ECONOMIC ANALYSIS OF SMALL-SCALE POULTRY PRODUCTION IN DODOMA REGION: A CASE OF CHAWAKUBODO COOPERATIVE SOCIETY

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MASTERS OF ARTS IN ECONOMICS

THE UNIVERSITY OF DODOMA

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BY

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A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN ECONOMICS

THE UNIVERSITY OF DODOMA

DECEMBER, 2020

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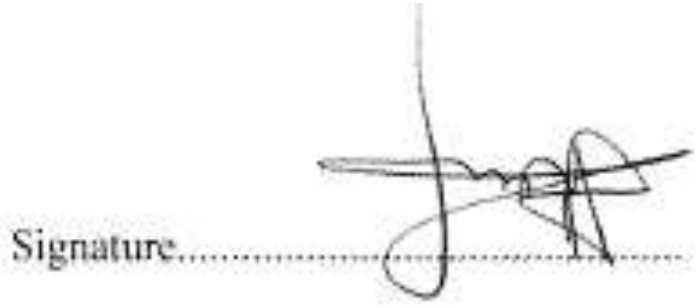
I, **Jackson Wiliam,** declare that this dissertation is my original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.



CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by the University of Dodoma a dissertation entitled ***"Economic Analysis of Small-Scale Poultry Production. A Case Study of CHAWAKUBODO Cooperative Society in Dodoma Region,"*** in partial fulfilment of the requirements for the degree of Master of arts in education of the University of Dodoma.

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Dr. WILLIAM GEORGE

(Supervisor)

Date: 05/12/2020

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DEDICATION

I dedicate this work to my parents for their endless moral support, encouragement, guidance, patience and financial assistance towards my academic endeavour. Besides, my family member for their love, care and their tireless effort which have contributed much on my education achievement and career goal,.

ABSTRACT

Agriculture is one of the major economic activities in Tanzania. The sector links crops cultivation, forest, fishing and livestock production. Livestock contributes seven percent of the total Gross Domestic Product and poultry production contributes 1.8% only. Poultry farming present an interested case and continue to play an important role in the context of food demand resulted by high population and mounting land constraint. On the other hand, Poultry sector is still underutilized; the government identified various challenges facing the sector and revealed some measures which have been taken in order to curb the prevailing obstacles. However, the sector in large extent remains subsistence consumption and most of farmers produce traditionally which made the sector to remain in small-scale system. The main objective of this study was to find out the economic analysis in terms of costs and return of small-scale poultry production in CHAWAKUBODO cooperative society in Dodoma city. Cross-sectional design was used with sample size of 200 of small-scale producers who were members of CHAWAKUBODO. Descriptive Gross-margin and Pearson`s correlation analysis were used for data analysis. The study found that most of the farmers (66.92%) were women with average age of 46.45 who spent 6.83 years in poultry farming and they have primary education level (57.14%). On average family size were seven members and average flock size of 611 stocks of birds with minimum 109 and maximum 2500 number of birds. Gross-Margin analysis showed that all farmers gained profit on average1586065 Tanzania shillings range from minimum of 180000Tanzania shillings to the maximum of 576000Tanzania shillings. Also the interaction between social and economic factors is important to the production since it has various influence levels in profit. Also, multiple response shown costs of feed and outbreak of diseases were the major constraints facing poultry production in study area. One of the key observations related to the study at hand is that poultry production is profitable among small-scale farmers. Hence, there is the need to support these sectors especially by the government toward the growth of the poultry sector notably through financial institutions, external services such as veterinary services, control of quality of drags and vaccination services.

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LIST OF ABBREVIATION

ANOVA	Analysis Of Variance
CHAWAKUBODO	Chama Cha Wafugaji Wa Kuku Bora Dodoma
CVI	Content Validity index
DOCs	Day Old Chicks
FAO	Food and Agriculture Organization
FC	Feed Cost
GDP	Gross Domestic Product
GM	Gross Margin
KI	Key Informant
TLMI	Tanzania Livestock Modernization Initiative
TR	Total Revenue
TSHs	Tanzania Shillings
TVC	Total Variable Cost
URT	United Republic of Tanzania
UDOM	University of Dodoma
VAT	Value Added Tax

CHAPTER ONE
INTRODUCTION

1.1 Background of the study

Agriculture is the one of the major pillar of the Tanzania`s economy. Livestock farming is a part and parcel of the national economy that contributes much on agricultural sector in Tanzania (URT, 2018). Despite the fact that livestock seems to have a major contribution to the economy but the sector contributes only seven percent to the gross domestic product(GDP), and poultry as integral part of the livestock contribute only 1.8%(URT, 2018). According to Wanjingu(2006) world poultry flock has been approximately 16.2 billion with 71.6 % in developing countries. In Africa traditional poultry system (indigenous poultry) contributes 70 percent of the total poultry products and 20 % of the total animal proteins intake (Wanjingu (2006)as cited from kitaly *et al*,. (2002)).In Tanzania poultry is mainly conducted in rural areas with 97% of poultry breeders raising indigenous chickens and only three percent breeders raising modern poultry and it approximately that there are 59 million chickens in Tanzania, 75%are local chickens and 25% are improved chickens with 8 million layers and 15 million broilers and dominated mainly by small-scale production system(URT, 2016). Tanzania ranks third in livestock production amongst sub-Saharan African countries; but the sector contributes below its potential to the economic growth is due to the fact that the sector was not well managed hence led to insiginificant economic impact (Msami, 2007) .Poultry farming presents an interesting case, which might continue to be important and feasible in the context of increased demand for food by rising urban populations, mounting land constraints for more extensive urban agricultural production, and the dietary shift towards white meat consumption (Kingori, Wachira, & Tuitoek, 2010; Kearney, 2010).At the same time poultry production requires smaller space and less investment and gives faster returns than large livestock (Omiti & Okuthe, 2009).Despite the provision of food and income, poultry serves various social cultural functions that have potential role to the social welfare in reduce the burden of vulnerability to the poor families(Kryger *et al*., 2010).

Despite the growth of non-agricultural activities in urban areas poultry stand asa major activity conducted by many urban poor majorities for generation of income.

Therefore, poultry is a profitable activity and eventually a way of improving livelihood and poverty reduction (Gawande, Barua, Saharia, & Kalita, 2007),(Dolberg, 2007), (Dei, Alidu, & Otchere, 2009). According to Sonaiya (2007), chicken contributes substantially to urban family income through empowering women financially and improves nutritional status of children through intake of meat and eggs (Bukwelles, 2015). The poultry enterprises provide farming households with both animal proteins.(Kryger, Thomsen, & Dissing, 2010). Besides, proteins have been reported to be essential for young children growth.(Chege, Andersson, & Qaim, 2015). Also, it has been reported that animal proteins are more important for reproductive process than vegetable proteins. Hence, the importance of poultry sector in Tanzania is to reduce food insecurity and to contribute in both households and national income by 18.2% near USD 325 million from 2017 to 2022 (Silva, Desta, & Stepleton, 2017). As part of national plans to ensure food security, the government of Tanzania provided incentives in both rural and urban farming through cooperatives societies with poultry production inputs especially, feeds veterinary services as well as sources of market. This implies that the government considers urban poultry farming as a viable economic activity. Based on this study at hand has much focus on investigation of the economic benefits and feasibility of poultry production using sampling unit of 200 members of Chawakubodo cooperative society as a case study in Dodoma city.

1.2 Brief History CHAWAKUBODO Co-operative Society

CHAWAKUBODO Co-operative Society is among of the associations that founded in Dodoma region. It was established in 2018 with 70 members and by the mid of 2020, a cooperative had 200 members who raised chicken to the Dodoma city council. The principal goal of CHAWAKUBODO was to organize and mobilize small-scale poultry keepers in order to raise and improve the life conditions socially and economically of small-scale producers by selling poultry collectively. The objectives of association are; to have a strong associations in Dodoma region which has its own independent capital and to improve the living standard of its members in 2025;to provide adequate services to its members by equipping them with the ability skills competence and knowledge of the commercial poultry, to become producers of eminent chicken, eggs, and other product resulting from chicken in a sustainable way

so as to increase its income and improve the lives of its members economically and socially.

1.3 Problem Statement and Justification

There is high demand of chicken in urban areas especially growing towns and cities, notably, Dodoma due to the reallocation of government headquarters, poultry become potential economic activity in the country for both income and poverty reduction (Bukwelles, 2015). In Tanzania about 40% of the farmers households are involved in livestock-keeping and contributes 5.9% of the country GDP (URT, 2011; Ciamara *et al.*, 2011). The national panel data survey of 2012/13 reveals that 50% of households keep livestock (4.6 million) households 62% are in rural and 23% urban which dominated by chickens (86%) other livestock 10% (TLMI, 2015).

Despite the presence of different chicken species, it has become increasingly difficult for poultry producers to sale their products in some of the local market especially big outlets and foreign market. This is due to the traditional breeding system practiced by many farmers and thus failed to meet the standard set by those market (Mangesho, 2016).The issues of the enterprises make it very tough for expansion and new producers discover it's very difficult to start a poultry enterprise and the demand has no longer matched by the way of supply. However, there is a claim that poultry business is not profitable because the expenses incurred in production may be too high to the firms to get profits (Esiobu *et al.,* 2014).This study focused on poultry farming by analyzing the financial feasibility of poultry farming and the factors that affect its profitability. This is based on the motive that money earned from poultry farming activities can be channeled to household food needs and other expenses (Chege, Andersson, & Qaim, 2015).

1.4 Objectives of the Study

1.4.1 General objective

The main objective of this study was found out the economic analysis of small-scale poultry production in Dodoma City.

1.4.2 Specific objectives

i. To analyze the social-economic characteristics of poultry producers in the study area.
ii. To determine the profitability in terms of costs and returns of poultry production in the study area.
iii. To indentify the influence of social-economic factors on profitability of small-scale poultry farmers.
iv. To explore the constraints that affects poultry production in study area.

1.5 Research Questions

i. What are the social economic characteristics of poultry producers?
ii. What is the profitability of poultry production?
iii. What are the social-economicfactors that affect profit of small- scale farmers?
iv. What are constraints that affect poultry production?

1.6 Significance of the study

The study at hand might promote and create awareness on poultry production to the breeders to use modern ways in keeping so that they can meet the necessary requirement in both domestic and foreign market for their own development and national economic growth. Also, it provides advice and encouragement to the youth and women so that they can invest in poultry production to alleviate the current unemployment problem. The study results avail career information to prospective students of management studies. The results might enrich research knowledge on poultry farming and enable easy access for students at college and University levels to nurture their careers, by giving them relevant and current information. The results might serve as reliable information to prospective farmers about challenges faced by the poultry industry and this should influence proper planning for the future. The results were also expected to influence the Government of Tanzania to make some policy changes regarding market regulations, for the poultry industry to grow. Lastly, the study improved on the skills, knowledge and academic qualification of the researcher.

1.7 Scope of the study

1.7.1 Geographical scope

The study specifically focused to cover small-scale poultry producers amongst CHAWAKUBODO members in Dodoma city. The choice has been done owing to the fact that Dodoma is among of the growing city in the country in all aspect such as demographically economically and socially, so the move come in the response to the increased demand for consumption of chicken in the region caused by reallocation of the government headquarters in Dodoma region.

1.7.2 Contextual scope

The study focused on the economic analysis of small-scale poultry production amongst CHAWAKUBODO members in Dodoma. It assessed the costs and return, social-economic characteristics among small-scale farmers, factors that affect profitability and constraints facing poultry production in study area.

1.7.3 Time scope

This study was carried-out between December 2019 and Desember 2020 from proposal presentation to submission of final report.

1.8 Chapter Summary

The chapter has presented general introduction of the study pertaining to the Economic Analysis of Small-Scale Poultry Production in Dodoma Region. It has also delineated on the background of information of the study, statement of the problem research objectives and research questions. Furthermore, the chapter has confined itself with the significance of the study and scope of the study.

CHAPTER TWO

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1 Literature Review

This section presents the literature on the basic issues related to the study, the research gap, and the conceptual framework related to the Economic Analysis of Small-Scale Poultry Production in Dodoma Region

2.1.1Definitions of key terms

2.1.2Poultry Farming

This is a form of animal husbandry that raises domestic birds such as chickens, geese ducks, and turkeys to produce meat and eggs. Chicken form a large numbers of poultry production(Sonaiya, 2005).Poultry production in Tanzania includes both commercial (broilers and layers) and conventional systems based on indigenous breeds, as well as improved, dual purpose breeds mainly kept in a free range system. Commercial poultry processing is practiced primarily in urban and outlying areas, The traditional production of poultry is the largest, contributing about 70% of the flock and providing the bulk of poultry meat and eggs consumed in rural areas and 20% in urban areas(Nduthu 2015).

2.2 Theoretical framework

2.2.1 Production Theory

Production theory was put forward by Wicksteed (1894) as the first economist who formulate functional relationship between inputs and output; however others proposing Thunen (1840s) was the first formulated algebraically relationship between inputs and output. The theory helps to determine casual relationship between output and inputs during production processes. According to Mishra (2007) production process is based on two major economic concepts technical and allocation efficiency. Under this study derivation of production function assumed the problem of technical efficiency were covered, therefore analysis were focused on the allocative efficiency. Then a production theory defined as a fundamental physical relationship between maximum feasible outputs and input that used to produce that output, Mishra (2007). Therefore, in poultry production output may be changed by changing all factors that facilitate production in the same proportion and direction

especially if feed is excessively applied in relation to other inputs like vaccination drugs and heating productivity will be increased.

2.2.2 Cost theory

In economics perspective in order to get something requires to use something else that can be determined in term of monetary value(Davenport, 1905). Cost is any expenses incurred by farmer to produce a certain level of output, under this study cost were assumed as all monetary value that a farmer purchased to produce output. Production decision depends on the level of cost(Safa, 2005). Costs are more controllable factors in production than any factor also the cost of inputs and other facilities determine the size of production(Lwoga et al., 2011). As costs of feed become high then the farmers may reduce number of birds rearing (Sonaiya, 2007). In deriving of factors affecting poultry farming cost theory provide framework in understanding cost function. The cost calculation under this study can be divided into two categories. Paid costs- involves all costs that farmers incurred and paid cash during production activities especially direct payment on inputs or services and they vary depending on the production size such as cost of feeds, cost of drugs added to the feeds, vaccination costs in control diseases, lighting costs in controlling housing temperature, labor costs, transport costs covers all expenses of caring row materials and products, and storing costs. Also, calculated costs were checked but they were not included into the analysis because they were fixed and could not vary notably, purchased equipments, drinking feeders, family labor and costs of construction.

2.3 Conceptual framework

In order to make relationship between cost and return as main objective of the study two approaches were used to construct conceptual framework production and cost approaches i.e. Return depends on the level of production and costs that used during production likewise production depends on the level of costs of inputs . In real sense, poultry farmers have varieties of objectives ranging to achieving a certain level of output that maximize the profit. In achieving this, production must reach high yield level under a given level of raw materials (input) because profit depends on the level of output prizes. To ensure achieving of high yield level (outputs) they can use the theory of cost minimization and profit maximization the farmers can set out to maximize outputs subject to set of input constraints as defined in production

function, then the farmers can derive their utility from the level of outputs (meat & eggs) produced subject to the input combination and social-economics factors.

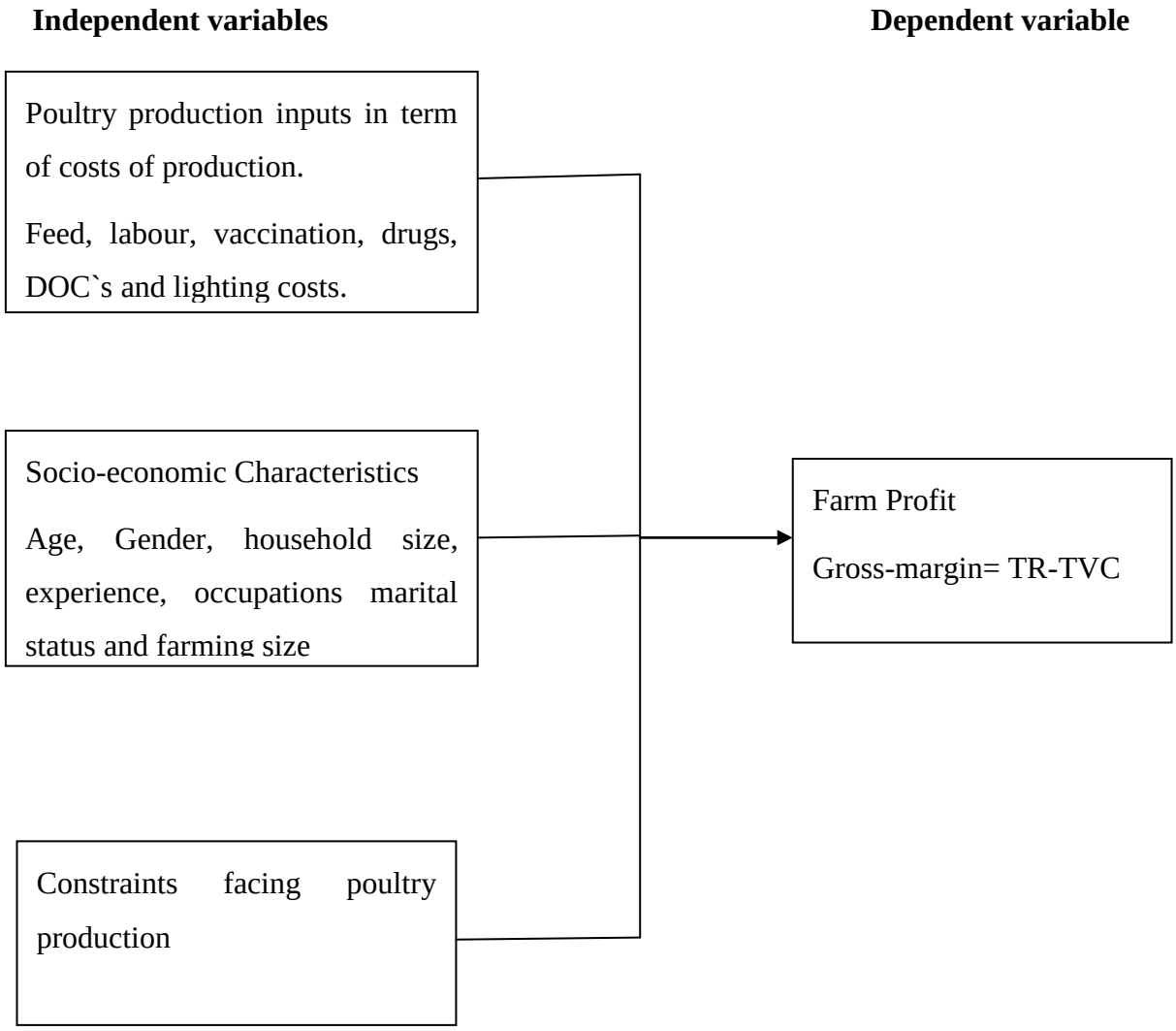

Figure 2.1: Conceptual Framework

Source: Researchers' owns construct, 2020

2.4 Empirical literature review

Empirical evidence shows that rich farmers who are also connected to the market benefit more than poor small-scale farmers. Hoobs and Young (2000) proposed that value chain has importance implication for small-scale farmers in developing countries. Small-scale poultry keepers in Tanzania depend only on local market of the small-operation(Peter, 2015).According to the Baba (2007) return of poultry investment range between 11.5% and its increasing depend on the expansion of enterprises up to 20% (Mehta and Nambia, 2007) estimate the share of profit

between stakeholders and revealed profit share between stakeholders limit expansion of poultry enterprises, the result showed that 47% of the value of products in the market earned by middleman followed by retailers earned 25% and the remained percentage earned by respectively producers. Packaging and grading of poultry products also its problems that led to the share of profit between producers and other middleman therefore producers were not getting return according to the value of products (Islam 2003).

Cost of feeds also affecting the profit margin, feeds accounting as a major sources of production costs in all level of farm size other costs are price of day old chicks, labor, vaccines and drags costs the costs decreasing in respect to the farm size then the high profit obtained by large farm size due to the efficiency in production (Emma and Hassan, 2010).Also, design and conducting that affecting majority of people concern with poultry production is difficult because of the low level of understanding in both production and marketing system (Pedersen,2007).Hence, the existed marketing opportunities affect the level of poultry investment in terms of technology then small farmers tend to ignore the adoption of new technology even appear better than existed ones due to the cost of respective technology (Gausi et al., 2004). Due to the low access of formal jobs in Tanzania poultry project and program provides an alternatives means of employment opportunities to the local people to lower malnutrition and poverty reduction in both rural and urban also provide incentives for the growth of subsidiary industries like feed industries processing industries equipment and pharmaceuticals (Shiraz, 2008). It's difficult to estimate poultry economic value in Tanzania due to poor access of proper management and production data (Msami, 2007). According to Chingonikaya and Salehe (2018) local chicken contributes to household well-being due to 92.2% of participants used some amounts of local chicken earnings for food. This implies that chicken keeping contribute to the food security at the households level of the chicken keepers.

2.4.1 Financial Feasibility of Poultry Farming

Livestock production has great function on population growth and urbanization. Due to the shortage of grazing land which limit other livestock activities many farmers are opted to the poultry production(Sindiyo & Missanga, 2018).Hence, poultry is the fastest growing element of global meat production trade and consumption. Also,

poultry production is a convenient livestock for subsistence family and small-scale farmers (Natukunda, 2013). Furthermore; it provides incentives on developing transition and expansion of economies (Simon, 2005). Moreover, poultry generates global stream opportunities for investment in export and import of feeds and other inputs. Poultry meat export increased by eight times between 1961-2001 while middle-income countries is more than twelve times (Regmi, 2001). The objectives of reducing unemployment and poverty in Tanzania cannot be achieved by one economic sector because there is no single activity with major impact. Basing on this ground, livestock improvement especially on poultry sector is needed since poultry have revealed contribution on its financial feasibilities in the elevating in both poverty and unemployment level due to its renewable asset(Simon, 2005).Poultry rearing is feasible in village level with low initial cost, low investment is needed for improvement of production, landless is not issue use local available resources and requiring low inputs(Upton 2004) and its essential point of reduce gender inequality, literatures revealed that in developing countries many families in both rural and urban level poor and landless people manage to own poultry and the higher percent is dominated by women (Alders & Pym, 2009).

2.4.2 Factors affecting poultry farming

Tanzania is a third richest country in poultry production among African countries. This implies that poultry is a reliable sub-sector to the national income(URT, 2016).However, the overall contribution of the sector is relative small to the GDP, this is because the level of production is sub-optimal and products are sub-standard (World Bank, 2018). L-MIRA report revealed that despite the fact that there is element of commercial poultry producers but production is still subsistence based with low production level where by commercial poultry farm produce 235 eggs per hen below the target levels of 280-300 per hen. Also, the number of chicken range 2000 broilers and 500 layers(URT,2018).This prevailing situation occurs despite the awareness of major agricultural constraints and implication of strategies that transforming agriculture from substance activity to the commercial sector. Nevertheless, poultry has been growing slow and many farmers depend on small scale and subsistence farming(FAO, 2004).This implies that the growing of the poultry sector is not exploited maximally of its potential in accordance with existed

processing and marketing in production system in term of packaging and grading Ismail (2003). Also, poultry production depends on technology, but the adaptation of technology by farmers depends on cost of respective technology and market situation whereby many breeders rely on existing technology although new technology is better than the former one (Gausi et al., 2004).Similarly, in supporting the idea Pederson (2002) argues that establishing of production that benefit majority depends on production system and market situation. Hence, the less influence of poultry to the GDP is due to the high cost of feed caused by Value Added Tax .Basing on this ground, many poultry keeper failed to adopt with this situation hence stop production at large scale. Also, low government initiatives in the context of diseases control and research of poultry. In addition, individual perception is a limitation since most of Tanzanians believe that poultry products are luxury based goods mainly consumed during holidays as a result affects market. The study at hand strived to determine observable factors that affect productivity especially inputs like feeds technologies (methods, skills, and processes) and other facilities that used by the farmers during production.

2.4.3 Social-Economic characteristics

This is the situation that involves combination of social and economic factors. Therefore, the interaction can influence all factors that affect individual attitudes interests and option toward transforming input, generally production system. Socio-economic factors are key factors of success on management of production for enterprise profitably(Baliyan, 2017). Weak management of production can lead economic inefficient. In this study various social factors are considered notably, Age, gender, occupation, marital status, education level, farm size, experience, household size, and other factors influences in access financial services, that directly affecting production system. Production system depends on social factors mainly in adaptation of technology influenced by education and trainings (lanre 2006).In addition, division of labor depends on gender and age(Safa, 2005). Farmers cannot achieve successfully agriculture enterprises without knowledge that could lead adoption of technology and access of trainings,(Nduthu2015).

2.5 Review of Analytical techniques

Baliyan (2017) used cross-sectional data from 60 broiler farmers, to study "Socio-Economic Factors as Determinants of Farm Management Skills among Broiler Farmers in Botswana". The analysis of variance (ANOVA) as analytical technique was used to determine the influence of socio-economic factors and post hot analysis also was used to determine the influence in each level of the variable to the farm management skills. The findings revealed that all socio-economic variables have significant influence on farmer management skills. This also was used by (Ogalo, 2016) to study "Factors Influence Poultry Production in Eldoreti Town Kenya". This technique was also adopted in this study to analyze the influence of socio-economic factors to the profitability among small-scale farmers in a study area.

Omondi (2018) carried a study in the Kisumu and Thika cities of Kenya the gross-margin was used as analytical tool to find out economic feasibility of 160 small-scale poultry producers. The findings showed that urban poultry production is profitable and important for food security. Gad., *et al*(2015) also were used gross-margin analysis to identify factor affect the performance of small and media of poultry production in Karuri Kenya. Rodica, (2012) used Goss-margin as analytical tool in analysis of poultry production. This study also adopted gross-margin analysis to determine profitability of poultry farming in a selected area.

2.6 Chapter summary

This chapter has entailed information on the on poultry production and it has been divided into three sections. The first section was the theoretical literature review whereby different related theories and concepts on poultry have been discussed. The second section delineated the conceptual frame work that showed the relationship of dependent and independent variables. The lastly section dealt with the empirical literature review whereby different related researches, Journal article and reports have been discussed from global to specific country and area of study as the empirical evidences of the existence of the problem.

CHAPTER THREE
METHODOLOGY

This chapter presents the procedures on how research questions were answered. It composed area of the study,research design,sample and sampling procedures and methods of data analysis. This section also reveals type of data and methods that were used during data collections as well as targeted population.

3.1 Description of the study area

This study was done in Dodoma urban the capital city of Tanzania. According to 2012 census the city has 410956 of the total population. The choice of the study area is based on the fact that the city is growing faster due to the reallocation of the government headquarters resulted to the high demand for consumption of chicken in the region. Also, as a matter of fact the presence of adequate infrastructures which supports other services including the market for poultry products notably, chickens and other agricultural products. Thus, Dodoma region was an appropriate place for the study in hand due to long history in Tanzania as a central region. Besides, the researcher believed that presence of various ministries in town including ministry of Agriculture are the factor that contributes the quality of various agricultural products including chicken poultry.

3.2 Research design

The study employed a cross-sectional exploratory design. Basing on the nature of data that combined multiple variables and gathered at single point of time as well as information obtained in the field that varied with social economic characteristics. The description and analysis of the data was done effectively by using cross-sectional research design (Bailey, 1994)..

3.3 Sample Size and Sampling procedures

3.3.1 Population

The targeted population of this study was all 200 small-scale poultry producers who are members of CHAWAKUBODO in Dodoma urban and other participants who work closely with poultry farmers like veterinaries agricultural and livestock officers as well as external such as extension officers and development stakeholders.

3.3.2 Sampling frame

The sampling frames that was used were the list of small-scale poultry producers in CHAWAKUBODO COOPERATIVE society

3.3.3 Sampling unit

The sampling unit was small-scale poultry farmer in CHAWAKUBODO COOPERATIVE society.

3.3.4 Sample Size

Sample size was estimated by using Yamane formula since study deals with finite population, from list of 200 farm members of CHAWAKUBODO a sample of 133 was selected as computed below.

$$n = \frac{N}{1 + Ne^2}$$

n=sample size determined,

N=finite population,

e=marginal error,

Therefore: N=200 $e = 0.05$

Then $n = \frac{200}{1+200\,(0.05^2)}$

n=133.333 ≈ 133

Therefore the sample size of this study was 133 respondents.

3.3.5 Sampling procedure

The multiple sampling procedure were used whereby it involved a purposive sampling technique for the identification of sample frame and key informants which is non-probability sampling technique, while simple random sampling was also used as a type of probability sampling so as to obtain suitable information from respondents to the study. Each individual has equal chance to be selected (Onen, 2009).

3.4 Methods of data collection and instruments

In this study multiple methods were used during data collection so as to minimize the weakness of using one method to collect information from respondents. Interview, observations as well as Documentary review were used for gathering relevant data of the study.

3.4.1 Observation Method

This is a method of data collection in which information is gathered direct to the field without asking from respondents. This method was suitable in this study in fact that its easily to obtain information from respondent who are not capable of giving report of their feeling for one reason or the other(Kothari, 2006),

3.4.2 Interview Method

This study used interviews on face-to-face basis. During interview data collected using semi-structured questionnaires that comprised both open-ended and closed-ended questions. The instrument was used to collect data from the selected participants; under this study the interview covered key informants and respondents who are poultry farmers in CHAWAKUBODO cooperative society.

3.4.3 Documentary Review

A documentary review technique revised various reports prepared by the department of livestock and Agriculture in Dodoma city Council, journals from internet, UDOM library documents and other related materials to the study. Documentary guide or checklist was used in reviewing the literature, as sources of secondary data for referencing.

3.5 Data management procedures

A process of administrative data which ensure acquiring validating protecting storing and processing required data to enhance accessibility timelines and reliability of data. This study employed data obtained from the field of study in a specific time frame processing by using appropriately descriptive and inferential statistics through statistical package for reliable and coding by ms-excel for access.

3.5.1 Data processing

Data editing, both ms-excel and ms-word were used in coding tabulation and report writing to enhance the integrity and utility of the data.

3.5.2 Data analysis

This study used both descriptive and inferential statistical procedures to analyze data for qualitative and quantitative data to address the three specific objectives of the study. Data analysis refers to the strategies that a researcher intends to use after data collection. It specifies the statistical procedures that will be used to analyzing data.(kumar, 2011). Also, it is a computation of specific measure with searching for relationship that exists among the group data (Kothar, 2004).

The data were analyzed using descriptive statistics such as means, standard deviation, percentages to analyze social economic characteristics of poultry producers (specific objective one)

Enterprise budget were used to analyze the financial feasibility and profitability of poultry production to small-scale producers (specific objective two)

Enterprise budget involved the determination of Gross Margin (GM) as presented in Equation 1;

$$GM = TR - TVC \ldots\ldots\ldots\ldots 1$$

Where: GM = gross margin, TR = total Revenue, TVC = total variable cost

GM is an appropriate measure of profits for short-run planning decisions.

GM > 0, then poultry enterprise is considering profitable undertaking.

Gross margin analysis

It's difficult to measure household utility, farm profit always used as a proxy for welfare, Barrett et al (2012). This study employed Gross-margin to measure farm profitability. This also used by Omondi *et al,* (2017) in economic analysis of urban poultry production in Kisumu and Thika. Gross margin is computable as one among of the economic method of analyzing profitability of agriculture production. It

provides significant information that facilitates appropriate decision making under a certain farm condition the information used to calculate the value of total production and costs that meet production period from the first day of production up to maturity. Under the study gross margin was calculated per number of chicken meat and eggs in total market value and direct costs. Direct costs were costs that vary direct with the change of production size (feeds cost, lighting, drags, vaccination, storing, transport, labor costs). Fixed cost like depreciation, cost of contracting housing, and other costs that cannot vary and computed in daily operation were not included in calculation of Gross Margin. On transport costs most of the farmers used their labor and was not counted as variable costs, also most of the farmers have little interest on value added then processing costs was uncounted in this study.

Table 1: Variables description and unit of measurement

Variable	Description	Measurement unit
Profit (Y)	Computed by Gross-margin; different between total revenue and total variable costs.	TSHs
Feed costs (Fc)	All costs of diets intake by chicken to produce eggs and meats.	TSHs
DOCs costs(DOCs)	Costs of day old chicks as sources of production capital.	TSHs
Drug costs (dcs)	Costs of all supplements' used by farmers in term of liquid or pill to adding nutrients or treating water to control diseases or surrounding environment.	TSHs
Vaccination costs (Vc)	All costs incurred by farmers to produce immunity against diseases.	TSHs
Labor costs(Wc)	All costs paid to employees	TSHs
Lighting costs(Lc)	All costs associated with control temperature and humidity in housing	TSHs

To determine the influence of social-economic factors on the poultry profitability among small-scale farmers, Analysis of variance (ANOVA) and t-test were used to determine the influence of socio-economic factors on the level profit(specific objective three). The influence of gender was analyzed by t-test because of the nature of data while for continuous variables such as age, education level, occupation, family size and experience of respondents', one-way analysis of variance was used to analyze their influence on farm profit. The Gross-margin was used as dependent

variable while socio-economic status of respondents was treated as independent variables. Least Square Post Hoc Analysis was employed in determination the influence in each level of socio-economic variables

Summary of multiple responses were used to identify constraints faced poultry production in study area (specific objective four).

3.6 Data presentation

The set of facts obtained from the field of study were presented by using a textual, tabular and graphical form, text providing contextual information and explaining findings, table representing quantitative and qualitative information while graph is used for vital information in the report.

3.7 Validity and reliability of the study

3.7.1 Validity

Validity determines to measure what is supposed to be measured. This implies that in the data collection process, the researcher collects what is supposed to be collected from the field area (Veal, 1997). To ensure the validity, the study reviewed pre-tested the tools for data before going to the field. Also a researcher pre-tested the tools for data before going to the field. Also the study ensured validity through content validity index from three experts (Veterinaries and researcher) and calculated CVI by using formula based on their judgements.

CVI=Number of items rated /Total number of items in the instrument

Questionnaire results

1^{st} expert= 20/25=0.8, 2^{nd} expert= 22/25=0.88, 3^{rd}expert= 24/25=0.96.

CVI for 3 experts= (0.8 +0.88 +0.96)/3=2.64/3=0.88

Since CVI=0.88 greater than 0.7 the instrument used is valid (Amin, 2005).

3.7.2 Reliability

Reliability is about the consistency of a research (Alwin, 2007). In the study at hand, the researcher made a pilot survey in order to study the phenomena, ethnography of the informants and the accessibility of the area. Questionnaires were distributed to three experts for scrutiny so as to eliminate ambiguity of the items included in the

instruments. Also the researcher consulted the supervisor about the applicability of the method selected, and other knowledgeable research instructors. Furthermore, the researcher adhered to a time frame and budget of the study in order to collect the reliable data within the scheduled setting.

3.8 Ethical consideration

Ethical refers to the methods procedures or perspectives for deciding how to act and for analysis of complex problem or issue (Kothari, 2006). Ethical issues should be considered when dealing with sample in a study (Halai, 2006).In conducting the study, research ethics were completely observed. The researcher inquired the permission letter from the University of Dodoma so as to be allowed to conduct a research in Dodoma region. The researcher was responsible for both informing and protecting respondents. All information from respondents was confidential. The research process involved enlisting voluntary cooperation. The researcher made sure that participants were informed about the study's purpose**.** Also, in some circumstances, the respondents were free to withdraw from the study at any stage.

3.9 Chapter Summary

This chapter covered the methodology of the study. It has indicated research design, research approach and area of the study. Also, target populations of the study, sample size and methods of data collection have been presented in the chapter. Also, data analysis procedures, validity and reliability of the study have been presented in this chapter.

CHAPTER FOUR

RESEARCH FINDINGS, ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter presents analysis and presentation of research findings in relation to the purpose of study. The analyzed information was obtained by using questionnaire, interview and observation from the area of study where by the analysis and discussion was based on research questions. The chapter begins by providing social-economic information of the respondents and further goes to interpretation and presentation of the analyzed data.

4.2 Social and economic characteristics of respondents

4.2.1Gender of Respondents

Information was obtained from different characteristics of respondents whereby 66.92%t of respondents were women and 33.08% were men. Most of the farmers were women; this implies that most of the owner of poultry enterprises was female than male. Also female prefers to conduct poultry farming than male because a selected area is far from agricultural environment hence male involves themselves to the other economic activities than poultry farming. This also conforms to other studies done by various scholars(Omondi,2018)Chingonikaya & Salehe, 2018).

Table 2: Gender of respondents

Gender	Freq	Percentage
Female	89	66.92
Male	44	33.08
Total	133	100

4.2.2 Age of respondents

Table 2reveals that 3.76% of the respondent range between 21-30 years, 31.80% of the respondent range between 31-40 years,42.11% of the respondent range between 41-50 yeas,29.32% of the respondent range between51-60 years and 3.01% of the respondent range between 61-70 years. This implies that the group range between 41-50 years were more raised poultry than other group. An average farmer who has 46.45 years of active life age helps to gain experience to the farmers. The researcher

expected more aged would lead more experience, this conformed to the findings of Onuk et al, (2017) who reported that majority of the poultry farmers have prime age between 30-40 aged years

Table 3: Age of respondents

Age years	Freq	Percentage
21-30	5	3.76
31-40	29	21.8
41-50	56	42.11
51-60	39	29.32
61-70	4	3.01
Total	133	100

4.2.1.3 Marital status

Information recorded on whether respondent married, single, divorced or widowed as an option that describe a person`s relationship with other. Table 4 indicated that 69.17% (92) of respondents were married followed by widow or widower 24.81%. This implies that most of poultry businesses are dominated by marred male and women.

Table 4: Marital status

Status	Freq	Percentage
Married	92	69.17
Single	3	2.26
Widow/Widower	33	24.81
Divorced	5	3.76
Total	133	100

4.2.1.4 Family size

Fundamental social groups in society are typically consisting of one or two parents and their children. Table 5 shows about the family size of the respondent. Their family size of 3-6 members and they had 39.85% of the poultry farmers, 7-10 Members and they had 56.39 % and More than five Members they had 3.76% of the

poultry farmers. The results revealed that an average household's size was seven family members. This implies that the family members are the one who are the source of the workforce. This finding is in line with the study done by Baliyan & Masuku (2018) where by family members are the sources of labor in poultry production among small-scale producers.

Table 5: Household size

No Household size	Freq	Percentage
< 3	0	0
3-6	53	39.85
7-10	75	56.39
11-13	5	3.76
14>	0	0
Total	133	100

4.2.1.5 Education status

It was expected that education has a positive effect on the behavior of farmers about the adoption of new innovations and improved technologies. Results in table 6 show different education level of respondents whereby most of the respondents in a selected area have primary education level (57.14%) followed by secondary level. Basing on the ground that poultry needs basic education in order to run it smoothly. the farmers who engage in poultry activities can access trainings to increase profit in poultry industry as supported by Fundo & Lafayette(2015)who reported that education is the important factor that determine the ability of the farmers.

Table 6: Education level of respondents

Education level	Frequency	Percentage
No formal education	1	0.75
Primary education	76	57.14
Secondary education	30	22.56
Tertiary education	21	15.79
Others (high level)	5	3.76
Total	133	100

4.2.1.6 Occupations status of respondents

Findings in Table 7 show that most of household were farmers (60.15%) followed entrepreneur (27.82%) followed by Extensional argent (3.01) and others (9.02).This implies that most of respondents in study involved full time in farming and others spent most of time in others economic activities in generation of incomes.

Table 7: Occupations

Occupation	Frequency	Percentage
Farming	80	60.15
Entrepreneur	37	27.82
Extensional argent	4	3.01
Others (teachers/nurse)	12	9.02
Total	133	10

4.2.1.7 Respondents Experience in poultry

Summary of the data revealed that 47.37% near to 63 of respondents spent between 5-7 years in poultry farming followed by 30.83% who spent 8-10 years, followed by 2-4 years and 11-13 years respectively, this implies that 47.37% of respondents spent between 5 and 7 years in poultry farming. Therefore, result on profitability in this study was explained by this group. On experience many farmers under selected area spent 5-7 years near 47.37% in poultry farming with average of 6.83 years in poultry farming.

Table 8: Experience of respondents

Year	Frequency	Percentage
2-4	21	15.79
5-7	63	47.37
8-10	41	30.83
11-13	8	6.02
Total	**133**	**100**

Size of farming

The size of farming capacity in terms of stock of birds is among of the important factors indetermination of farm profitability. From Table 9 data gathered on size of

farming shown that most of the farmers had flock size below 1000 birds only fewer farmers have birds size more than 1000,(9%) of respondents. This implies that poultry producers in a study area operating in small-scale.an average stock of birds was minimum 611 while maximum was 2500.This is to say ability of a farmer to earn profits after deducted all costs would be lower to some respondents since return depend on the size of farming, that is positive relation other factors hold constant. This result also in line with study of Umar (2017)showed that most of small-scale farmers raised below 100 birds.

Table 9: Size of farming

Number of Birds	Frequency.	Percent
100- 500	62	46.62
501-1000	62	46.62
1001-1500	7	5.26
1501+ >	2	1.50
Total	133	100.00
Average Number of Birds	Minimum	Maximum
611	109	2500

Type of Birds preferred by the Famers and Profitability

Key informants (KIs) were asked about the type of birds most farmers would like to hold and theanswers they got. For reasons that they were able to develop within a sho rt time, most of them cited broilers as the most favored type of birds by farmers. Ho wever, it was observed during the discussions with KIs that while broilers seem to be preferred, at the end of the day they do not produce better results compared to layers and most farmers only invest in them because they are kept for a short period of time.

One was quoted as saying;
"Most farmers prefer broilers, because they take a short time to grow and are easily managed. I.e. they require fewer workers compared to layers" **(KI, One).**
Another key informant also said:
"Initially farmers preferred broilers basing on the fact that they would mature very fast, earn fast and since Dodoma Town Council is in the city centre there was easy access to the market. Broilers were also easy for low income earners and people with limited space. Only those who have good capital go for layers and in most cases they are the ones who have enough space, able to wait for a period of 4 to 5 months before birds become productive" **(KI, Two).**

Broilers were the most preferred type of birds kept in small-scale poultry producers. They were preferred by the farmers mainly because of they take few weeks to mature. This would enable farmers to get profits in a short time. The results indicate that, farmers' can generate profit under short period of time.

4.2.2 Production information

Table 10: Descriptions of production information

Particular	Obs	Mean	Min	Max
Number Of Birds	133	611.1128	109	2500
Costs				
Feed	133	653240.6	200000	2500000
Labor	133	217819.55	100000	480000
Docs	133	453357.9	82000	1840000
Drugs	133	35834.586	15000	150000
Vaccination	133	36120.301	16000	500000
Lighting	133	56541.353	20000	150000
Total Costs	133	1422514.3	460000	4860000
Return				
Chickens	133	2488939.9	560000	8250000
Eggs	133	519639.1	0	2350000
Total Return	133	3008578.9	560000	10250000

4.2.2.2 Total Cost of Production

Businesses that are familiar to their production costs tend to know the total expense towards the production line, or how much the entire process will cost to produce the items. If costs are too high, these can be decreased or possibly eliminated. Production costs can be used to compare the expenses of different activities within the company. In production, there are direct costs and indirect costs. For example, direct costs for producing chicken and eggs. Indirect costs includes overhead such as rent, salaries or utility expense.Table9; showed that the selected poultry farmers in study area on average per farm spent a total cost of production of TSHs.1422514.3this included TSHs653240.6 of feeds TSHs.217819.55 of labour TSHs.453357.9 of DOCsTSHs35834.586of drugs TSHs36120.301of vaccination and TSHs. 56541.353 of lighting costs.

4.2.2.3 Revenue productivity

The value of revenue refers to the cash income earned by the farmer from the sale of its products (chicken an eggs). It calculated by multiply total products obtained with farmer get price sold. From the Table 9 an average farmer earned 3008579TSHs with minimum farmer earned 560000TSHs while maximum farmer 10250000TSHs. This implies that revenue depends on production capacity likewise literature also revealed the higher the production level the higher the return among poultry producers (Naukunda, 2014).

4.3 Gross-margin analysis

From the Table 10 above all farmers earned profit since gross margin is positive 1586064.6 Tanzania Shillingsbut profit differs in term of farming size minimum profit was 180000 Tanzania Shillings and maximum farmer earned 5760000 Tanzania Shillings. Farm return is very important to the farmers as used to purchase inputs for farming and for meeting other family needs. This is the justification that profit depends on the level of farming in which a farmer who raised a good number of birds earning larger profit compare to those who raised small number of chicken. According to Sibel(2012) by compared explanation for gross-margin is probably very few small-scale poultry producers gained and earn high profit. This is also in line with the findings of Umar (2017) who studied the factors that influence net farm income of poultry production in Nasarawa state, Nigeria.

Table 11: Estimation on Profitability of Poultry Production

Items	Mean
Variable costs (Tanzania shillings)	
Feeds costs	653240.6
Labor costs	217819.55
Day old chicks (DOC`s) Costs	453357.9
Drags costs	35834.586
Vaccination costs	36120.301
Lighting Costs	56541.353
Total variable costs (TVC)	1422514.3
Return (Tanzania shillings)	
Chicken Return	2488939.9
Eggs Return	519639.1
Total Return (TR)	3008578.9
Gross margin= TR-TVC	1586064.7
Minimum Gross-margin	180000
Maximum Gross-margin	5760000

Influence of Social-Economic Factors on the poultry profit

The independent t-test analysis was used to determine the influence of gender on the level of poultry profit, as the result presented in Table 11,

Table 12: Determination of Gender on Influence in Profitability

Variable	Sex	N	$\bar{X}$	t	P
Gender	Male	44	291.23	-2.24	.02
	Female	89	164.75		

****p ≤01 *p <.05

The Table 12 Indicated that gender (t – 2.24) showed significant influence at 95% on poultry profit among producers, from post hoc analysis indicates that female has great influence ($\bar{X}$=291.23) on poultry profit compare with male ($\bar{X}$164.75). This implies that women get higher profit than males.

Table 13: One way of variance of socio-economic variables on influence in profit

Socio-economic variables	N	Mean	SD	SE	F	Sig
Age of respondent						
21-30	5	37.60	377745.87	221887.1	1.02	.003
31-40	29	218.00	563110.51	482655.1		
41-50	56	421.10	675732.01	188731.5		
51>	33	323.30	281318.30	468339.2		
Education-level						
No formal education	1	75.00	669671.61	220090.50	1.00	.014
Primary education	76	571.40	260669.13	412175.08		
Secondary education	30	225.60	295455.32	254007.56		
Tertiary education	21	157.90	377745.71	431241.12		
Others (high level)	5	37.60	563110.17	444246.35		
Experience						
2-4	21	157.90	847252.50	305453.61	1.75	.007
5-7	63	473.70	552612.15	385616.35		
8-10	41	308.30	428960.80	568419.80		
11-13	8	60.20	502979.11	680163.02		
Occupation						
Farming	80	601.50	784024.80	668181.85	1.62	.020
Entrepreneur	37	278.20	687623.00	765498.41		
Extensional argent	4	30.10	970470.90	271949.06		
Others (teachers/nurse)	12	90.20	956192.20	286549.10		
Family size						
3-6	53	398.5	11513.06	72742.48	2.30	.0024
7-10	75	563.9	11229.83	147966.50		
11-13	5	37.6	14192.81	184599.60		

The findings revealed that all discrete socio-economic variables, namely age of respondents (F=1.02 p=0.003), level of education (F=1.00 p=0.01), years of experience in poultry farming (F=1.75 p=0.007), respondents occupation (F=1.62 p=0.02) and household family size (F=2.30 p=0.002) have statistical important to the level of profit among farmers. Given the analysis of ANOVA on the significant

influence of variables post-hoc analysis were done to determine the influence of each variable level on their influence to the profit. A group age ranged between 40-50 years has great influence ($\bar{X}$=421.10) followed by 31-40 age group ($\bar{X}$=218). This implies that the active age groups are more influenced in profit of poultry farming. The result suggested that many of the farmers have primary education level ($\bar{X}$=571.40) followed by secondary ($\bar{x}$=225) on the influence of profit. This implies that the lowest the level of education the highest influence of profit. Therefore education to the farmers should be encouraged. Many of the farmers spent between 5-7 years in poultry farming ($\bar{X}$=473.70) followed by 8-10 years spent in poultry production ($\bar{X}$=308.30), this indicates that experience on farming had the highest influence on profit in poultry production. On occupation status most of respondents were farmers ($\bar{X}$ =601.50) followed by those who conducted small business ($\bar{X}$=278.20). This implies that poultry profitability explained more by farmers than other group of economic activities. Most of respondents have family size between 7-10 family members ($\bar{X}$ =563.90) followed by 3-6 members ($\bar{X}$=398.50). This indicates that some labor forces drown from family members.

Table 14: Poultry Production Constraints

Variable	Frequency	Percentage	Ranks
High feed costs	125	93.98	1st
Outbreak of diseases	97	72.93	2nd
Access of feeds	62	46.62	6th
Lack of external services	73	54.89	4th
High mortality rate	74	55.64	3rd
Lack of financial services	67	50.38	5th
Lack of quality chicks	41	30.83	8th
Poor quality drugs of vaccination services	53	39.85	7th
High processing costs	29	21.80	10th
High transport costs	34	25.56	9th

The findings in Table14 reveals the serious constraints facing poultry farming in study area are high cost of feed (93.98%) and outbreaks of diseases (72.93%). Feed costs and outbreaks of diseases were the major constraints reported by many farmers, followed by mortality rate (55.64%), lack of external services (54.89%), lack of financial support(50.38%), and access of feeds were also reported by many farmers as major limitation facing them during production activities. Also, quality of drags and vaccination (39.85%), lack of quality chicks (30.83%), high transport costs (25.56%) and high processing costs (21.80%) were reported as constraints by a minimal numbers of farmers.

This implies that under a certain production situation depends on the costs of inputs, costs of feeds and outbreak of diseases affects the growth of the industry as majority of respondents reported, in term of outbreak of diseases mortality rate and quality of drags and vaccination according to Ogali et al.(2011) presented that near 50% of the total chicks dies before 8 weeks of age because of diseases quality of drugs and external services as a major limitations in poultry production . This was also observed by Omondi(2018) that costs of inputs such as feeds presents a major constraint facing many farmers. Transport costs and processing costs were reported

by small number of the farmers, this indicates that most of the producers use their hired labour in transport because they depend on local markets(Chingonikaya & Salehe, 2018). On processing costs the findings implies that there is little interest in value addition of products that is why few farmers claim on processing costs

Results suggested in an interview with key informants on feed costs that feeds played a key role in the poultry industry. Most main informants have clearly shown that the weather is an obstacle that automatically affects the supply of feed, which ultimately leads to high costs and market shortages, affecting the stock of farmers, production level and end results

Another key informant also said:
"Availability affects cost. In Tanzania, when feeds are scarce, the prices go high. Currently the prices are high because the season has been bad – those who grew maize made a lot of losses and this has led to scarcity. Currently maize bran is at 6000 to 7000=Tanzania Shillings. Even fish is still very expensive due to limited availability from lakes and this highly reduces the profits farmers make. It is only farmers who keep birds in large quantities that tend to benefit a lot and yet majority in Tanzania are small scale farmers. 70% of poultry production is contributed by feeds, so the higher the cost, the lower the number of birds and production" ***(KI, Three).***

The findings actually suggest that the weather has significantly affected the cost of feeds, and this will in turn to affect profitability of poultry production.

CHAPTER FIVE

CONCLUSSION AND RECOMMENDATIONS

5.1 Conclusions

The study was conducted to investigate the economic analysis of small-scale poultry production in term of costs and returns in Dodoma City. The study was done to cover a proportional range of small-scale poultry producers amongst CHAWAKUBODO members in Dodoma city. The study was guided by the four objectives, namely, to study social-economic characteristics of poultry producers in the study area, to determine profitability of poultry production in the study area, to explore the influence of social-economic factors that affecting poultry profitability of small-scale farmers, to identify the constraints that affects poultry production in study area.

The study was conducted under cross-sectional design whereby it was guided by conceptual frame work. In this study, questionnaires, observation and documentary review were used as the methods of data collection. In this study, data collected through questionnaires were analyzed by using the Statistic Program STATA 14 whereas data obtained through both interviews and documentary reviews were analyzed thematically basing on the objectives of the study.

The first objective of the study focused on social-economic characteristics of poultry producers. The findings for this objective revealed that that 66.92 % of respondents female and 33.08 % were men and 69.17 % of respondents were married. An average farmer his/her has 46.45 years of active economic life age, households size was 7 family members on average with minimum of 3 members and maximum of 13 family members and spent 6.83 years with a minimum 2 years and maximum 12 years in poultry farming and owned of birds was 611 with minimum 109 while maximum 2500. Also most of the household were farmers (60.15%) followed entrepreneur (27.82%) and most of the respondents in a selected area have primary education level (57.14%) followed by secondary level and other levels presented at minimize percentage.

The second objective of the study aimed to determine poultry profitability. The findings showed that all farmers earned profit since gross margin is positive but

profit varies in terms of farming size minimum profit was 180000 Tanzania shillings and maximum farmer earned 5760000 Tanzania shillings.

The third objective of the study explore the influence of social-economic factors that affecting poultry profitability of small-scale farmers. The findings showed thatgender as dummy variable (t - 2.24) showed significant influence on poultry profit among producers and all discrete socio-economic variables, namely age of respondents (F= 1.02 p=0.003), level of education (F=1.00 p=0.01), years of experience in poultry farming (F=1.75 p=0.007), respondents occupation (F=1.62 p=0.02) and household family size (F=2.30 p=0.002) have statistical significance to the level of profit among farmers.

The four objective of the study intended to identify the constraints that affects poultry production in study area,. The findings for this objective revealed that the serious constraints facing poultry farming in study area are high cost of feed (93.98%) and outbreaks of diseases (72.93%). Feed costs and outbreaks of diseases were the major constraints reported by many farmers, followed by mortality rate (55.64%), lack of external services (54.89%), lack of financial support(50.38%) and access of feeds were also reported by many farmers as major limitation facing them during production activities. Also, quality of drugs and vaccination (39.85%), lack of quality chicks (30.83%), high transport costs (25.56%) and high processing costs (21.80%) were reported as constraints by a minimal numbers of farmers.

Based on the presented findings, the following conclusion can be made. First, despite the average age of farmers is 46.45 years of active prime age but there is low participation of youth in poultry production. Also, production based on gender that most of people thought that poultry production is feasible for the women compare to the opposite sex. Most of selected respondents have primary education. This concluded that there is low education level among farmers in a study area and production is low and less profitable because most of the farmers have primary education even though they can access trainings since farming size range between minimum 109 while maximum 2500 and more than half of the farmers have birds below 1000 only 7 per cent of farmers in a study area owned birds more than 1000.Secondly, poultry production is profitable since gross-margin for all farmers is

positive but production is underutilized since profit vary depend on the level of farm size. Third, the interaction between social and economic factors is important to the production since it has various influence levels in profit. Lastly feeds costs, outbreak of diseases, mortality rate and lack of external services continue to be major limitations in farming.

5.2 Recommendations

Since the study revealed that there are different factors that limit the expansion of poultry production in selected area. The study recommended the following:

First, since social-economic factors have impact in production youth participation in production should be encouraged and gender issue must be eliminated. There is a need of proper guide to the farmer about poultry farming improvement of education required in deferent levels and provision of external services as well as proper advising on combination of farm inputs.

Government should act to the farming limitations by providing veterinary services and advise banks to provide loans on low interest rate so as to expand poultry sector in a commercial way.

5.3 Suggestion for Further Studies

- Due to nature and findings obtained in this research, the researcher of this study suggests the following for the coming studies:
- Since the study at hand had focused on Economic Analysis of Small-Scale Poultry Production. The coming studies should consider intervention in other agricultural sector, notably, animal keeping production.
- Because this study focused on the Cooperative society found in urban, another prospective study should consider to be done in agricultural cooperative society found in rural areas since various areas have different characteristics in order to get knowledge extensively.
- Since this study has been conducted in Dodoma region the Central Zone of Tanzania mainland, the study suggests that the coming studies should be done in Zanzibar Tanzania Island to get knowledge in a broad spectrum pertaining to agricultural sector in terms of limitation and its success.

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APPENDICES

Appendix 1: Questionnaire for small-scale poultry producers

Introduction

Title of research; Economic analysis of Small-Scale poultry production in Dodoma Region: A case study CHAWAKUBODO cooperative society.

Dear respondent

Dear respondents, I'm **Jackson WILIAM** a student from University of Dodoma doing a research on The Economic analysis of Small-Scale poultry production in Dodoma Region: your contribution is very important following questions, all the information will remain confidential and will be used for academic purposes of this research only.

General household information;

1. **Questionnaire identity code ……**
2. (I) Date ……. (II) District ……... (III) Ward…… (IV)Village ……
3. Age of respondent ……..
4. Gender of respondent …….. 1=Male, 2=Female.
5. Marital status ……. 1=Marriage, 2=Single, 3= Otherwise (Divorced, Widow etc).
6. Education level ……... 1= No formal education, 2=Primary education, 3=secondary education, 4= Tertiary education, 5=Others
7. What is your occupation? …….. 1=poultry farming 2= Entrepreneur 3= External argent 4= Others (Teachers & Nurse)
8. What is the total number of the household family …..?

Information for type of production,

1. What is the type of production system….? 1=Traditional system 2=Commercial system
2. What type of poultry do you keep? (i) Chicken (ii) mixer (chicken duck others).
3. If chicken! What is the type of breed and total number keep per year?
   i. Broiler..... ii Layers.....

4. Who care your farming? (i) family labor (ii) hire labor (iii) Both
5. How long have you been in poultry production? ……
6. Out of the poultry farming. What other type of livestock do you keep? …….. Specify ……..
7. Where did you get external services? …… type of services 1…….. 2…….
8. Question on variable input

Items	Qts	Price	Total
Feeds			
Drugs			
Vaccination			
Labour			
Lighting			

9. Information on output(revenue)

Items	Qts	Price	Total
chicken			
Eggs			
Meat			

Information about extension services:

1. Have you ever been visited by an external agent? Yes ( ) NO ( ).
2. If yes, how many time in the last year?. …….
3. What advice did the agent give you? ……

Information as a member of association

1. Do you belong to any association? YES (……) NO (……)
2. If yes! What are the major activities of that association ……..
3. What benefits did you derive as a member! i…… ii…… iii …….

Information on constraints

Nmb	Constraints variable	Yes	No
01	High feed costs		
02	Outbreak of diseases		
03	Access of feeds		
04	Lack of external services		
05	High mortality rate		
06	Lack of financial services		
07	Poor quality of drugs		
08	Poor quality of vaccination services		
09	High processing costs		
10	High transport costs		

Appendix 2: Interview Guide to Key Informants

TOPIC: ECONOMIC ANALYSIS OF SMALL-SCALE POULTRY PRODUCTIO IN DODOMA REGION: A CASE OF CHAWAKUBODO COOPERATIVE SOCIETY

Dear respondents,

I'm **Jackson WILIAM** a student from University of Dodoma doing a research on The Economic analysis of Small-Scale poultry production in Dodoma Region. You have been listed as one of the respondents because of your experience and the unique knowledge you have on the subject. In this questionnaire, you are kindly asked to answer all questions, your contribution is very relevant after questions, and all the details will remain confidential and will only be used for academic purposes of this study.

Pre-interview session

Set of calm condition of the interview by greeting interviewee so as to create casual conversation.

Provide a summary of the study and the interview sessions.

Explain to the interviewee the purpose of the study for confidential and privacy.

Section A: Background Information of the Respondents

I. Current Occupation.
II. Location of Operation.
III. What are the major types of birds farmers prefer to keep? And why?
IV. What are your advices to the people who need to invest to the poultry?

Section B: Profitability

I. What are the major costs in poultry production? Please mention.
II. What is the factors influence poultry profitability?
III. What would you recommend to improve poultry production in a study area?

Section C: Poultry constraints

I. For your experience, what are major poultry constraints? Please mention.
II. What are challenges faced by the farmers in treating those challenges?
III. On your opinion: what would you recommended to treating those challenges?

Appendix 3: Research Clearance from the University of Dodoma

THE UNIVERSITY OF DODOMA
OFFICE OF THE VICE CHANCELLOR

P.O. BOX 259
DODOMA, TANZANIA
TEL: +255 (0)26 2323001 FAX: +255 (0)26 2323001 EMAIL: vc@udom.ac.tz

Ref. No. MA.84/261/02 27th July, 2020

Regional Administrative Secretary
Dodoma Region

RE: REQUEST FOR RESEARCH CLEARANCE

The purpose of this letter is to introduce to you **Mr. William Jackson Reg. No. HD/UDOM/00566/T.2018** who is a bonafide student of the University of Dodoma and who is at the moment required to conduct research. Our students undertake research activities as part of their study programmes.

In accordance with government circular letter Ref. No. MPEC/R/10/1 dated 4th July 1980; the Vice-Chancellor of the University is empowered to issue research clearances to staff members and students of the University on behalf of the government and the Tanzania Commission for Science and Technology (COSTECH). I am pleased to inform you that I have granted a research clearance to the student listed above.

I therefore, kindly request you to grant him any help that may help him to achieve his research objectives. Specifically, we request your permission for him to work at Dodoma Region meet and talk to the 200 small-scale poultry producers' members of CHAWAKUBODO in Dodoma municipality and other relevant stakeholders in connection with his research.

The title of his research is ***"Economic Analysis of Small-Scale Poultry Production In Dodoma Region: A Case Study Of Chawakubodo Cooperative Society".*** The period of his research is from July to October, 2020 and it will cover planned area.

Should there be any restrictions, you are kindly requested to advise us accordingly. In case you require further information, please do not hesitate to contact us through the Directorate of Research, Publication and Consultancy. P.O Box 251, Dodoma. Tel. No. + (255) 262310301 Email:research@udom.ac.tz

Yours Sincerely,

Prof. Faustine K. Bee
VICE CHANCELLOR

THE UNIVERSITY OF DODOMA
P. O. BOX 259
DODOMA - TANZANIA

Appendix 4: Research Permit from Dodoma Region

CHAMA CHA USHIRIKA WA WAFUGAJI NA WAUZAJI WA KUKU BORA NA MAYAI MKOA WA DODOMA (CHAWAKUBODO LTD)
REG. NO. DOR. 770

S.L.P 3038
DODOMA.
E-mail Address: chawakubodoltd@gmail.com

SIMU: 0716 - 683469

Kumb. Na.CHAWAK/MW/DOM/43 **15/08/2020**

YAH: KUMTAMBULISHA NDUGU JACKSON WILLIAM

Husika na somo tajwa hapo juu.

Kwa barua hii, namtambulisha kwako mtajwa hapo juu akiwa ni mwanafunzi kutoka chuo cha Dodoma (UDOM) kufanya utafiti unaohusiana na ufugaji wa kuku, kupitia kwa wanachama wa (CHAWAKUBODO LTD) kama sehemu ya mafunzo yake vitendo Mada ya utafiti wake ni uchanganuzi wa kiuchumi kuhusiana na ufugaji wa kuku katika wafuagaji waliopo Dodoma.

Ni matumaini yetu atakuwa katika nafasi nzuri ya kujifunza kwa vitendo. Tafadhali mpe ushirikiano,

Nawasilisha

.....
Pius S. Mushi
MWENYEKITI

CHAMA CHA USHIRIKA WA KUKU CHAWAKUBO MKOA WA DODOMA