poultry diseases hindered egg supply business.

Table 12: Poultry disease hinder egg supply business

Training	Frequency	Percent
Disagree	0	0
Neutral	4	7
Agree	22	33
Strongly agree	39	60
Total	65	100

As table 12 shows, 93% and above of the total respondents agreed (agreed, strongly agreed) that poultry diseases hinder production (egg volumes) on poultry business.

Table 13: Poultry disease hinder egg supply business: per age category (% in brackets)

	Age (in years)				Total
	20-30	31-40	41-50	51-65	
Disagree	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Neutral	0 (0)	2 (5)	1 (5)	0 (0)	3 (5)
Agree	2 (40)	12 (35)	6 (27)	1 (25)	21 (32)
Strongly agree	3 (60)	20 (60)	15 (68)	3 (75)	41 (63)
Total	5 (100)	34 (100)	22 (100)	4 (100)	65 (100)

As table 13 shows, 95% and above of the respondents across the different age brackets agreed (agreed, strongly agreed) that poultry diseases hinder production on poultry business (eggs volumes)

Table 14: Poultry disease hinder egg supply business: per education category

(% in brackets)

	Highest level of education					Total
	KCSE below	& Bachelor's degree	College Diploma	College certificate	Post graduate degree	
Disagree	1 (5)	0 (0)	0 (0)	0 (0)	0 (0)	1 (1)
Neutral	1 (5)	1 (10)	1 (8)	0 (0)	0 (0)	3 (5)
Agree	6 (26)	2 (20)	4 (24)	1 (7)	1 (33)	13 (20)
Strongly agree	14 (64)	7 (70)	11 (68)	13 (93)	2 (67)	48 (74)
Total	22 (100)	10 (100)	16 (100)	14 (100)	3 (100)	65 (100)

As is evident in table 14, 90% and above of the respondents in the different levels of education agreed (agreed, strongly agreed) that poultry diseases hinder the volumes of eggs produced in the poultry business.

4.5 Capital

This section provides results and discussions of effect of capital availability on eggs supply in Thika West District of Kiambu County.

4.5.1: Source of capital for poultry business

In this survey, the respondents were asked to indicate the sources of the capital that they used to start and expand their businesses and the results are as shown in the table 15.

Table 15: Source of capital

Source	Farmers		Middlemen	
	Frequency	Percent	Frequency	Percent
Loans	42	65	20	57
Savings	20	30	12	34
Salaries	3	5	3	9
Totals	65	100	35	100

For the farmer respondents, loans were given as sources by 65% of the total respondents, savings by 20%, while salaries formed a source of capitals for 5% of the total respondents. For the middlemen/whole sellers, loans formed 57% of the total loan sources; savings formed 34% while salaries formed 9% of the total sources (Table 15).

4.5.2: Availability of capital for starting business

The researched sought to find out how readily available was capital needed to start poultry business and findings are provided in the table 16.

Table 16: Capital for poultry business is readily available: per age Category

(% in brackets)

	Age (in years)				Total
	20-30	31-40	41-50	51-65	
Readily available	1 (20)	7 (22)	9 (40)	2 (50)	19 (29)
Not readily available	4 (80)	27 (78)	13 (60)	2 (50)	46 (71)
Total	5 (100)	34 (100)	22 (100)	4 (100)	65 (100)

In regard to capital availability, 80% of the respondents aged 20-30 years, 78% of those aged 31-40 years, 60% of those aged 41-50 years and 50% of the ones aged 51-65 years responded that capital for poultry business is not readily available (Table 16).

Table 17: Capital for poultry business is readily available: per education category

(% in brackets)

	Highest level of education					Total
	KCSE below	& Bachelor's degree	College Diploma	College certificate	Post graduate degree	
Readily available	2 (10)	3 (30)	4 (23)	2 (18)	2 (67)	13 (20)
Not readily available	20 (90)	7 (70)	12 (77)	12 (82)	1 (33)	52 (80)
Total	22 (100)	10 (100)	16 (100)	14 (100)	3 (100)	65 (100)

In regard to the levels of education, 90% of farmers with KCSE certificate and below, 82% with college certificates, 77% with college diplomas, 70% with university degrees and 33% with post graduate degree gave the response that capital is not readily available (table 17).

4.5.3 Funding of the business by the government

The survey sought to determine whether the government funds poultry farming through enterprise development funds.

Table 18: Funding of the business by the government

Status	Farmers		Middlemen	
	Frequency	Percent	Frequency	Percent
Agree	6	9	4	12
Neutral	4	6	3	8
Disagree	55	85	28	80
Total	65	100	35	100

Of all the farmers and middlemen respondents interviewed, 85% and 80% respectively did not agree with the opinion that the government funds poultry farming. Of the same respondents, 9% and 12% agreed respectively agreed with the opinion that the government funds the enterprise. 6% and 8% respectively of the respondents gave a neutral response as shown in table 18. This confirms earlier research by Neshein[8] that most governments in Africa have been slow in putting up policies that can encourage formation of cooperative unions or supporting the farmers through enterprise funds.

4.5.4: Training on entrepreneurial skills

Respondents were asked if they had received training on entrepreneurial and financial skills so as to be equipped with the right skills to manage their businesses.

Table 19: Training on entrepreneurial and finance skills

Attained	Farmers		Middlemen	
	Frequency	Percent	Frequency	Percent
Yes	10	15	7	20
No	55	85	28	80
Total	65	100	35	100

Of all the respondents involved in the farming and distribution business, 85% and 80% respectively responded that they had not received any training in regard to entrepreneurial and financial skills. 15% and 20% respectively of the respondents had received some level of training as shown in table 19.

4.6 Future projections of the egg supply business

The respondents were asked to give their projections in regard to the future of the business in Thika West district:

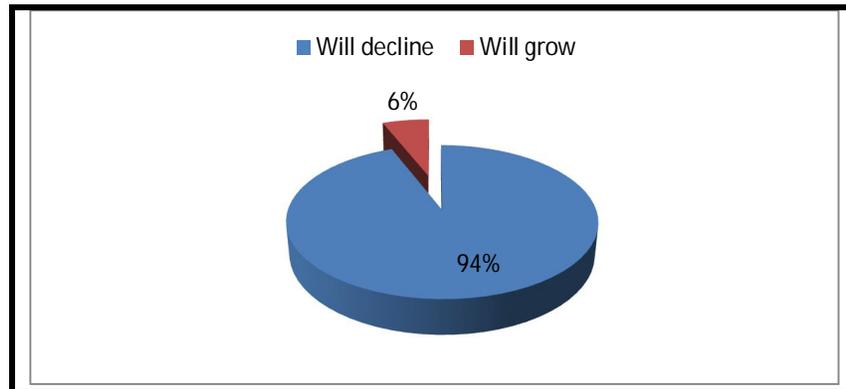


Figure 3: Future trend in the egg supply business

As is evident from figure 3, 94% of the respondents were of the opinion that the business is bound to decline in future unless some urgent steps are taken to reverse the trend. Only 6% of the population had the opinion that the business might grow in future.

6.0 Conclusion and Recommendations

6.1 Conclusion

The survey aimed at evaluating the key factors that have an impact on the eggs output and productivity levels as well as distribution in the district. It was guided by the following objectives; to analyze the effects of key inputs' costs such as feeds on the egg supply business as well as analyze the effects of the prevailing market structures on the business. The study also sought to analyze the effects of poultry diseases on egg supply business in the district as well as the effects of capital availability on the output in the district.

The cost of inputs has gone up drastically over the last fifteen years as compared to the price of eggs and this has negatively affected the industry leading reduced supply of eggs in the district. The increase in the cost of inputs has resulted to an increase in the price of eggs though at a lower rate than that of the cost of feeds. The cost of input has also affected business financing with many banks being not willing to finance business start ups and expansions due to limited cash flows as result of diminishing profit margins which consequently affects the rate of egg supply in the district. In a bid to avoid the high cost of inputs, some few businessmen prefer to take short cuts and thus import eggs at cheaper prices which in turn affect the supply of eggs in the market.

In regard to the market structure, the survey found that most of the farmers sell their eggs to the middlemen as they operate individually; a situation that is taken advantage of by the intermediaries. A ready market is available for the products and therefore the producers do not have to incur extra expenses searching for the markets. The eggs imports from other countries have negatively affected the market in the district. Trade restrictions that are imposed by some of the neighboring countries have also impacted negatively on the egg business in the district.

In regard to poultry diseases, the most prevalent are; New castle, Gumboro and CRD and Cancer. In Thika West district, most of the farmers have not been trained on disease prevention and control measures and this therefore leads to poor disease prevention and control methods consequently affecting the egg supply in the district. During disease outbreaks, the government through the ministry of livestock does not update the rest of the un-affected farmers so as to take the necessary preventive measures. Vaccination in most farms is

done by trained veterinary doctors. Most of the respondents believe that poultry diseases hinder egg supply in the district.

In Thika district, most businessmen dealing in egg business get their capital from loans and savings. The capital for starting the business is not easily available and the government does not fund the egg supply business through the enterprise funds. Majority of the farmers also lack the necessary entrepreneurial and finance skills necessary to run their businesses in a professional manner. These factors are bound to negatively affect the egg supply in the district.

6.2 Recommendations

On the basis of this survey, the following recommendations are made;

In order to reduce on the cost of inputs, egg producers should aim at forming cooperative unions so as to have strong bargaining powers. The cooperative unions can also start manufacturing feeds for the member farmers so as to reduce on this key cost driver. In order to reduce the cost of feeds the government should subsidize the inputs such as fertilizers that are used in the farms to produce the feeds' raw materials such as cornflower, cotton seed cake and wheat pollard. This will discourage the feeds manufacturers from importing key raw materials from the neighboring countries leading to high cost of feeds.

In regard to the markets, the farmers can use the formed cooperative union to market their products. This will enable them to do away with the middlemen who buy the products at a low price and then resell at higher prices. While in the cooperatives unions, the egg producers can also add value to the products by setting up confectionery businesses in major towns. In order to improve the local market, the government should put in place strict restrictions to curb the import of eggs that flood the Kenyan market especially during the annual trade fairs and as a result end up disrupting the prevailing market environment. The government should also ensure that the East African Community market works efficiently so as to enable export of eggs to the neighboring countries through removal of the trade barriers imposed by some neighboring countries.

As pertains to capital, the government through the ministry of finance should also follow up on the local markets to ensure that they are giving loans at reasonable interest rates that are in tandem with the base rates that have been set by central bank. The government should also encourage formation of SACCO movements to encourage savings by the farmers. Many businessmen cannot access the credit facilities as a result of the current exorbitant interest rates. The government should organize trainings for the farmers where they will be trained on entrepreneurial and financial skills.

In regard to diseases, the government through the ministry of livestock should also be quick to update the farmers when there are disease outbreaks to avoid the losses that occur as a result of resultant low production as well eventual deaths of the birds. The farmers should also be trained on disease prevention and control methods by the ministry of Agriculture. The government should also vet the producers of one day old chicks as some of the diseases especially cancer might be originating from the parent stocks.

7.0 Suggestions for further research

The factors that determine egg supply may vary from district to district. Therefore, another survey can be commissioned to determine these factors in other districts such as Murang'a and Nakuru counties which have a big poultry farming businesses. Further studies should also be done to determine other factors that can affect the business in the district apart from the ones that the researcher narrowed down to in this research. A more detailed research should be commissioned carried to find out why the cost of feeds has shot dramatically over the fifteen year period and give recommendations that can be used to reverse the trend.

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