

**FACTORS INFLUENCING IMPLEMENTATION OF POULTRY FARMING
ENTERPRISES FOR ECONOMIC EMPOWERMENT OF LOCAL COMMUNITIES IN
MOMBASA COUNTY, KENYA**

BY

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**A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULFILMENT OF
THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF ARTS
IN PROJECT PLANNING AND MANAGEMENT OF THE UNIVERSITY OF NAIROBI**

2014

DECLARATION

I declare that this research project report is my original work and that it has not been presented for a degree or diploma award in any other university.

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L50/60323/2013

This research project report has been submitted for examination with my approval as the university supervisor

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DEDICATION

This research project is dedicated to my mum Elizabeth Wanjiru, my dear wife Caroline Katanu and my son Jackson Kinuthia for they have been a source of encouragement and motivation in enabling me to do my best in life.

ACKNOWLEDGEMENT

I would like to express my very great appreciation to my supervisor Mr Johnbosco Kisimbii for his valuable and constructive suggestions during planning and development of this research work. His patient guidance, enthusiastic encouragement and useful critique were worthwhile.

I wish to acknowledge all lecturers in the department of Extra-mural studies who provided me with the very valuable knowledge during course work as well as during my research work.

I would also like to thank all the non-teaching staff for they were of value during this research work for they all contributed in different dimensions to ensure smooth learning and completion of this study.

I highly congratulate all my classmates for encouragement, support and rapport throughout this study.

I would also like to thank all my family members for encouragement and support throughout the study.

All respondents, enumerators and interviewees are highly congratulated for their contribution during this research work.

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LIST OF ABBREVIATIONS AND ACRONYMS

AU	African Union
EPR	Enterprise resource planning
FAO	Food and Agricultural Organization
FCR	Feed conversion Rate
GDD	Gross Domestic Product
ICIPE	International Centre of Insect Physiology and Ecology
ICIPAD	Igad centre for Pastoral Areas and Livestock Development
ICT	Information Communication Technology
IFAD	International Fund for Agricultural Development
IGAD	Intergovernmental Authority on Development
ILRI	International Livestock Research Institute
JKUA	Jomo Kenyatta University of Agriculture and Technology
KACE	Kenya Agricultural commodity Exchange Limited.
KARI	Kenya Agricultural Research Institute.
KES	Kenya Shilling
KIPPRA	Kenya Institute of Public Policy Research and Analysis
MDG	Millennium Development Goal
NGO	Nongovernmental organizations
PCs	pieces
SMS	Short Message Services
SOPs	Standard Operating Procedures
USA	United States of America
VAT	Value Added Tax

ABSTRACT

The study sought to ascertain factors influencing implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County Kenya. The objectives of the study were to establish whether technological skills influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County, to establish whether marketing factors influence implementation of poultry farming enterprises for economic empowerment local communities in Mombasa County, to establish whether production costs influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County and finally to establish how land and infrastructure influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County. The target population of study comprised of 588 poultry farmers and 41 livestock officers. The study focused more on commercial poultry farmers who keep chicken for either eggs (layers) or meat Broilers .The researcher selected a sample of 70 farmers and 10 livestock officers. A descriptive survey method was used in this study due to its reliability and ability to produce statistical information that could be analyzed. Data was collected from commercial poultry farmers and livestock officers while interview was done to key informants in the poultry sector. A pilot study was conducted using pre-test method to test the viability and reliability of questionnaires administered. The hypothesis were tested to determine the relationship between independent and dependent variables using Pearson chi-square at 95% level of confidence .The relationship between technology and skills, marketing factors, production costs, land and infrastructure and implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa county was tested. The significant findings of this study showed that technological skills, marketing factors, production costs and land& infrastructure influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County, Kenya. The researcher recommended that, Poultry farming entrepreneurs should be empowered technologically and linked with research institutes in order to improve their productivity, thorough analysis of poultry value chain to encourage value addition and enhance access to market, utilization of locally available raw materials to manufacture poultry feeds, formation of poultry farmers organizations in order to access market and inputs at suitable prices and creation of enabling environment which may include availability of credit facilities, improvement of land ownership improvement of infrastructures and affordable energy to favor small and medium entrepreneurs.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The world chicken population is approximately 19.5 billion with production of 1.1 trillion eggs and 86 million Tonnes of meat annually. The America and Asia continents are the leading producers of poultry meat with 43 and 37.4 million tones respectively. The Europe continent is the leading in average per capita egg consumption at 12.7 followed by America at 11.4 while Africa stand at 2.3 kg/capita/year (FAO'2012).The global demand for poultry products is expected to raise due to global population increase especially in developing economies, improved disposable incomes and consumer taste preferences. In Africa, South Africa is the leading producer of poultry products with two of its large poultry farming entrepreneurs producing over 50% of total production. South Africa has over 48.6 million consumers of poultry products with per capita consumption of 32.96 kg/year per. It is important to note that South Africa is a net importer of poultry products and this opportunity is attributed to economic recovery, high level of disposable income, and redistribution of wealth. Kenya has an estimated 28 million birds out of which 76 per cent consist of free-ranging indigenous chicken, while 22 per cent are commercial layers and broilers. Other poultry species like duck, turkey, pigeon, ostrich, guinea fowl and quail make up 2.2 per cent and are becoming increasingly important. Annually, the country produces about 20 Tonnes of poultry meat worth KES 3.5 billion and 1.3 billion eggs worth KES 9.7 billion(Gok, 2010)

There are several management practices in a poultry farming enterprise such as correct breeding, feeding, veterinary and rearing practices from day old to market, eggs size and quality, feed conversion rate mortality rate among others which are the key technical performance Indicators. Feeding costs are the critical components of controlling and lowering production costs and improved feed conversion, pelletization, automated feeding, improved feed purchasing and logistics as some of interventions to reduce costs of feeds. Improved use of technology and management practices essential in lowering average costs of production (Rhodes *et al*, 2011)

Poultry farming is one of the lead livestock enterprises that can contribute the most towards the attainment of Millennium development Goal 1(MDG 1). The industry is therefore posed to play a strategic role in the ongoing socio economic under the Vision 2030.The poultry industry was quoted as the leading employment contributor among the livestock sectors. (GOK, 2009).

One of the ultimate goals of the Kenyan government is to reduce poverty and fight inequality which is at Gini 47 (GOK, 2013). Livestock products such as meat and meat products, milk and milk products, and eggs roles in ensuring food security, enriched livelihood and economic development in Kenya is curtailed by low budgetary allocation for the expansion of livestock development sub-sector. The last comprehensive national survey of the Micro and Small Enterprise sector in Kenya was undertaken in 1999 making relevant statistics a challenge and informality in developing the sector. Recent studies have shown that livestock's contribution to Kenyan agricultural gross domestic product (GDP) was more than two and a half

times larger than the official estimate for 2009, the most recent year for which there was complete data(GOK,2013)

1.2 Statement of the problem

Poultry production and product consumption are progressively growing in the world. Poultry account for 33% of global meat consumption and is expected to grow at 2-3% per year in the world (Mengesha, 2013).This global growth in poultry industry is fueled by growing population, urbanization, income growth, growing middle class and increased awareness about health benefits (Sridharan and saravanana, 2013), Several studies have shown that poultry farming enterprises plays a major role in poverty alleviation, food security, off farm employment, income generation. Thus poultry production contributes to many livelihood indicators such as income, nutritional food, security, savings, and insurance against shocks such as sickness, crop failure, drought and emergencies.

In developed countries such as USA, France and Austria, there is close relationship between producer and processor with use of production contracts and vertical integration and this model has proved to be very practical in risk management, reduction of production cost and profit maximization. In Kenya such models are not fully exploited and only kiambu and Nakuru counties have a form of contractual arrangements with Kenchick and Kim's poultry care centre. Contract farming has a positive and significant effect on net revenue with a recorded increment of about 27% in revenue compared with non contract farmers. This can be tapped to improve welfare of farmers, reducing community poverty (Wainaina,Okello and Nzuma,2012).

High costs of poultry feeds affect competitiveness of Kenya's livestock industry at the international arena. Poultry enterprise depend on concentrates feeds which are derived from cereals and oil seedcakes such as cotton, sunflower and soybeans. Erratic weather conditions and competition from human for food needs negatively affects the cost of animal feeds. In Kenya there is perennial shortage of animal feeds ingredients which is coupled with human food shortage with end result of importation of raw materials for commercial feeds manufacturing. Kenya has reported importation of cheaper poultry products. Poultry feeds sector has not sufficiently utilized its large resources of non-convectional agro forestry trees due to lack of information of their nutritive value and level of inclusion in poultry feeds. These natural resources can supplement in the manufacture of poultry feeds and can significantly lower the cost of poultry feeds therefore impacting positively on the economic status of poultry entrepreneurs, save the country the foreign exchange spent on importing agro industrial products for manufacturing poultry feeds and increase export earning , increase returns to households, increased economic empowerment and income diversification of communities(Kingori,Odero-waitituh and Guliye,2011).

Kenyan poultry marketing are undefined and variable. Most farmers lack market information and farm gate selling of unprocessed poultry products with no value addition hence denying poultry entrepreneurs better profits. Studies have shown that poultry producers do not sufficiently control the market prices on offer. There is low volume of products, lack of marketing groups capable of linking producers to better markets. Formation of such groups can further facilitate dissemination of other poultry

farming technologies, training, technological adoption, improvement of products standards and quality and better prices.

1.3 Purpose of the study

The purpose of the study was to examine the factors influencing implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County.

1.4 Objectives of the Study

The study was guided by the following objectives:

- i) To establish whether technological skills influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County.
- ii) To establish whether marketing factors influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County.
- iii) To establish whether production costs influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County.
- iv) To establish how land and infrastructure influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County.

1.5 Research Questions

The study also sought to answer the following research questions:

- i) How do technological skills influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County?
- ii) How do marketing factors influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County?
- iii) How do production costs influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County?
- iv) How do land and infrastructure influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County?

1.6 Research Hypothesis

The study tested the hypothesis to find out if there was any relationship between technological skills, marketing factors, production factors, land and infrastructure and implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County. The hypothesis was tested to find out any relationship as follows,

- i. H₁: There is a relationship between technological skills and implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County.
- ii. H₁: There is a relationship between marketing factors and implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County.

- iii. H₁: There is a relationship between production costs and implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County.
- iv. H₁: There is a relationship between land and infrastructure and implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County.

1.7 Significance of the study

The research will be beneficial to farmers by enlightening them on barriers to growth of poultry enterprises in Mombasa County. Secondly, the study will be of value to government in terms of planning, prioritizing its strategies and making policies on poultry production with ultimate aim of food security and poverty eradication. The study will also contribute to the existing body of knowledge and form the basis for further research in areas with similar characteristics. The extension and other livestock officers will find this research important in service delivery to poultry farmers.

1.8 Basic Assumption of the study

The study assume that technological skills, marketing factors, production costs, land and infrastructure factors influence implementation of poultry farming enterprises in Mombasa county. The researcher also assumes that the selected sample of 70 commercial poultry farmers and 10 livestock officers have knowledge on poultry enterprises in Mombasa County and they provided acceptable coverage of area under the study. Honest respondents, compliance of the participants to answer the

questionnaires and availability of targeted officers for interviews are other basic assumption.

1.9 Limitation of the study

The researcher expected several limitations during this research work. Lack of local literature on commercial poultry farming was one of such limitations and he reviewed literature from all over the world. Other limitations included limited financial resources and time since the researcher is a full time employee.

1.10 Delimitation of the study

To ensure quality, the researcher tried as much as possible to ensure quality control measures were in place. The data collection tools were carefully designed to capture all research questions and objectives. The study also integrated ethical considerations by employing informed consent of the respondents. The sampling of respondents involved all knowledgeable stakeholders in poultry farming in order to improve on quality of the research. The research specifically covered Mombasa County since in has been listed as an urban and peri- urban areas where commercial poultry farming is concentrated.

1.11 Definition of significant terms used in the study

Implementation: is the realization of an application, or execution of a plan, idea, model, design, specification, standard or policy.

Poultry farming: This is keeping birds for meat and eggs purposes.

Economic empowerment: refers to increasing strength of earning and spending money in a society.

Technology: this is knowledge of new techniques in order to solve problems and improve solutions in order to achieve specified goals.

Training: this is gaining of knowledge, skills and competencies as a result of the teaching of practical skills and knowledge that relate to specific useful competencies.

Adoption: this is taking up new production methods and techniques.

Information communication technology use: means use of technologies including cell phone and Internet services, radio, and a wide range of digital devices and related tools including cameras, GIS, and a wide range of hand-held computing devices.

Value addition: the increase in worth of a product or service because of a particular activity. Factors which constitute the additional values are features, quality, customers perception (or image) and exclusiveness. Value addition is done to increase satisfaction from consuming a product. This can be in form of time, form and place satisfaction.

Marketing groups: these are farmers organizations aimed at enhancing smallholder's access to fair, profitable and sustainable markets.

Contract farming: is defined as an agreement between farmers and processing and/or marketing firms for the production and supply of agricultural products under forward agreements, frequently at predetermined prices.

1.12 Organization of the study

Chapter one presents the background of the study where objectives, the problem, the purpose of the study are outlined. The research questions, research hypothesis, basic assumptions and the significance of the study are stated. The chapter also addresses the limitations and delimitation of the study. The second chapter outline the literature reviewed in relation to aspects influencing implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa county as outlined in the research objectives .These factors include technological skills, production costs, marketing factors and land and skills .Chapter three explain the research design employed, target population, sample size and, data collection instrument, data collection and analysis, ethical considerations and operational. Chapter four presents data analysis, presentation and interpretation while chapter five contains summary of findings, discussions, conclusion and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature review carried out for the study topic. The review covers the areas of poultry farming enterprises which influences on productivity, sustainability and profitability of poultry farming. The chapter focuses on practices and factors considered to be influencing implementation of poultry farming enterprises with positive impact to the small scale poultry producers.

2.2 Technological skills in implementation of poultry enterprises

Utilization of technology and skills is a prerequisite for developing countries. Technology and skills are applied in all aspects of poultry production all the way from managing day old chicks to marketing of poultry farming products such as poultry meat and eggs. Several studies have shown that utilization of skills and technology is directly related to increased productivity, higher incomes and profitability of poultry enterprises (Ezeibe,Orkarji and Abudai, 2014).

Ibitoye and Onimisi, (2013) demonstrated that training of poultry farmers is a significant correlate of productivity, income level and food security and strongly recommended that farmers should be regularly trained by extension agents. The researchers also recommended incentives driven government organized seminars, conferences and workshops for poultry farmers to participate.

Training role in improving management skills of poultry entrepreneurs is considered as an important task in public extension services. This enables poultry farming entrepreneurs to take better and informative decisions to acquire skills in analyzing their decisions, evaluating of marketing, identifying of the trade opportunities and scheduling quality and quantities of products towards the satisfaction of target market in intensive trade market .Technical skills such as poultry density, water management system, feeding management system, feed formulation, insurance and risk management, poultry farm activities ,farm management skills and more important Biosecurity and biosafety measures can only be acquired through training which can be either short term or long term training (Mohamad ,Mohammad Fathulah , 2011)

Weak management of production factors and economic inefficiency of production enterprises is one of the agricultural problems. Incorrect using of knowledge is related to low level of information and technical skills of entrepreneurs. Paying attention to farm management and recognition of its restricting factors and providing suitable executive ways will be a good way to change in production of agricultural products and ideal use of production factors .Poultry farms operators need management skills to take correct decisions. These skills enable them to manage their enterprises effectively facing with the changes in agribusiness environment and remain in the high competition of trade environment. Training influences all aspects of production and rained producers are able to market their products in better ways as some trainings target marketing skills. Ideal and effective communication is required by managers to enable them communicate with other managers, gain ability to transfer the experiences and knowledge to new people working in poultry production enterprises,

ability to consider others opinions and perspectives in management, ability to create good and positive relationship with buyers and sellers as consumer oriented enterprise. Enhanced communication skill of the extension agents and farmers are accompanied by increased output.

Benefits of training poultry producers are of large scope and these include increase in flock size, increase in eggs and meat production per bird, higher number of eggs per capita per year, improved hatchability of eggs, decreased mortalities per flock, improved disease management practices, improved animal manure management. This has impact on per capita egg availability, per capita egg consumption, increased income, food security and health and productive nation. (Abida,Khan,Rhasid and Aurangzeb,2013)

Kenya has several research institutions mandated to do research of different aspects of Agriculture. Some of notable institutes with direct link to poultry enterprises are KARI, ILRI, ICIPE, University of Nairobi, KJUAT, Egerton University among many others.

Udoh (2010) demonstrated that the poultry production is highly dependent on knowledge and adoption of improved technology and for sustainability and growth as well as a technical input it must be availed. Adoption of new technology leads to increased production, more profits, and this also attracts more farmers to adopt the technology. For technology to be adopted it has to go through awareness, assessment, acceptance ,learning and usage stages .Higher productivity has led to higher incomes for producers making agricultural enterprises worthwhile economic endeavors. This

has the potential of attracting more unemployed people especially the youth into farming enterprises leading to higher incomes, improved food security and sustainable economic development. Adoption of appropriate technology by poultry producers rather than invention of new technology is the key to improved productivity in Kenya (Ng'ang'a, Kiumbe and kabethi, 2013)

The use of new poultry farming technology determines how the increase in poultry enterprise output impacts on poverty levels and environmental degradation. Returns from new technology development and adoption could be far reaching. There are several factors affecting technology adoption such as assets, Income levels, availability of institutions, vulnerability, awareness (such as through training) labor and innovativeness of by small scale poultry producers. Technology that require few assets have lower risk premium and are less expensive and have a higher chance of being adopted by small holder producers. In sub Saharan Africa, the use of technology can narrow the gap between what the farmers get and what is feasible with technology. Adoption affects the rate of increase in output and determines how the increase in output impacts on poverty levels and environmental degradation. For farmers to benefit from technological advances, they have to perceive them to be appropriate and proceed to implement them on farms. Increased agricultural productivity, technology adoption rates and household's foods security and nutrition can be achieved through improved production practices, expansion of financial markets, increased capital and equipment ownership by rural household and development of research and extension linkage. Improved technology development and adoption has a positive impact on output and house hold food intake. Improved food intake can lead to improve

functioning of the human body, healthy and normal life with increased work output. This in return improved productivity, achievement of self sufficiency, poverty alleviation and food security. (Muzari,Gatsi and Muvhunzi, 2012)

Information communication technology (ICT) can be used broadly in improvement of various aspects along the value chain of poultry production, research and education to improve efficiency, predictability and reduce wastage and redundancy. Information communication technology consists of technologies that are used to handle information and improve communication. These include hardware ,software, media for collection, storage, processing , transmission and presentation of information(in any format such as voice, data, text and image), computers, the internet, CD-ROMs, email, telephone, radio ,Television, Video, digital camera among many others(Kwadwo and Mokonnen,2012)

ITC is believed to bring about economic development by creating an enabling environment by improving communication, increasing participation, dissemination of information and sharing knowledge and skills and it enables attainment of high level of satisfaction in social and economic benefits. Fast and efficient dissemination of suitable technological information from research station to the poultry farmers in the field and reporting of producers' feedback to the research system is one of the critical inputs in transfer of poultry production technology (Meena and Singh, 2013).

Knowledge and information have become the major drivers of social and economic transformation in the world. Agriculture education and extension can play a critical role in transformation process to transfer technology, support learning, and assist

poultry producers in problem solving and enable them to become more actively embedded in the production knowledge and information. Market information, transport information, information on storage facilitation, livestock disease management all have an impact on level of farmers' income, improved livelihood and food security. Connectivity to the internet and mobile phones is increasingly bringing market information, financial and other important services to remote and widespread areas. And is helping to change people's lives in many ways (Sanusi, petu-ibikunle and Mshelia, 2009)

In Kenya, Kenya Agricultural commodity Exchange (KACE) is involved in collection, updates, analysis and provision of reliable and timely market information and intelligence on a wide range of both crop and livestock commodities with particular attention to smallholder farmers and small scale agribusiness. KACE uses market information and linkage system to harness the benefits and advantage of modern ICTs to collect and deliver information KACE has market resource centers, mobile phone short messaging services, interactive voice response services, internet database system, national radio, rural FM radio and central hub in Nairobi as components of its ICT .A user has to dial a special phone number to access information of over 20 commodities in English or Kiswahili. This gives subscribers market information on prices, extension messages, and opportunities to sell or bid commodities.

USAID (2010) reported a case of Suguna poultry farm India which uses Oracle' s enterprise Resource Planning (ERP) software data system where its field agents can put data via web sites on its contractor growers operations. The farm is able to track

and consolidate information on prices paid, mortality rates, feed delivered and chicken delivered. The use of ICT has enabled the farm to efficiently manage its work.

Studies have shown that there are several factors affecting use of ICT in Sub Sahara Africa and some of them are level of income, level of production experience, literacy and educational attainment, sociocultural status and gender with men being on the higher side of ICT usage despite having come from same background with men. High costs of available technology, inadequate infrastructure, low ICT skills, poor and expensive connectivity, inappropriate ICT policies, Language barrier, low bandwidth, inadequate credit facilities and systems are some of the limitations (Henri-ukoha, Chikezie, Osuji and Ukoha, 2013)

2.3 Marketing factors in implementation of poultry enterprises

The ultimate goal of any entrepreneur is to make profit through sale of goods or services. The main products from commercial poultry production are eggs and meat. Owuor and Bebe (2009) indicated that linkages between farmers and urban agribusinesses should be established in order to minimize farm gate and urban livestock prices differentials. Value addition should be encouraged and enhanced in order to promote market oriented smallholder agriculture in developing countries. Value added products help increase productivity and returns from investments. IFAD (2014) reported that small scale livestock producers are accounting for 85% global food producers and are the main investors. Lack of capacity to invest in modernizing their farms so as to improve quality (through value addition) and quantity to enable respond and adapt to market demand, lack of reliable partnership with other value

chain stakeholders to gain access to market on sustainable basis such as through contract farming and poor bargaining power in dealing with market intermediaries so as to get fair prices for their products are some of challenges faced by small scale producers. Small holders should value add their products, organize themselves into producers and farmers organizations to provide economic services at reduced costs through economy of scale, to increase bargaining power and to present small holders interests within value chains. Wainaina *et al* (2012) demonstrated that contracted poultry farmers earned more net revenue per bird compared to independent farmers and recommended participation in contract farming to improve benefits of small holder poultry farmers. Contractual arrangements can provide farmers with access to production services, credit, knowledge of new technology and the pricing arrangements can reduce risk and uncertainty. (Murthy and Madhuri, 2013) confirmed that contract farming can be an effective to in mitigating risks faced by farmers while marketing poultry products to the final consumer.

Farayola, Adeyemo, Nwachukwu and Yusuf, (2013), shown that value addition acted as an aid to marketing strategies for poultry products such as eggs and poultry meat.

Value added meat products fetch more profits .Meat products s sales need to be improved in order to avoid losses arising from perishability of meat since most businesses lack storage facilities which make them prone to losses related to perishability during low demand. Processing poultry meat to added value products contribute to sustained demand and efficient marketing of meat to earn reasonable returns from meat animals by farmers. Organized development of processed meat sector is important to realize full benefits from meat animals and contribute for

sustained meat production. Value addition produce variety of products, increase demand and marketability and meat lifestyle requirements such as low fat requirements, to preserve, transport and distribute to larger populations, to facilitate export of meat products to promote entrepreneur venture and employment growth of processed meat sector will ensure a regular off take of their produce at reasonable prices and provides a variety to consumers. In poultry sector prices fall due to excess supply .Poultry could be processed and stored to be realized into market at an appropriate time and farmers return could be protected to sustain his operations. Processing and availability of new products consumption particularly poultry has increased many folds in the world. Processing include partitioning ,deboning, size reduction, seasoning, tenderization tumbling, retorting ,battering, breading, variety of cooking methods used to produce variety of value added products. Packaging, storage flavor, colour change, labeling requirements are important factors in the success of processed meat products. (Ngore, Mshenga, Owuor and Mutai , 2011) .This was also supported by Gwin, Lauren, Thiboumery, and Stillman,(2013) who demonstrated that investing in value addation of local meat and poultry processing has a correlation with success.

Farayola *et al* (2013) noted that the single most critical needs for development of poultry production is the right type of organization (social homogenous group in a manner of self help groups of 10 to 20 poultry farmers), that will be able to address issues of provision of timely and regular quality inputs, collection and marketing off eggs and chicken on definite regular interval, daily, bi-weekly or weekly as is

practiced in dairy sector and value additions as aid to marketing strategies for the products.

Mailu *et al* (2012) concluded that marketing of poultry and poultry products has been characterized by extensive movement of live birds and their products in Kenya since marketing channels are either missing or poorly developed. Most producers sell their products at local market or through middle men. These middle men sell them in local market, (individuals, kiosks, shops, small restaurants or to other collectors who sell in secondary market in urban areas. This contributes to low returns to the poultry farmers as well as high cost to the consumers of poultry products.

One of the most important changes that can be achieved by small scale poultry producers is to organize themselves effectively into producers associations and to acquire skills to effectively market their products through profitable market links thus achieving greater share of the final products price. Such organizations might also lead to improvements in the supply of inputs such as vaccines, day old chicks at better prices both of which are of concern as well as receive training in improved rearing technology. Powerful associations may also be able to hire specialist advisor or provide incentives for the development of private practitioners such as private veterinarians and animal production specialists.

Farmers are more likely to implement new practices and stick with them, able to see direct benefits such as increased productivity, better means of processing and storing and better knowledge of market and pricing (economic benefit). Producers are engaged in evaluating improved practices and sharing of their lessons and success with farmers

groups proving to be an effective way of scaling up technology adoption. Farmers associations can be strengthened and consolidated to institutional capacity to give them greater say in agricultural policies and programmes .Farmers groups development is important to facilitate their integration of small farmers in value chains IDRC (2013) suggested the call for such farmers associations and groups.

In order to improve income levels and food security women are motivated to form women groups to participate in agricultural related activities and the motivating factor was shown to be the higher level of income level from such endeavors. Marketing groups are able to have greater control of their economic lives, get higher prices as middle man is cut out, diversify their skills by gaining marketing and business experience as well as increased networking and learning opportunities with other farmers (IFAD,2009)

The principle behind contract farming is the shifting of risk from the producers to processor or marketer since it provides future market for goods being produced. The issue of production and price risk sharing is the main reason behind incentives for producers to enter contract farming. Contract farming is an agreement between farmers and processing and or marketing firms for the production and supply of agricultural products under forward agreements frequently at predetermined prices. In contract farming much of price risk is reduced since mostly the price is predetermined rather than unpredictable market prices. The arrangements often involve the purchaser in providing a degree of support through delivery of inputs, collection of products, provision of extension services and information to guide farmers meet market demand , guarantee of prices before the start of production, provision of inputs on credit

among others. In return the producer commits himself to provide specific commodity on quantities and qualities standards determined by the purchaser. The company on the other hand agrees to support the farmer's production and to purchase the commodity. (Minot, 2011 and Murthy *et al*, 2013) There are several models of contract farming which include centralized, multipartite, intermediary and informal models. In centralized, a centralized processor and or buyer procure products from small scale farmers and provide services like pre-financing of inputs, extension and transportation of produce from farms to processing units. Multipartite is characterized by two or more organizations, state, private agribusiness firms or NGOs, etc work together to coordinate and manage the co-operation between producers and buyers. On the other hand, intermediary model resemble centralized model but they act as an outsourced intermediary on the behalf of another major firm. Intermediaries organize everything on behalf of the final buyer starting with inputs supply, extension services, paying farmers and final products transport among others. The informal arrangement model involves casual oral agreement between contracting parties and regularly repeated marketing transactions with absence of written contracts or equally binding and specifying documents. (Wainaina *et al*, 2012). It has been argued that contract farming is a mean of large agribusiness firms to exploit small scale producers due to the unequal farming power and market power and that it is too costly to small scale producers. Reduced subsidy and trade liberalization, presence of several middle men, lack of market information among other make the farmer not to take full advantage of production. Centrally to this, contract farming enable farmers to access ready and assured market access, global market thus solution to endemic market failures in

developing countries among others .Contract farming has led to low working capital, reduced risks , assured prices, increased net revenue per bird in poultry farming, improved welfare of participating farmers, reduced rural and urban poverty, higher and more stable income and improved living standards(Wainina *et al* ,2011;Huang, Wang.X and Qui.H,2013)

2.4 Production costs in implementation of poultry enterprises

Poultry enterprises have both variable and fixed costs. Variable costs change with the number of birds produced and are not incurred when the producer is not growing birds. All inputs costs such as feeds, day old chicks, drugs and biological, electricity, water among others. Fixed costs in poultry production remain the same whether birds are produced or not. Depreciation costs on houses and equipment and interest are some of the fixed costs.

Kang,ethe and Muturi (2013) were able to show that the cost of inputs has significantly increased in the last fifteen years but the price of poultry products has not increased at the same rate. They also shown than the cost of poultry feeds has been skyrocketing compared to slower increase on price of products such as eggs. To finance these costs, poultry entrepreneur are obliged to seek financial services such as credit facilities from banks.

Feed cost factors are many and they include high cost, low quality feeds and availability of feeds supplied by millers which have negative impact on productivity. Poultry are the most sensitive to poor quality feeds among the domestic animals and results are low production of meat and eggs due to nutritional deficiencies, and susceptibility to diseases. This lowers the return from the poultry farming business

significantly, discouraging business entrepreneurs and impact on availability of protein products. To attract more poultry farming entrepreneurs and retain the current ones, net return must be significant. One aim of any business is to reduce cost and risks in order to maximize profitability. Vertical integration has been suggested to reduce or eliminate the transaction costs incurred when separate companies own two separate stages of production. (Bamino O.M, Momoh.S and Philip D.O.A, 2009)

In Kenya, introduction of VAT on animal feeds and other agricultural inputs, unstable maize production has resulted to over 26% increase in the cost of poultry feeds since the increase cut across all the inputs such as fertilizer which is used in maize production. This has effects on sustainability of poultry agribusiness and has even forced some entrepreneurs to abandon it since they cannot break even. To counter this, some farmers have opted to making their own feeds. In Kenya, most farmers rely on commercial feeds and majority is of poor quality resulting to unnecessary huge losses. A farmer who can stand to bring down his cost to 50-60% stands to make good returns in the poultry business. Feeds formulating entrepreneur can stand to save up to Ksh 840.00 in each 70 Kg bag of chicken feeds. (The organic farmer magazine, 2013)

Large resources of non conventional agro forestry trees are not fully utilized in Kenya due to lack of information of their nutritive value and level of inclusion in the feeds. Such supplements in the manufacture of poultry feeds can significantly lower the cost of poultry feeds therefore impacting positively on the economic status of poultry farmers, save country the foreign exchange spent on importing agro industrial products for manufacturing livestock feeds and increase export earning to households,

improve economic empowerment and income diversification of communities (Kingori *et al*,2011)

For the costs of production to be adequately met, there has to be a proper funding mechanism of the enterprises .The cost of inputs has affected business financing with many banks being not willing to finance poultry business startups and expansion due to limited cash flow as results of diminishing profit margin which consequently affects the rate of poultry products supply (Kang'ethe *at al*, 2013)

Modern poultry enterprise require additional financing apart from farmers own investment fund. The enterprises require application of modern technology in the management of the poultry business. The poultry enterprise is resource driven and requires the farmer to be in control of housing, environmental control, nutritional and health needs of the birds for optimal productivity. Access to credit can help livestock farmers boost production and employ better methods of livestock farming .Its estimated that 36% of rural Kenyans have no access to any form of financial services .Access to financial services is one of the obstacle that many farmers have to overcome to be able to engage in commercial livestock production. High risks connected to drought, diseases and inability of small scale farmers to provide collateral for their loans have resulted in farmer getting the lowest level of credit compared to other entrepreneurs .Several studies have shown that for investment, small holder farmers in sub-Saharan Africa depend on savings from their low incomes which limits opportunities for expansion. Lack of collateral or credit history makes most farmers to be bypassed by commercial or National development banks and formal micro credit institutions. This push farmers to rely on own savings, income of

friends and relatives, remittances and informal money lenders. The share of commercial banks loans to agriculture has been very low compared to manufacturing, trade, and other services sectors hampering expansion and technology adoption and thus low productivity. In Kenya, lack of capital and access to affordable credit is cited as one of the main factors behind the low productivity in agriculture by small scale holders .Spending in Agriculture by most Governments is very low at an average of 6% of total expenditure since 1980. Some spend as low as 1% of their budget on Agriculture contrarily to 10% of national budget pledged at Maputo meeting by African Union (AU) heads of state and Governments in July 2003.

Diseases pose one of the greatest risks in poultry enterprises and every producer is supposed to remain abreast in disease control. Poultry diseases can be categorized in many different ways and among them is according to causative agents. In this classification, diseases can be classified according to causative agents such as viral, bacterial, parasitic, fungal, nutritional, physical such traumatic, thermal and chemical. The sources of infections in poultry originate from different sources such as humans(neighbors, workers, extension and veterinarians), contaminated equipments, from poultry (recovered poultry, poultry from shows and markets ,backyard poultry), rodents, house hold pets, wild birds and insects, feeds and water, dust and air among others. One major method of poultry disease management is Biosecurity which is defined as measures taken to prevent microbial, parasites, insects, rodents and wild birds from entering or surviving or infecting or endangering of health of the poultry building. Bio security is aimed at exclusion, eradication and effective management of

risks posed by pests and diseases to the economy, environment and human health (Siekkinen,Heikkila,Tammiranta and Rosengren,2012)

The major costs of disease control arise from preventive medication such as compulsory vaccination against different diseases, traffic/personnel control such as pest control, building fences, gates to prevent introduction of disease causing agents, hygiene of poultry farms through disinfection of poultry houses, regular cleaning of equipments and houses, training of poultry famers and staff on diseases management and finally but not the least by treating the sick birds. A well planned disease control plan should be adopted by poultry entrepreneurs through clearly defined objectives, risk assessment, establishing Bio security standard operating procedures (sops) and monitoring the effectiveness of the Bio security plan(auditing).Many studies concur that Bio security is the most economical and effective method of disease prevention and control . Bio security has a direct relationship with profitability of poultry farms and firms with poor Bio security measures have always reported drop in egg production, slow growth rate, poor hatchability, poor feed conversion ratio(FCR) and increased rates of condemnations(Yonatan S,2011).The total costs of Bio security per bird are dependent on the number of birds and the higher the number of birds the lower the cost of preventive medication, pest control, operational hygiene among others (Siekkinen *et al* ,2012)

2.5 Land and infrastructure in implementation of poultry enterprises

Infrastructure has been taking a large share of investments in Africa. Among the infrastructure roads are considered of first interest to reduce poverty due to the broadly accepted consensus that transport infrastructure has significant, positive and

substantial impact on economic growth and poverty since it improves the connectivity of segregated and remote areas.

Llanto (2012) demonstrated that there is a significant relationship between infrastructures and economic development. Inoni and Omotor (2009) shown that road infrastructure promotes intersect oral linkages between the Agricultural and non-farm sector that enhances income diversification strategies among entrepreneurs

Shortage of land and population pressure has been identified as an obstacle to increased agricultural output. Coupled with changing climate conditions , lack of improved farming technology the structure of land tenure and lack of proper land ownership challenge output optimization .Natural resources management and application of technology is highly affected by land tenure system and property right .Secured property rights has several advantages such as giving sufficient incentives to the farmers to increase their efficiencies in terms of productivity ,making farmers emotionally attached to the land work on and use inputs efficiently thus providing incentives for investment in land ,durable structures such as poultry houses and sustainable development. Secure land ownership has socioeconomic advantages and increased incentive to invest, better access to investment or substitute shock all increase productivity, productive development .Thus, Security in property ownership determine farmers profit margin and land use decision .Insecure land tenure or lack of land ownership also restricts the lfarmers access to credit that are required for improved land exploitation (Shimelles ,Zahidul and Parviainen, 2009)

There are large gender inequalities in the ownership and control of assets of primary importance both globally and in Africa. Across African countries, the gender gap is quite large and the pattern that women own less land than men regardless of how ownership is conceptualized is remarkably consistent. Commercialization of poultry farming is highly dependent on efficient and wide supply of energy. Agricultural production consumes energy on various levels of value chain. The energy cost affects cost of production which are important to farmers' net returns and profitability. In poultry production, the extent in which the energy related expenses affect farmers is directly related to efficiency of birds to convert feeds to products such as eggs and meat. Higher cost of energy also affects consumer food prices, processing and value addition, distribution, and marketing. Today the largest economic cost in poultry production is feeds but fuel and electricity costs are smaller compared to feeds but their share of total cost is predicted to increase in the future. In order to optimize energy consumption and find potential savings, the energy consumption and its allocation inside the production system must be known. Due to climate change and rising energy prices, energy saving has become increasingly important. Energy consumption of individual farms is affected by climate, season, building type, devices, bird batches, practices and management skills (Rajaniemi and Ahokas, 2012).

Lack of linkage to power supply, irregular power supply affects producers, processors and marketers simultaneously. For instance, poultry farmers need electricity to heat up brooding environment for his chicks, light supply at night to increase feed consumption and weight gain in his birds, the feed miller who needs electricity to run his mill and even the marketer who requires electricity to blast freeze or deep freeze

the poultry products before supplying to the market. Commercialization of poultry sector is therefore put in jeopardy by such vicious cycle of inefficiency (Ugnu, 2009)

Efficient Agricultural marketing is achievable through critically important and efficient transport system. Poultry entrepreneurs require roads to access markets, to receive inputs such as bulky feeds among others. Roads account for about 93% of all freight and passenger traffic in Kenya with the country having 160,886km of public road network (GOK, 2012). Farmers who totally depend on transport services are disadvantaged when they are inefficient, of poor quality, infrequent or expensive. One cause of low farm gate prices for products is Expensive transport system. Similarly, impassable roads or slower inefficient transport services coupled with poor storage facilities have negative impacts on farmers. If the margin between what the farmers receives from the sale of their produce and what the urban consumer pays for his produce is high then the effective demand transferred to the farmer will be considerably be reduced. Agriculture marketing is greatly and strongly influenced by the nature of transport services. Economies of scale are present in both transport and marketing operations with many developing countries suffering from monopolistic low volume and high cost transport and marketing system. Transport costs are higher in rough roads than on good quality bitumen roads and this will be reflected in freight tariffs and passenger fares. To get the final market price of a product, marketing margin and transport cost including the high cost of head loading produce to the road side has to be subtracted from the final market price. Freight transport cost and charges in African countries are consistently higher than comparable costs in Asian

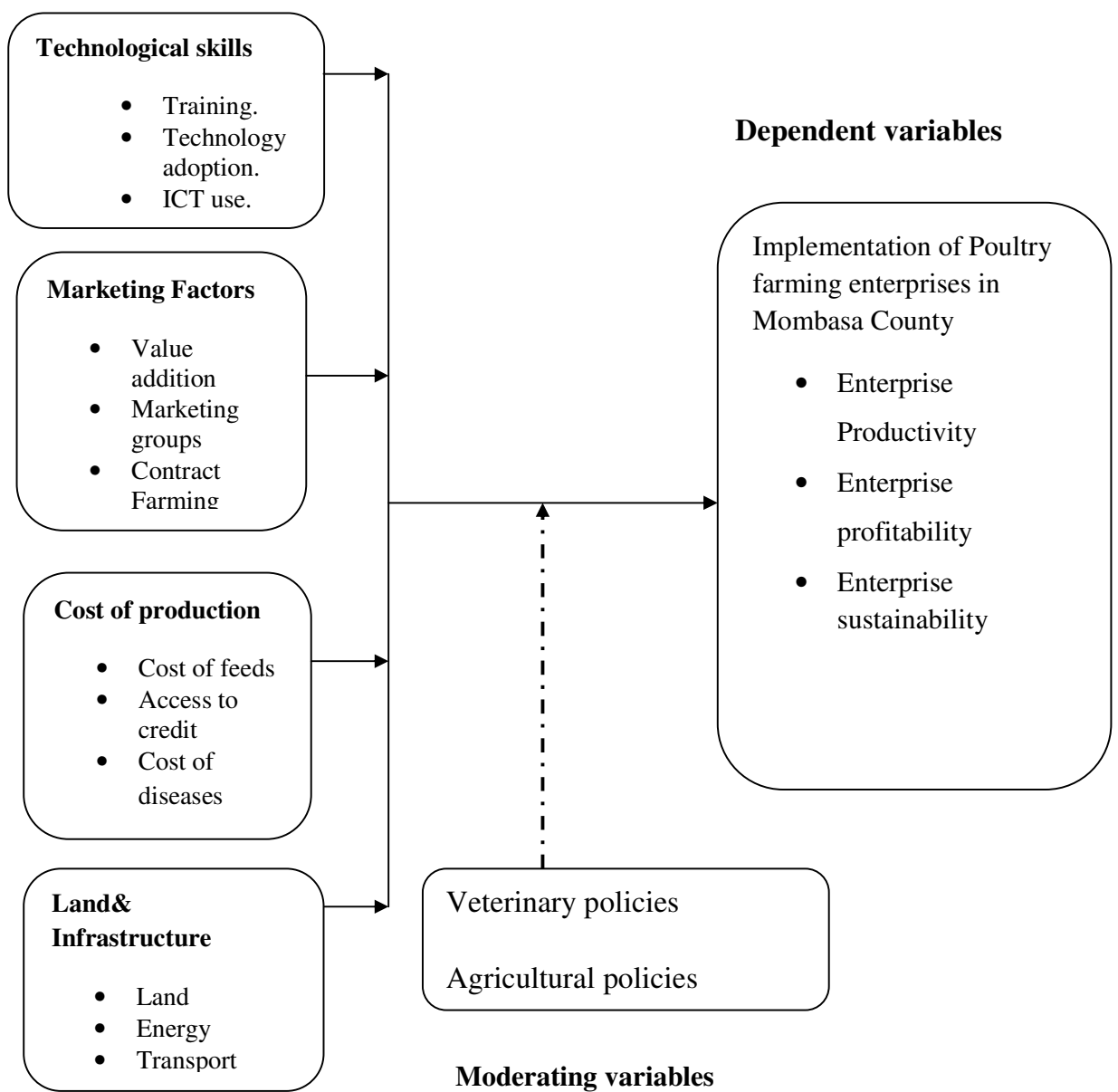
countries with transport cost increasing in case of roughness and wet season (Gina, 2013)

2.6 The Conceptual Framework

The conceptual framework summarizes the indicators of dependent, independent and moderating variables as analyzed in the literature review.

Figure 1 Conceptual framework

Independent variables



2.7 Explanation of relationship of variables in the Conceptual Framework

The technological skills, marketing factors, production factors and land and infrastructure all have a relationship with implementation of poultry farming enterprises. These factors affect profit margins, productivity, sustainability, availability of products to consumers among others. The Government policies have regulating roles and creating enabling environment for implementation of poultry farming enterprises and they can be easily changed.

2.8 Gaps in literature reviewed

Literature review identified several literature gaps. Most of the available literature was from outside the countries. The literature review revealed that countries like Nigeria, USA, India, Pakistan, and European countries have done a lot of research on poultry industry. From this point of view, most information was sought from sources outside Kenya.

In Kenya most research work concentrated on indigenous poultry farming with lesser work on commercial poultry farming. There is also scanty information about poultry farming in Mombasa County.

2.9 Summary of Literature Review

The literature has outlined several factors influencing implementation of poultry farming enterprises. The literature has shown that technological skills, marketing factors, costs of production and infrastructure are key components of poultry farming enterprises they have effects on profitability and productivity of the enterprises and hence livelihood, income and food security. Although these are not the only factors to

be considered, the review has shown that they affect the affordability and demand of poultry products in the market. The role of government in poultry farming enterprises is more of regulatory and statutory role, enhancing a conducive environment to undertake poultry farming as a business.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the area of study and the methodology which was used to carry out the study and to collect data. The chapter discusses the research design employed, the study population and sample size, sampling design used and the procedure, the data collection instrument, instrument validity and reliability, data collection procedure and the analysis and presentation of data and ethical considerations.

3.2 Research Design

The study used descriptive survey design to gather information on relationship between implementation of poultry farming enterprises and the independent factors including technological skills, marketing factors, production costs and land and infrastructure. Khan,(1993) suggested that descriptive survey design has ability to produce information about aspects of education that interests policy makers and researchers .The descriptive survey design helps to ensure minimization of bias and maximization of reliability because of its rigidity and it focuses on the objectives of the study. This assist in saving cost and time which are some of the expected constraints in this research study.

3.3 The target population

Welman and Mitchell (2005) defined the target population as the full set of cases from which a sample is taken. The target population for this study was poultry farmers and livestock officers in Mombasa County. The study focused more on commercial poultry farmers who have been keeping poultry as a source of income. The geographical location of the study was confined in Mombasa County which covers an area of approximately 300km² of land and 65Km² of water mass. The County border Kilifi County, Kwale County, and Indian Ocean to North, South West and East respectively. The county is further subdivided into six Sub counties namely Mvita, Changanwe, Jomvu , Likoni, Kisauni and Nyali. The county had a population of about 1,041,928 in the year 2009 census.

Gray (2004) stated that the target population should have some observable characteristics to which the researcher intends to generalize the results of the study. The study population comprised of commercial poultry farmers and livestock officers. The study population comprised of commercial poultry farmers and livestock officers. FAO (2008) reported that there are about 588 commercial poultry farmers in Mombasa County. The county has 41 livestock officers who provide extension education, animal health and production services to all livestock farmers in the county.

3.4 Sample size and Sampling procedure

The sample which was the group from which the information was gathered (Frankel, 2000). For this study the sample was commercial poultry farmers and livestock officers. A stratified random sampling procedure was used to ensure inclusion of all farmers since the population was heterogeneous.

3.4.1 Sample size

According to Mugenda and Mugenda(2003), from descriptive studies ten percent (10%) of the accessible population is enough for sample size. Mugenda and Mugenda (2003) further recommend that where time and resources allow, a researcher should take as big sample as possible. This was also stated by Kerlinger(2009) that 10 percent of a sample allows for reliable data analysis. This has an effect of reducing the sampling error .From the ongoing, 10% of 588 poultry farmers is 58 while 10% of 41 Livestock officers is 4 officers. The researcher selected a sample of 70 farmers and 10 livestock officers.

Table 3.1: Sample Size

CATEGORY	POPULATION SIZE	SAMPLE SIZE	PERCENTAGE
Poultry Farmers	588	70	11.9%
Livestock Officers	41	10	24.4%
Total	629	80	12.7%

3.4.2 Sampling procedure

Since the population of poultry farmers was heterogeneous, the researcher used stratified random sampling procedure to select commercial poultry farmers and livestock officers in Mombasa County. According to Mugenda and Mugenda (2003), the more heterogeneous the population is, the bigger the sample required to capture the variation within the population and stratified random sampling was used to ensure inclusion and give more statistical precision.

3.5 Data Collection Instrument

The study employed questionnaires and interview to collect data so as to meet the overall objective of study. Questionnaires were used since they are easy to derive information (Oso and Onen, 2009). The questionnaires were subdivided into sections each representing a research objective. Section A captured background information, Section B involved questions on technological skills, Section C on marketing factors, Section D on production costs while section E on Land and Infrastructure. The questions sought to examine how these factors influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County, Kenya. The key informant guide was summarized into two sections comprising of general information and research based information. Preliminary arrangements were made prior to interviews by seeking and booking appointments.

3.6 Reliability & validity of Data collection Instrument

Selection of the research instruments was based on their validity and reliability to achieve the objectives of this study. Questionnaires and interview guide were the main research instrument used to collect data for this study.

3.6.1 Reliability of research Instruments

Mugenda and Mugenda (2003) described reliability as a measure of the degree to which a research instrument yields consistent results after repeated trials. Cooper and schindler (2003) described reliability is the degree to which measures are free from error yielding consistent results. A reliable instrument is the one that yield consistent results over time. The researcher used the split half method to measure the degree of internal consistency of a set of scaled items against the other half. This was then followed by numbering of the results and two groups were formed where one was evaluated for internal consistency. The research instruments were selected based on reliability to achieve the objectives of the study. The main instruments used to collect data for this study was questionnaires and interviews. The research assistants were selected based on ability to interact with poultry farmers and knowledge on poultry enterprises. They were also rehearsed on how to administer the questionnaires.

3.6.2 Validity of the research Instruments

To achieve the purpose of this study, both questionnaires and interviews will be used. Mugenda and Mugenda (2003) described validity as the measure of relevance and correctness. The merits of using questionnaires are many and these include the facts that they are easy to analyze since data entry and tabulation for nearly all surveys can be done with many computer soft packages .Questionnaires are also very cost effective especially when involving a large sample with large area of study. Finally but not the least questionnaires reduce biasness since the researchers own

3.6.3 Pilot testing of the Instrument

To check the reliability of the research instrument, pilot testing was done. Both interview and questionnaires were pilot tested using a total of 10 questionnaires and 4 stakeholder interviews.

3.7 Data Collection Procedures

The researcher and four assistants will administered the questionnaires by drop and collect later basis following upon an agreed dates. This was accompanied by a letter of introduction from the University of Nairobi Extra-Mural Department. The questionnaires were collected from field followed by checking and verification to ensure accuracy. Interviews were done to collect different views and opinions from livestock officers offering services to farmers.

On the other hand, interview was used since it provide detailed information, allowed further inquiring and also have a high response rate hence it was ideal to collect data from livestock officers.

To achieve the required level of validity of the research instruments of data collection, the design of both questionnaires and interviews were formulated in such a way that clarity of the objectives were achieved.

3.8 Data Analysis techniques

All data was captured in the self administered questionnaires. The objectives of the questionnaires were to establish the relationship implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County and

the various independent variables. The enumerator followed by the researcher checked information from completed interview schedules to check for completeness and accuracy to allow detection and correction of any anomalies. To allow assess the consistency of the responses all questionnaires with related information were put together sequentially.

All the questionnaires from the field were collected for further processing, editing and coding. Data was analyzed to generate meaning from raw data and descriptive and inferential statistics was used using Statistical package for social scientists (SPSS).

3.9 Ethical Considerations

Before undertaking any research in the field, the researcher ensured an informed consent from the respondents. Singer (2008) notes that most serious risk of harm to respondents in survey research as the breach of confidentiality and loss of privacy. To ensure voluntary participation in the study, permission was sought from respondents and assurance that utmost confidentiality about the respondent's information was assured. To achieve this, respondents were provided with consent forms to sign before administering the research instruments.

3.10 Operational Definition of variables

The variables in this study constituted the dependent variables known as implementation of poultry farming enterprises and independent variables which include technological skills, marketing factors, production costs, and land and infrastructure.

Table 3.2: Types of variables, their indicators and how they were measured

Research Objective/ Question	variable	Indicator	Measurement	Level of Scale
Do Technological skills, Marketing Factors, Production costs, Land and Infrastructure influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County, Kenya	Independent Variable Technological skills	Sustained enterprises Application of knowledge Improved productivity	Influence of technology and skills on productivity and profitability	Nominal
	Marketing factors	Profitability Sales volumes	Access to market	Nominal
	Cost of production	Ability to meet costs Access to credit	Influence of production costs and ability to finance the enterprise	Nominal
	Land and Infrastructure	Land ownership Efficiency of movement Energy availability	Value of land and infrastructures in poultry enterprises	Nominal
	Moderating Variables Government policies	Poultry production bill Veterinary policy Agricultural policies	Knowledge of existing policies	Nominal
	Dependent Variables Implementation of poultry enterprises	Knowledge and skills Market availability Production costs Land and infrastructure	Factors influencing implementation of poultry farming enterprises in Mombasa County	Nominal

CHAPTER FOUR

DATA ANALYSIS, PRESENTATIONS, AND INTERPRETATIONS

4.1 Introduction

This chapter presents the responses from the poultry farmers and livestock officers and summary of the data analyzed. The responses are summarized in tables using frequencies and percentages based on the objectives of the study which aimed at finding out the factors influencing implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County.

4.2 Questionnaire return rate

The study targeted a sample of 70 poultry farmers and 10 livestock officers in Mombasa County. In order to know the exact number of questionnaires valid for analysis the return rate was established from collected questionnaires.

Table 4.1 Questionnaire return rate

<u>Target Group</u>	<u>Sample size</u>	<u>Response</u>	<u>Percent</u>
Poultry Farmers	70	54	77.1%
Livestock officer	10	9	90%
<u>Total</u>	<u>80</u>	<u>63</u>	<u>78.8%</u>

The table shows that out of 80 questionnaires given, 63 were filled and returned. This translate to a response rate of 78.8% thus 21.2% were non responsive. According to Mugenda and Mugenda (1999) a 50% response rate is adequate, 60% is good and above 70% rated very good. This implies that basing on this study, response rate was 78.

4.3 Demographic Characteristics of the Respondents

The demographic characteristics of respondents were analyzed to enable determine the extent to which various characteristics of respondents influence implementation of poultry farming enterprises. These include gender, age, and education level.

4.3.1 Gender

The gender was categorized into male and female. There were more female respondents than males at 67.7% and 33.3% respectively

Table 4.2: Gender of Respondents

Gender	frequency	percentage
Male	21	33.3%
Female	42	67.7%
Total	63	100%

4.3.2 Age of respondents

The age was grouped into five groups of class interval of ten years. The age class with the highest respondent was 41-50 years and this formed the modal class which had a proportion of 31.7%. This was followed closely by the age class of over 50 years which had a proportion of 28.6%. The data shows that majority of those who were in poultry farming enterprises were of 40 years and above.

Table 4.3: Age of Respondents

Age class	frequency	percentage
Below 20	0	0
21-30 Years	12	19.1%
31-40 Years	13	20.6%
41-50 Years	20	31.7%
Over 50 Years	18	28.6%
Total	63	100%

4.3.3 Education background

Majority of the respondents were of Diploma/Certificate level at 33.3% followed by secondary level at 31.75%. Graduate, primary level and postgraduate had 10%, 9% and 3% respectively.

Table 4.4: Education Level of Respondents

Highest Education Level	Frequency	Percentage
Post graduate	3	4.76%
Graduate	10	15.87%
Diploma/Certificate	21	33.33%
Secondary	20	31.75%
Primary	9	14.29%
Total	63	100%

4.4 Technological skills and implementation of Poultry enterprises.

The first objective of this study was to examine whether technological skills influenced implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County. The researcher explored the univariate nature of independent variable technological skills. Technological skills variable was responded to by poultry farmers in a 4 likert scale of different levels of agreeing or disagreeing as an important factor in implementation of poultry farming enterprises for economic empowerment in Mombasa County.

Table 4.5: Frequency table on Technological skills

Response	Frequency	Percentage
Strongly disagree	3	4.76%
Disagree	10	15.87%
Agree	37	58.73%
Strongly agree	13	20.64%
Total	63	100%

From table 4.5, the respondents showed that most farmer consider technological skills as a factor influencing implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa county. The data show that thirty seven respondents agreed followed by thirteen respondents who strongly agreed that technological skills influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa county accounting for 58.73% and 20.64% respectively. On the other hand, ten respondents disagreed while three strongly disagreed that technological skills influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa county accounting for 15.87% and 4.76% respectively.

4.4.1 First hypothesis on technological skills and implementation of Poultry enterprises.

H₁: Technological skills influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County

Table 4.6 Observed and expected responses on relationship between technological skills and implementation of Poultry enterprises in Mombasa County.

Likert scale	1	2	3	4
Observed (O)	3	10	37	13
Expected (E)	15.75	15.75	15.75	15.75

Table 4.7 Chi-Square testing for the first hypothesis

O	E	(O-E)	(O-E) ²	(O-E) ² /E
3	15.75	-12.75	162.5625	10.3214
10	15.75	-5.75	33.0625	2.0992
37	15.75	21.25	451.5625	28.6706
13	15.75	-2.75	7.5625	0.4801
				$\sum (O-E)^2/E = 41.5713$

$\chi^2_c = 41.57 > \chi^2_{0.05} = 7.815$ at 3 degrees of freedom and 95% level of confidence.

Since the calculated chi-square value of 41.57 is greater than the critical chi-square value at 95% level of confidence, we accept the alternative hypothesis in that there is a significant relationship between technological skills and implementation of Poultry enterprises in Mombasa County

4.5 Marketing factors and implementation of Poultry enterprises.

The researcher further explored the univariate nature of the independent variable marketing factors. The farmers responded to the variable in a 4-likert scale of different levels of agreeing to the factor as influencing implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County.

Table 4.8: Frequency table on marketing factors

Response	frequency	percentage
Strongly disagree	2	3.18%
Disagree	8	12.70%
Agree	43	68.25%
Strongly agree	10	15.87%
Total	63	100%

From the above table 4.8, the respondents showed that marketing factors influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County. The data show that forty three respondents agreed followed by ten respondents who strongly agreed that marketing factors influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa county accounting for 68.25% and 15.87% respectively. On the other hand, eight respondents disagreed while two strongly disagreed that marketing factors influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa county accounting for 12.7.% and 3.18% respectively.

4.5.1 Second hypothesis on Marketing factors and implementation of Poultry enterprises.

H₁: Marketing factors influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County.

Table 4.9 Observed and expected responses on relationship between marketing factors and implementation of Poultry enterprises in Mombasa County.

Likert scale	1	2	3	4
Observed (O)	2	8	43	10
Expected (E)	15.75	15.75	17.75	15.75

Table 4.10 Chi-Square testing for the second hypothesis

O	E	(O-E)	(O-E) ²	(O-E) ² /E
2	15.75	-13.75	189.0625	12.0040
8	15.75	-7.75	60.0625	3.8135
43	15.75	26.25	689.0625	43.7500
10	15.75	-5.75	33.0625	2.099
$\sum (O-E)^2/E = 61.6665$				

$\chi^2_c = 61.67.02 > \chi^2_{\alpha, 0.05} = 7.815$ at 3 degrees of freedom and 95% level of confidence.

Since the calculated chi-square value of 61.67 is greater than the critical chi-square value at 95% level of confidence, we accept the alternative hypothesis in that there is

a significant relationship between marketing factors and implementation of Poultry enterprises in Mombasa County.

4.6 Production costs and implementation of Poultry enterprises.

The other factor explored by the researcher was that of cost of production. The poultry farmers responded on production costs 4 likert scales of different levels of agreeing with cost of production as a factor influencing implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County.

Table 4.11: Frequency table on production costs

Response	frequency	percentage
Strongly disagree	4	6.35%
Disagree	10	15.87%
Agree	38	60.32%
Strongly agree	11	17.46%
Total	63	100%

From table 4.5 above showed that production costs influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County. The data show that thirty eighth respondents agreed followed by eleven respondents who strongly agreed that production costs influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa county accounting for 60.32% and 17.46% respectively. On the other hand, ten respondents disagreed while four strongly disagreed that production costs influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa county accounting for 15.87.% and 6.35% respectively.

4.6.1 Third hypothesis on Production costs and implementation of Poultry enterprises.

H₁: Production costs influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County.

Table 4.12 Observed and expected responses on relationship between Production costs and implementation of Poultry enterprises in Mombasa County.

Likert scale	1	2	3	4
Observed (O)	4	10	38	11
Expected (E)	15.75	15.75	15.75	15.75

Table 4.13 Chi-Square testing for the third hypothesis

O	E	(O-E)	(O-E) ²	(O-E) ² /E
4	15.75	-11.75	138.0625	8.7659
10	15.75	-5.75	33.0625	2.0992
38	15.75	22.25	495.0625	1.4325
11	15.75	-4.75	22.5625	1.4325
$\sum (O-E)^2/E = 43.7301$				

$\chi^2_c = 43.73 > \chi^2_{\alpha, 0.05} = 7.815$ at 3 degrees of freedom and 95% level of confidence.

Since the calculated chi-square value of 43.73 is greater than the critical chi-square value at 95% level of confidence, we accept the alternative hypothesis in that there is a significant relationship between Production costs and implementation of Poultry enterprises in Mombasa County.

4.7 Land and infrastructure and implementation of Poultry enterprises.

The researcher further explored the univariate nature of the independent variable land and infrastructure. The farmers responded to the variable in a 4-likert scale of different levels of agreeing to the factor as influencing implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County.

Table 4.14: Frequency table on land and infrastructure

Response	frequency	percentage
Strongly disagree	1	1.59%
Disagree	14	22.22%
Agree	39	61.90%
Strongly agree	9	14.29%
Total	63	100%

From the above table the respondents showed that most farmers considered land and infrastructure as a factor influencing implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County. The data show that thirty nine respondents agreed while nine e respondents strongly agreed that land and infrastructure influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa county accounting for 61.90% and 14.29% respectively. On the other hand, fourteen respondents disagreed while one strongly disagreed that land and infrastructure influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa county accounting for 22.22% and 1.59% respectively.

4.7.1 Fourth hypothesis on Land and infrastructure and implementation of Poultry enterprises.

H₁: There is a relationship between land and infrastructure and implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County.

Table 4.15 Observed and expected responses on relationship between Land and infrastructure and implementation of Poultry enterprises in Mombasa County.

Likert scale	1	2	3	4
Observed (O)	1	14	39	9
Expected (E)	15.75	15.75	15.75	15.75

Table 4.16 Chi-Square testing for the fourth hypothesis

O	E	(O-E)	(O-E) ²	(O-E) ² /E
1	15.75	-14.75	217.5625	13.8149
14	15.75	-1.75	3.0625	0.1944
39	15.75	23.25	540.5625	34.3214
9	15.75	-6.75	45.5625	2.893
				$\sum (O-E)^2/E = 51.2237$

$\chi^2_c = 51.22 > \chi^2_{0.05} = 7.815$ at 3 degrees of freedom and 95% level of confidence.

Since the calculated chi-square value of 51.22 is greater than the critical chi-square value at 95% level of confidence, we accept the alternative hypothesis in that there is a significant relationship between Land and infrastructure and implementation of Poultry enterprises in Mombasa County.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter represents a summary of the major findings that were presented in chapter four, summary, conclusion and recommendations suggested by the researcher. All the findings are summarized as per the objectives, they show how objectives have been achieved and how objectives agree or disagree with the literature reviewed.

5.2 Summary of findings

The study was designed to establish whether technological skills, marketing factors, production costs and land and infrastructures affect implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County.

The data analyzed on technological skills shown that 79.4% of farmers considered technological skills as an important factor in implementation of poultry farming enterprises in Mombasa county. Only 20.6% of all the respondents disagreed with the fact that technological skills are important factor in implementation of poultry enterprises for economic empowerment of local communities in Mombasa County. The Chi square (χ^2_C) value of 41.57 which was greater than 7.815 at 3 degree of freedom and 95 % level of confidence shown that there was a significant relationship between technological skills and implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County.

The second objective sought to determine whether marketing factors influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County. Of all the respondents in poultry farming, 84.13% considered marketing an important factor in implementation of poultry farming enterprises in Mombasa County. Only 15.87% of respondents who disagreed with the fact that marketing in an important factor in implementation of poultry farming enterprises in Mombasa County. The Chi square (χ^2_C) value of 61.67 which was

greater than 7.815 at 3 degree of freedom and 95 % level of confidence shown that there was a significant relationship between Marketing factors and implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County.

On cost of production, 77.78% of respondents agreed that production costs influence the implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County with only 22.22% of respondents disagreeing the fact that production factors influence implementation of poultry farming enterprises in Mombasa County. The Chi square (χ^2_C) value of 43.73 which was greater than 7.815 at 3 degree of freedom and 95 % level of confidence shown that there was a significant relationship between production costs and implementation on poultry farming enterprises for economic empowerment of local communities in Mombasa County.

The final objective was that of land and infrastructure where 76.19% agreed that land and infrastructure influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa county while 23.81% disagreed the fact that land and infrastructure influence implementation of poultry farming enterprises in Mombasa county. The Chi square (χ^2_C) value of 51.22 which was greater than 7.815 at 3 degree of freedom and 95 % level of confidence shown that there was a significant relationship between Land& infrastructure and implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County.

5.3 Discussions

In this section, the findings of each objective are discussed and the researcher tries to show how the findings agree or disagree with the documented work of literature review that was captured in chapter two of this report. The study found that implementation of poultry farming enterprises was positively correlated to all independent variables; technological skills, marketing factors, production costs and Land& infrastructure.

The study found that technological skills influence implementation of poultry farming enterprises in Mombasa County. This shows that training, technology adoption and ICT use are essential in implementation of poultry farming enterprises in Mombasa County. This study agrees with Muzari et al (2012) that technology development is essential strategy for increasing productivity, achieving food self sufficiency and alleviating poverty and food insecurity among small holders farmers in sub Saharan Africa.

The study also sought to establish whether Marketing factors influence implementation of farming enterprises for economic empowerment of local communities in Mombasa County. This factor objective was the most highly rated by farmers as a factor influencing implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa county. Wainaina *et al* (2012) shown that marketing of poultry products through contract farming has positive and significant effect on net revenue per bird. Gwin *et al*, (2013) shown that for successful marketing of poultry products highly depend on investing in value addition through processing. Okello *et al*, (2010) demonstrated that forming small scale farmers marketing groups by poultry farmers will help increase productivity, profitability and reduce the risk of unpredictable prices. The study agrees with these findings that marketing factors influence implementation of poultry farming enterprises.

The results of third objective shown that production factors influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County. Most farmers agree that cost of poultry feeds, availability of finance and cost of disease control do influence cost of production. Kang'ethe *et al* (2010) shown that cost of inputs significantly affect poultry farming enterprises. Siekkinen et al (2012) shown that the cost of diseases control and management in poultry enterprises affect the enterprises financially. The study therefore agrees with these findings that the production costs influence implementation of poultry farming enterprises in Mombasa County.

The researcher also shown that Land and infrastructure influence implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County. This show that land availability, land ownership, energy supply, energy prices, transport availability and connectivity are essential in implementation of poultry farming enterprises in Mombasa County. Lianto (2012) demonstrated that infrastructure and economic development are significantly related. Shimelles et al (2009) demonstrated that secure land tenure and proper land ownership improved Farmers access to credit. Rajeniemi *et al* (2012) found that commercialization, net returns and profitability of poultry enterprises depend on efficient and wide supply of energy. Gina (2013), Marie *et al*(2013) and Lianto (2012) all shown that efficient Agricultural Marketing is highly dependent on efficient transport system. This show that the study objective concurs with the literature reviewed that Land and infrastructure influence implementation of poultry enterprises.

5.4 Conclusion

The study sought to determines factors influencing implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County, Kenya.

The researcher concluded that technological skills are key to successful implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County as farmers responded to training, adoption of new technologies from research institutes and ICT use as important in poultry enterprises productivity and profitability. Thus the poultry entrepreneur with more technological skills will be more productive and profitable.

On marketing factors, the researcher was able to get results which shown that marketing factors do influence implementation of farming enterprises in Mombasa county. The researcher noted that contract farming, marketing organizations and value addition as important issues while marketing poultry products since they contribute in risk reduction, increasing productivity, and increasing profitability. This implies that a poultry entrepreneur who is engaged in contract farming, value adding his products

and is in a marketing organization is in a position to succeed in the poultry farming enterprise.

On third objective, the researcher also concluded that cost of production do influence implementation of poultry farming enterprises in Mombasa county. Thus cost of inputs, cost of disease control and availability of finances all have impact on implementation of poultry farming enterprises. This indicates that poultry entrepreneurs with strategies to reduce costs of production are better positioned to make more profits.

On land and Infrastructure, the researcher concluded that land and infrastructure do indeed influence implementation of poultry farming enterprises in Mombasa County. Land availability and ownership, energy supply and prices and transport connectivity and availability as key issues when addressing land and infrastructure. This implies that poultry entrepreneurs owning land and in an area with good infrastructures in a positive position to succeed in poultry farming enterprises.

5.5 Recommendations for policy action

To enhance poultry farming enterprises implementation in the county and other areas with similar challenges as Mombasa, the following recommendations were arrived at.

Poultry farming entrepreneurs should be empowered technologically in order to improve their productivity. A study need to be done to establish the technological knowledge gap of the poultry entrepreneurs. There is a need to link poultry entrepreneurs with research institutes and programmed trainings.

Marketing of poultry products need to be enhanced in Mombasa County. The study suggests thorough analysis of poultry value chain with aim of encouraging value addition and enhancing market stability of poultry products. The study suggests strategies such as contract farming and formation of poultry farmers marketing organizations.

The production cost of poultry enterprises need to be addressed in order to maximize returns from the enterprises. The study recommends utilization of locally available

raw materials in poultry feeds manufacturing, entrepreneurs should also be taught how to manufacture their own poultry feeds. By forming poultry farmers organizations, the study suggest that poultry entrepreneurs can access inputs at lower prices since they will have more bargaining power and they can order and buy inputs in large quantities and at a cheaper price as well as access services in a cheaper way.

The study recommends improvement of infrastructures, review of energy prices to favor local production.

5.5.1 Recommendations for further studies

The study mainly covered on factors influencing implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County, Kenya. The researcher highly suggests studies in the following:-

1. The impact of poultry farming enterprises on the environment pollution.
2. Gender issues in poultry farming enterprises and community development aspects.

5.6 Contribution to the body of Knowledge

The purpose of the study was to examine the factors influencing implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County. This study contributes immensely to poultry enterprises in the Mombasa County. The research identified marketing factors as the most important factors influencing implementation of poultry farming enterprises in Mombasa County. This forms the basis from which poultry farming entrepreneurs can expand their enterprises and make them more profitable and sustainable. The study form the baseline for the county Government to develop policies to promote Poultry farming enterprises by addressing technological development, access to market, reduce production cost and improvement of infrastructures.

REFERENCE

- Abida P, Khan S.H, Rashid .Aand Aurangzeb. M, (2013). *Impact of Training on Rural Chicken Production Reared By Women in Islamabad/Rawalpindi, Pakistan.Life Science Journal Volume 8 Issues 1,*
- Adetumbi *et al*, (2013) .*Assessment of Use of Selected Information Communication Technologies (ICTs) for Extension Service Delivery:Implication for Agricultural Development in Nigeria. International Journal of Agricultural Management & Development (IJAMAD) ISSN: 2159-5852 (Print).Available online on: www.ijamad.com ISSN: 2159-5860 (Online)*
- Areerat.T, Hiroshi.K, Kamol.N and Yamauchi .K, (2012).*Contract Broiler Farming .American Journal of Economics and Business Administration 4(3):166-171, 2012 ISSN: 1945-5488*
- Bamino.O.M, Momoh.S and Philip .D.O.A, (2009), *vertical integration and profitability in poultry industry in ogun and oyo states, Nigeria, J.Hum.ecol, 27(2):149-154, 2009*
- Boris .M.G, and Raballand .N.G, (2010).*The Impact of Roads on Poverty Reduction .A Case Study of Cameroon by The World Bank Africa Region Transport Unit in February 2010.*
- Cooper and Schindler,(2003),*Business research methods.*
- Davis K *et al*,(2010). *Impact of Farmer Field Schools on Agricultural Productivity and Poverty in East Africa. International Food Policy Research Institute discussion paper 00992*
- Elizabeth Fischer, Matin Qaim. (2011).*Transformation of Global Agri-Food Systems: Trends, Driving Forces, and Implications for developing countries. Retrieved from www.uni-goettingen.de/globalfood*
- Ezeibe A.B.C,O,korji .E C,Chah J.M and Abudei R.N,(2014),*impact of entrepreneurship training on rural poultry farmers adoption of improved management in Enugu Nigeria:african journal of agricultural research,vol9(20)*

Fao ,2012,statistical year book, 2012

Farayola.C.O,Adeyemo.A.A,Nwachukwu .S.C and Yusuf.A,(2013),*extension strategy development and training needs for small scale commercial poultry farmers in Nigeria*, journal of world poultry Research 3(4):99-105,2013

Frankel.R.M and Devers.k.j, (2000), *Study design in qualitative research: developing questions and assessing resource need*

Gina Porter (2013). *Transport Services and their impact on poverty and growth in rural transport sub-saharan Africa. Africa community access programme (AFCAP)/Durham University.*

GOK, (2009), *building a globally competitive economy:kenya economy report by kenya institute for public policy research analysis 2009.*

GOK, (2010), agricultural sector development strategy 201-2020

GOK, (2012), *draft policy on aligning the roads subsector*, September, 2012

GOK, 2013, Economic survey 2013 highlights: ministry of planning and devolution.

Ghosh .J.K, Khan F.H and Datta .V, (2009).*Understanding the growth and prospects of Agro-processing Industries in West Bengal. Agro-economic research centre visva-Bharati Santiniketan Study No. 159.*

Gray, (2013), doing research in the real world.

Gwin, Lauren, Thiboumery, and Richard Stillman, (2013). *Local Meat and Poultry Processing: The Importance of Business Commitments for Long-Term Viability*, ERR-150, U.S. Department of Agriculture, Economic Research Service, June 2013

Henri-ukoha,A,C.Chikezie, Osuji, M.N,Ukoha, I.I (2013).*Rate of information communication Technology (ICT) use:Its determinants Among Livestock Farmers inUkwa West Lga,Abia State of Nigeria. International Journal of Agricultural and Food Science 2012; 2(2): 51-54 ISSN 2249-8516*

- Huang,J,Wang.X and Qui.H,(2012),*small scale farmer in china in the face of mordernisation and globolisation*, IIED/Hivos,London/The Hague
- Ibitoye.S.J and Onimisi.J.A, (2013). *Influence of Training on Farmer’s Productivity in Poultry Production in Kogi State, Nigeria. International Journal of Poultry Science* 12(40:239-244, 2013IDRC, (2013), 2013 call for concept notes.
- IFAD, (2009), *support to farmers organizations in Africa programme, pilot phase 2009-2012*
- Inoni O.E, Omotor D.G (2009), *effects of roads infrastructure on agricultural output and income of rural households*, agricultural tropica et subtropica Vol.42 (2)2009.
- KACE,2010,*Kenya agricultural commodities in linking small scale farmers to national and regional markets.*
- Kang’ethe F. Muiruri & Muturi.W, (2013).*Factors Affecting Eggs Supply Business in Kenya: A Survey of Thika West District. European Journal of Business and Social Sciences*, Vol. 2, No.4, pp 32-48, JULY 2013. P.P. 32 – 48 ISSN: 2235 -767X
- Katongole .C.B, et al, (2012).*Strategies for coping with feed scarcity among urban and peri-urban livestock farmers in Kampala, Uganda. Journal of Agriculture and Rural Development in the Tropics and Subtropics Vol. 113 No. 2 (2012) 165–174.*
- Kingori.A.M, Odero-waititu.J.A and Guliye .A.Y,(2011),*mathenge(prosopis juliflora):an under utilides livestock feed resource in Kenya*,research journal of Animal science5(4-6)2011 ISSN:1993-5269
- Kurt Sartorius and Johann Kirsten (2006). *Contracts and Contract Farming As Potential Mechanisms to Improve Market Access for Black Farmers in South Africa.Department of Agricultural Economics, Extension and Rural Development.*
- Kryger.K.N, Thomsen K.A,Whyte.M.A and Dissing.M, (2010). *Smallholder poultry production – livelihoods, food security and sociocultural significance. FAO Smallholder Poultry Production Paper No. 4. Rome.*

- Kwadwo .A and Mekonnen D.A,(2012).*The importance of ICTs in provision of Information for improving Agricultural Productivity and Rural incomes in Africa*.United Nations Development Programme working Paper 2012-015:January 2012
- Kyule N. M., Mwangi, J. G. & Nkurumwa, O. A. (2014). *Indigenous chicken marketing channels among small-scale farmers in Mau-Narok division of Nakuru County, Kenya*. *International Journal of Social Sciences and Entrepreneurship*, 1 (9), 55-65
- Llanto.G.M, (2012). *The Impact of Infrastructure on Agricultural Productivity*. Philippine Institute for Development Studies discussion paper series No 2012.
- MacDonald, James M. (2008). *The Economic Organization of U.S Broiler Production*, Economic Information Bulletin No. 38. Economic Research Service, U.S. Dept. of Agriculture
- MacDonald, James M. (2008). *The Economic Organization of U.S Broiler Production*, Economic Information Bulletin No. 38. Economic Research Service, U.S. Dept. of Agriculture.
- Mailu.S.K, et al,(2012),*influence on market participation decision of indigenous poultry farmers in fur districts of Eastern province ,Kenya*,journal of Agriculture and Social Research (JARS)Vol.12.No.1,2012
- Meena.H.R and Singh Y.P, (2013), *importance of information communication tools among livestock farmers*, *scientific journal of pure and applied science*, and 2013 2(2) 57-65, ICD: 109438 IDRC, (2013), *2013 call for concept notes*
- Mengesha .M,(2013), *Biophysical and the socio-economics of chicken production African* ,journal of Agricultural Research Vol. 8(18), pp. 1828-1836, ©2013 Academic Journals
- Minot .N, (2011). *Contract farming in Africa:Opportunities and Challenges*.A presentation at IFFRI policy seminar in Rwanda.
- Mohammad .S,Mohammad .A, Saburi.S and Fathul. K, (2011).*Analyzing Farm management skills in poultry Enterprises in Iran*. *Life Science Journal*, Issue 1, 2011.

- Mohanraj .R and Manivannan.L, (2013).*A study on Economic Profile And Financial Decision Of Poultry Farm Owner's with reference to Namakkal District, Tamilnadu.International Journal of Marketing and Technology:Issue No 2249-1058.Retrieved from <http://www.ijmra.us>*
- Mugenda,A.(2011).*Social sciences Research :Theory and principles. Nairobi ARTS press.*
- Mugenda .O.M (1999).*Research methods: Qualitative and Quantitative approaches.Nairobi:African Centre for Technology studies(ACTS) press*
- Murthy M and Madhuri B,(2013).*A case study on SugunaPoultry Production Through Contract Farming In Andhra Pradesh.Asia Pacific Journal of Marketing & Management Review ISSN 2319-2836 VOL.2(5) May (2013)Mrk*
- Muzari.W, Gatsi.W, Muvhunz.S. (2012). *The Impacts of Technology Adoption on Smallholder Agricultural Productivity in Sub-Saharan Africa:A Review. Journal of Sustainable Development; Vol. 5, No. 8; 2012 ISSN 1913-9063 E-ISSN 1913-9071*
- Ngore P.M, Mshenga P.M,Owuor G and Mutai B.K, (2011).*Socioeconomic Factors Influencing Meat Value Addition by Rural Agribusinesses in Kenya. Current Research Journal of Social Sciences.3 (6):453-464, 2011*
- Ng'ang'a S.I, Kiumbe P.M. and Kabethi J.M.(2013).*Technology adoption in Rural Areas for Sustainable Development.A presentation paper at Kabarak University University on 15th-18th October 2013.*
- Okello.J.J et al, (2010). *Value chain analysis of the Kenyan poultry industry:The case of Kiambu, Kilifi,Vihiga and Nakuru Disticts*
- Olaninyi,O.A (2013).*Assesment of utilization of information and communication technologies (ICTS) among poultry farmers in Nigeria:An Emerging challenge. Transnational Journal of Science and Technology June 2013 edition vol.3, No.6 ISSN 1857-8047*
- Oso and Onen,(2009),*General guide in writing Research proposal and report,2009*

- Owour. G and Bebe.B, (2009), *what influence prices efficiency in indigenous chicken farmers in Kenya.*
- Rajaniemi.M and Ahokas.J, (2012), *A case study of energy consumption measurement system in broiler production, agronomy Research Biosystem Engineering Special Issue 1, 195-204, 2012.*
- Rhodes J.L et al, (2011), *broiler production management for potential and existing growers. University of Maryland Extension poultry website, <http://www.mdchick.umd.edu/>*
- Roy.M. S and Radhakrishna.R.B,(2013).*Impact of Value Addition Training on Participants of Farmers Training Institute World Applied Sciences Journal 22 (10): 1401-1411, 2013 ISSN 1818-4952*
- Sanusi.M.A, petu-Ibikunle.A.M and Mshelial.C.M,(2010), *The influence of Information and Communication Technology (ICT) on the dissemination of agricultural information among Urban farmers in the Northern Guinea Savannah Zone of Nigeria: African Scientist Vol. 11, No. 2, June 30, 2010 1595-6881*
- Shimelles T,Zahidul.K.M, Parviainen.T,(2009) ,*effects of land tenure and property rights on agricultural productivity in Ethiopia,Namibia and Bangladesh, University of Helsinki,Department of Economics and Management,Discussion Papers n:o 33*
- Siekkinen.K,Heikkilä.J,Tammiranta.N and Rosengren.H, (2012), *Measuring the cost of Biosecurity on poultry farms; a case study in broiler production in Finland. Acta Veterinaria Scandinavica 2012 54:12.*
- Souza K.M.R et al, (2011).*Adding Value to the Meat of Spent Laying Hens Manufacturing Sausages with a Healthy Appeal Brazilian Journal of Poultry Science. ISSN 1516-635X Jan - Mar 2011 / v.13 / n.1 / 57-63.*
- Sridharan.A and Saravanana.R, (2013), *a study on motivating factors to enter into poultry farming with special reference to suguna broiler contract farms in coimbatore*

distrICT, International Journal of Marketing, Financial Services & Management Research ,Vol.2, No. 4.

The organic farmer, (2013), *the magazine for sustainable agriculture in East Africa*, No102
November, 2013

Udoh.A.J,(2010),*adoption of improved poultry technologies by poor resource farmers in Nigeria:implications to meat protein availability in the 21st century*, University of Uyo, Department of Agricultural Economics and Extension,Uyo 530002, Akwa, Ibom State, NigeriaAfrican Scientist Vol. 11, No. 2, June 30, 2010 1595-6881

Ugnu.D.S, (2009).*Baseline study of small and medium scale poultry production in Enugu and Lagos states of Nigeria*.*World Journal of Agricultural sciencies* (5):27-23, 2009.

USAID, (2010),*ict application for distribution and supply chain management in sub sahara africa agriculture:a briefing paper* .

Wainaina.P.W, Okello.J.J & Nzuma .J,(2012), *Impact of contract farming on small poultry farmers in income in Kenya*, Selected Paper prepared for presentation at the International Association of Agricultural Economists (IAAE) Triennial Conference, Foz do Iguaçu, Brazil, 18-24 August, 2012

Wekhe.S.N,Owen.O.J and Amadi.I.G (2012). *Evaluation of cost of medication of commercial broiler production in the tropics*. *Department of Animal Science, Faculty of Agriculture, Rivers State University of Science and Technology, P.M.B. 5080, Port Harcourt, Nigeria*. *Issue 12 (1): 220-224*. 2012

Yonatan Segal, (2011).*Farm Biosecurity for Better Performance and Higher Profit*. *Issue No.35*

APPENDICES

Appendix 1 Letter of Transmittal

Ng'ang'a Julius Maina

P.O Box 90292-80100

Mombasa

Cell phone 0726247744

To.....

.....

.....

Dear Sir/Madam,

REF: ACADEMIC RESEARCH

I am a student at the University of Nairobi currently pursuing Master's Degree in Project Planning and Management. As a prerequisite of the course, I am supposed to carry out a research project. To this effect therefore, I am conducting a research on the factors influencing implementation of poultry farming enterprises for economic empowerment of local communities in Mombasa County, Kenya .The information generated will be useful in improving poultry farming enterprises in the region. The information generated will be for public importance and where confidentiality is required, it will be maintained.

I am kindly requesting for your assistance by responding honestly to the questionnaire so as to assist in realization of this research.

Yours faithfully

Ng'ang'a Julius Maina

L50/60323/2013

Appendix 2: Data collection instrument –Questionnaire

Introduction and seeking Consent

Hello respondent, this instrument is designed to assist collection of data on factors influencing implementation of poultry farming enterprises for economic empowerment of local community in Mombasa County, Kenya .All data collected will be utilized only on academic purposes which is the main role of this study and whatever information you provide will be treated with total confidentiality. You are kindly requested to participate voluntarily in this study because of your experience and knowledge in area. I thank you in advance for taking your time to answer and record your insight on the subject.

PART A: BACKGROUND INFORMATION

1. Gender

Male	Female

2. Age in Years

Below 20 Years	20-30 Years	31-40 Years	41-50 Years	Over 50 years

3. Highest Education Level

Post Graduate	Graduate	Diploma/Certificate	Secondary	Primary

4. Number of years in poultry farming

Less than 1 year	2-5 years	More than 5 years

PART B: TECHNOLOGICAL SKILLS

		Strongly Agree=5	Agree=4	Weakly Agree=3	Disagree=2	Strongly Disagree=1
1	Training is important in implementation of poultry farming enterprises					
2	Knowledge and experience in poultry farming have great impact					

	on profitability					
<u>3</u>	New poultry farming technologies from research institutes are easily available					
<u>4</u>	If new technology is used by poultry entrepreneurs productivity will increase					
<u>5</u>	Improved communication between different stakeholders is essential in poultry farming					
<u>6</u>	Sms, twitter, facebook and other internet services improves provision of services to farmers					
PART C:MARKETING FACTORS						
		Strongly Agree=5	Agree=4	Weakly Agree=3	Disagree=2	Strongly Disagree=1
<u>7</u>	Market of poultry products is readily available					
<u>8</u>	Value addition of poultry products improves profitability of enterprises					
<u>9</u>	Formation of poultry products marketing groups by farmers can help improve returns from poultry farming					

10	Middlemen are making poultry farming less profitable					
11	By entering into a contract with a buyer of poultry products will make poultry farming more profitable					
12	Contracting buyers of poultry products are readily available					

PART C: PRODUCTION COSTS

		Strongly Agree=5	Agree=4	Weakly Agree=3	Disagree=2	Strongly Disagree=1
13	Prices of Poultry feeds are affordable					
14	Cost of poultry feeds can discourage expanding of your poultry enterprise					
15	If the prices of poultry feeds can be reduced you can make more profit					
16	Credit to finance poultry enterprises is readily available					
17	If credit is available you can expand your enterprise					
18	Poultry diseases reduce profits and pose a great					

	risk to poultry enterprises					
19	Good disease control is essential for profitable poultry enterprise					

PART D: LAND AND INFRASTRUCTURE

		Strongly Agree=5	Agree=4	Weakly Agree=3	Disagree=2	Strongly Disagree=1
20	You have enough land for expanding your poultry enterprise					
21	Land ownership is very essential in poultry farming					
22	Energy supply is essential for poultry enterprises					
23	Prices of power and energy affect profitability of poultry enterprise					
24	Transport connectivity is efficient in your area					
25	Goods roads are essential to poultry entrepreneurs					

Appendix 3: Data collection instrument-Key Informant Guide

Introduction and seeking Consent

Dear respondent, my name is Julius Maina .I am pursuing Masters in project planning and Management at the university of Nairobi and this instrument is designed to facilitate collection of data on Factors influencing implementation of poultry farming enterprises for economic empowerment in Mombasa County, Kenya. The information collected will be purely used for the purpose of this academic study.

You have been carefully selected to take part in this study because of your wealth of experience in this area and your response will be handled with highest confidentiality. I highly appreciate you for taking time to provide information on the subject.

Section A: General Information

1. Gender Male () Female ()

2. What is the name of your organization.....?

3. What is your Job designation in the organization.....?

Section B: Technological skills

4.Is training of poultry farming entrepreneurs important If yes or no explain briefly.....
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.....

5. In your opinion, is adopting new technologies in poultry farming important /If yes or no explain.....
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.....

6. (A) Is ICTs use in poultry farming necessary/explain
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.....

(b)Which are the commonest ICTs being used by poultry farmers in your area
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.....

Section C: Marketing Factors

7.(a).In your opinion, do you think value adding poultry products will lead to improved productivity of poultry farming enterprises in Mombasa County./explain

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.....

(b)Are poultry farming entrepreneurs adding value to their products in your area.....

8.(a)Are poultry farmers able to access market with good returns of their products, explain.....

.....

..... (b) Do you think contracting with poultry processors/marketer is necessary/

(c) What could be done to improve access to profitable market?

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.....

Section D: Cost of Production

9. How does the cost of feeds affect poultry farming enterprises?

10. (a) Do you think access to credit is important in financing poultry farming enterprises/ Explain

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(b)Are poultry farmers able to access credit facilities, if no explain some of the reasons.....

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Section E: Infrastructures

Explain how the following affect productivity of poultry farming enterprises

(a) Land size

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(b) Land ownership

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(c) Availability of energy

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(d) Availability of Transport services

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