FINANCIAL DETERMINANTS OF TEA PRODUCTIVITY IN KERICHO COUNTY, KENYA

BY

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MAY, 2013
DECLARATION

This research is my original work and has not been presented for a degree in any other university or for any other award.

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This research has been submitted for examination with my approval as University supervisor:

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F. Ndede

This research has been submitted for examination with my approval as University supervisor:

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DEDICATION

This research is dedicated to my beloved wife Gladys Yegon, beloved father, Mr. Samwel Kiget, my mothers, Martha, Grace and Leah and my brothers, Julius, Philip, Chepkuto, Solomon, Ben and Philemon, for their constant support and patience through this process of research work. May God bless you all.
ACKNOWLEDGEMENT

I acknowledge my able supervisor F. Ndede, my course lecturers and my colleagues in Kenyatta University for guidance, moral and financial support. May God bless you all.
LIST OF ABBREVIATIONS

FAAP - Factors Affecting Agricultural Productivity

FAAPK - Factors affecting agricultural productivity in Kenya

TIB - Tea in Bangladesh

TISL - Tea in Sri Lanka
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ABSTRACT

The researcher built a case that led to the problem being solved. This study sought to establish the financial determinants of tea productivity in Kericho County in Kenya. Tea is a major cash crop that is grown in Kenya. In Kenya tea is ranked as the third major foreign exchange earner, behind tourism and horticulture. Most tea produced in Kenya is black tea; however green tea, yellow tea, and white tea are produced on order by major tea produce. In Kenya tea is the main export cash crop and a source of income for the residents. However, it is notable that tea production in Kericho County is faced with a lot of challenges. The current state of tea sector in Kenya is a product of many factors including the country’s colonial history, resource endowments, the prevailing socio-economic environment, regional economic relations and the general policy environment. This study sought to investigate financial determinants of tea production in Kericho County. The study however, was based on the following specific objective: to identify financial determinants of tea productivity in Kericho county, to analyze the effects of financial determinants of tea productivity in Kericho county and to devise possible remedies in curbing the effects of financial determinants of tea productivity in Kericho county. The study framework was 2005 to 2011. A survey design was used to collect data from an identified group of people with the objective of determining current status of that group of people with respect to one or more variables. In this design, the researcher selects a sample of subjects and administers questionnaires or conducts interviews to collect data. A survey is normally employed in research to describe attitudes, beliefs, opinions among other personal attributes. The target population comprised of all the unit managers in KTDA factories and 50 tea farmers in Kericho County. The sample size was 90, which comprised of 40 unit managers and 50 tea farmers, given that it was not be easy to get such a population with the same characteristics. The main research instrument that was used was the questionnaires. Pilot study in the field assisted in the evaluation and amendment and modifications that were necessary in the instruments used in this study will be effected accordingly. After obtaining permission from the relevant authorities in Kenyatta University and relevant authorities from the area of the study, the researcher visited the target population for collection of data. The results were reported using descriptive statistics such as frequency tables, graphs and charts. The findings showed majority of farmers in Kericho County are male. The findings also showed that most farmers fall under the age bracket of 31-40 and majority are diploma holders from different institutions. The researcher recommended that the farmers should improve on different strategies that will contain fluctuations in tea productivity, i.e. accessibility to loans, training and extension services and involvement in decision making. The researcher suggested that further studies be carried out on financial determinants of effective laborers in tea plantations in Kericho County and effects of financial determinants on dividend payments to farmers in Kericho County.
OPERATIONAL DEFINITION OF TERMS

Factories: These are units that process raw materials to finished product of tea.

Tea: It is cash crop that yields raw materials for production of tea leaves.

Dividends: These are payments made to farmers by tea factories depending on tea productivity.
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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

1.1.1 AN OVERVIEW OF TEA PRODUCTION IN KENYA

Tea is a major cash crop that is grown in Kenya. In Kenya, tea is ranked as the third major foreign exchange earner, behind tourism and horticulture. Most tea produced in Kenya is black tea; however green tea, yellow tea, and white tea are produced on order by major tea producers.

1.1.2 HISTORY OF TEA PRODUCTION IN KENYA

Tea was discovered more than 5000 years ago by an emperor Shen Nung in China. Tea was first introduced in Kenya in 1903 by GWL Caine and was planted in present day Limuru. However commercialization of the tea started in 1924 and since then, Kenya can boast itself as major producer of black tea. Kenya is one of the world's top producers and exporters of tea, currently Kenya is ranked third behind China and India.

Kenyan tea is also one of the top foreign exchange earners, alongside tourism, horticulture, and Kenyan coffee. The task of managing the small scale holder lies with the Kenya Tea Development Agency (KTDA).
Currently, the KTDA has 62 tea factories serving over 500,000 small scale farmers cultivating over 100,000 ha. Of all tea produced in Kenya, KTDA members produce over 60% while the rest is produced by large scale producers (KTDA, 2011).

1.1.3 TEA SECTORS IN KENYA

Tea industry in Kenya is unique in that it is comprised of two distinct sectors; the Plantation or large scale sector and the small holder sector. The Plantation sector is owned by large scale tea producers and companies while the small holders sector is by small scale growers. The small holder sector has registered more than half a million growers who are located across tea growing areas in the country. The small holder sector factories are managed by Kenya Tea Development Agency Ltd (KTDA).

1.1.4 TEA GROWING REGIONS AND CLIMATIC CONDITION IN KENYA

The tea growing regions in Kenya are endowed with the ideal climate for tea. Tropical, volcanic red soils and well distributed rainfall ranging between 1200mm to 1400mm per annum that alternates with long sunny days; which attribute to these favorable conditions. Production goes on all round the year with two main peak seasons of high crop between March and June and October and December which coincide with the rain seasons.

Kenya tea is grown free of agrochemicals because the ideal environment in which the tea is grown acts as a natural deterrent to pests’ infestation and diseases attack; This natural conditions guarantees the consumer the safest and most refreshing health drink (MOA, 2008).
The main tea growing areas in Kenya are situated in and around the highland areas on both sides of the Great Rift Valley; and astride the Equator within altitudes of between 1500 metres and 2700 metres above the sea level. These regions include the areas around Mt. Kenya, the Aberdares, and the Nyambene hills in the Central Kenya and the Mau escarpment, Kericho Highlands, Nandi and Kisii Highlands and the Cherangani Hills (TBK, 2012).

1.1.5 FACTORS AFFECTING QUANTITY OF TEA IN KENYA

The quality of tea is affected by a number of factors which can be classified under four (4) major items, namely cultivars, environment, cultural practices and tea processing techniques.

Firstly, are the cultivars. The fermentation ability, chemical components and agronomic characters vary with cultivars. For partially fermented tea, quality is more important than yield.

Secondly, is the environment. Soils and climate are two major factors affecting the quality. High elevations are considered to be the most favorable for production of quality tea.

Thirdly, are the cultural practices. These, including tillage, weeding, fertility management, irrigation, plant protection and harvesting management may affect the quality though their effect on the yield may be more important. Among the management practices affecting the quality, leaf age and season of harvesting are the most significant.

Lastly, is the processing technique. The processing technique of partially fermented tea involves a series of complicated operations (withering, shaking, panning, rolling, and drying)
which, indeed, can be regarded as an art. Slight changes in manipulation of every step can affect the final quality including appearance, tea liquor color, aroma and taste. It is not surprising to find that the qualities of made teas from the same batch of fresh leaves may vary greatly between individual processors (MOA, 2004).

Notwithstanding the above mentioned factors affecting tea productivity, there are the financial determinants which influence the same and this study will investigate financial determinants of tea productivity in Kericho County.

1.2 STATEMENT OF THE PROBLEM

In Kenya, agriculture is the backbone of the economic growth. An immediate development challenge for Kenya in the face of overall poor economic performance and deepening poverty, which has led to adverse trends in agricultural growth and productivity (Walter, 2010).

It is now widely recognized that increasing agricultural productivity is the single change with the greatest direct benefit to the poor, given that 82 per cent of Kenyans live in the rural areas, the majority of whom are poor. This requires an understanding of what propels growth and productivity in Kenyan agriculture (KNFU, 2011).

In Kenya, tea is the main export cash crop and a source of income for the residents. However it is notable that tea production in Kericho County is faced with a lot of challenges (Annual report KTDA 2011/2012). The current state of tea sector in Kenya is a product of many
factors including the country’s colonial history, resource endowments, the prevailing socio-economic environment, regional economic relations and the general policy environment.

Kericho County has experienced adverse fluctuations in tea productivity for the past twelve (12) years. This trend has persisted irrespective of efforts by tea factories and farmers to device methods and techniques to counter it. This problem has affected economic development in Kericho County, since farmers depend largely on tea production as their main source of income (TBK, 2011).

Below is a table adopted from TBK that shows instability in tea production. From the table it was evident that tea production has been unstable i.e. fluctuating from the year 2002 to 2012.

THE TEA BOARD OF KENYA

10-YEAR MONTHLY TEA PRODUCTION IN KERICHO COUNTY

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Table 1.1: Table showing 10-year monthly tea production in Kericho County

This study sought to investigate financial determinants of tea production in Kericho County. Many studies had been done in other several parts of the world on tea production but none had been done in Kericho County and this is the gap that this study sought to fill. This was crucial in formulation of agricultural policy and in addressing the challenges facing agriculture and especially tea production in Kenya.

1.3 OBJECTIVES OF THE STUDY

The main objective of this study was to examine financial determinants of tea productivity in Kericho County.

This study however was based on the following specific objectives:
I. To identify financial determinants of tea productivity in Kericho county.

II. To determine the relationship between financial determinants and tea production in Kericho County.

III. To devise possible remedies in curbing the effects of financial determinants of tea productivity in Kericho County.

1.4 RESEARCH QUESTIONS

I. What are financial determinants of tea productivity in Kericho County?

II. What are the effects of financial determinants of tea productivity in Kericho County?

III. What are possible remedies in curbing the effects of financial determinants of tea productivity in Kericho County?

1.5 SIGNIFICANCE OF THE STUDY

Tea production in Kenya has evolved over the years. This research offered an insight and response into the financial determinants of tea productivity in Kericho County. The researcher believed that the findings of the study immensely benefit Kenya Tea Development Agency and especially the farmers in policy making by providing workable management strategies that make the tea industry more attractable to the farmers and develop a positive attitude towards the tea farming in Kenya. This study would also help in providing some information on the needs to provide the best dividend policies for the shareholders. The group was requested to guide the Secretariat in prioritizing the areas that required to be
analyzed to evaluate the welfare of shareholders. In addition, suggest areas for further research to improve the participation of shareholders in the global tea economy and instruments to be analyzed in support of enabling policies that may enhance their welfare.

1.6 LIMITATIONS OF THE STUDY

The research was based on the following limitations. Firstly, the respondents may be too busy to co-operate during the study. Secondly, ethical considerations may hinder respondents from giving honest responses and thirdly, some respondents may be too busy to honor appointments during the study.

These limitations will be delimited by the researcher assuring the respondents that the information they give will be only use for the intended purpose and if on the day of appointment some of the respondents will be busy then the researcher is willing to reschedule the appointment for another day.

1.7 SCOPE OF THE STUDY

The study confined itself to the financial determinants of tea productivity in Kericho County. Kericho County was selected because it was accessible to the researcher and this is an area which has many farmers in comparison to other regions in the former Rift Valley province. The relationship between financial determinants and tea production in Kericho County was also being established. Similarly, the study sought to devise possible remedies in curbing the effects of financial determinants of tea productivity in Kericho County. The study framework was 2005 to 2011.
CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

Literature review is a critical and in depth evaluation of previous research. It is a summary and synopsis of a particular area of research. A good literature review expands upon the reasons behind selecting a particular research question. Creswell (2010) defined the purpose of the literature review as sharing with the reader the results of other studies that are closely related to the study being reported. To gain an in-depth understanding of the financial determinants of tea productivity in Kericho County in Kenya, other studies must be reviewed. Further, the purpose of the literature review was viewed as relating a study to the larger ongoing dialogue in the literature about a topic, filling in gaps, and extending prior studies. More importantly, the literature review provided a framework for establishing the importance of a study with other findings. Literature related to the research problem is reviewed in this Chapter.

2.1 FACTORS AFFECTING AGRICULTURAL PRODUCTIVITY IN OTHER PARTS OF THE WORLD

2.1.1 TEA IN BANGLADESH

Haque (2010) in their study which focused on the estimation of the technical efficiency of the tea producing industries in Bangladesh, applying the Stochastic Frontier Approach
and to identify the factors causing inefficiency over the reference period 1990 to 2004 found out that the rejection of the Cobb-Douglas model as an adequate representation of Bangladesh Tea Industry was justified, because the function is non-linear in some dimensions and there are important interactions among the variables.

The variables, both area and labor, disappeared to be the major determinants on the tea industry production. According to the results obtained from the stochastic frontier estimation, the average technical efficiency of tea industry given by the Translog model is 59%. This indicates that there is a scope to further increase the output by 41% without increasing the levels of inputs. From the inefficiency effects model, they found that the variable HHI shows negative but impact on tea production and temperature, significantly contributed to improve technical efficiency in tea production.

Haque (2010) concluded that temperature was one of the major variables in order to improve technical efficiency in tea production in Bangladesh, but it is surprising about rainfall which was found less efficient although, it is not statistically significant. For the MLE, \( g \) is estimated at 0.99, this can be interpreted that 99% of random variation is the Value added among the tea industry production due to inefficiency.

### 2.1.2 TEA IN SRI LANKA

According to the results obtained by B.M.J.K. Basnayake and L.H.P. Gunaratne (2002) from the stochastic frontier estimation, the average technical efficiency of tea small holding sector given by the Cobb-Douglas model is 63.10 per cent. This indicates that there is scope of further increasing the output by 36.90 per cent without increasing the levels of inputs.
From the factors considered which affect technical efficiency, age of farmer, experience, educational level, occupation, type of crop and type of clone were significant at 5% level. According to the results, older farmers appeared to be more efficient than younger farmers. This may be due to their good managerial skills, which they have learnt over time.

Therefore the younger farmers should be encouraged to work with elder farmers. Experience showed a positive relationship with inefficiency. This may be because most of the experienced farmers still do have seedling tea in their holdings. Another reason may be that they neglect adopting management practices recommended by TSHDA.

Educated farmers are found to be more efficient than the uneducated. This may be because their knowledge, gained from education has provided them a background to take correct decisions. It would be easier for them to grasp the information provided them by the extension officers. Therefore it is necessary to increase educational facilities in the area. Farmers who are involved in the tea holding as full time farmers are found to be more efficient than the other farmers. This is obvious, as they devote more time on their holdings. Tea small holders should be encouraged to be involved in the tea holding as full time farmers. This could be a difficult task because they seek other employment as it is not secure to be involved in the tea holding as full time farmers. The reason is that price fluctuations and unfavorable climatic conditions drastically affect the tea industry.

Therefore, the risk is great implementation of a solid guaranteed price scheme would be an appropriate solution. The positive coefficient for clone indicates that the usage of clone TRI 2023 alone is inefficient. Although the TRI has recommended TRI 2023 as a suitable clone for the Mid Country, it showed a negative effect in terms of efficiency. Since the usage of
clone TRI 2023 alone is inefficient, small holders should be encouraged to replace TRI 2023 with other clones such as TRI 2025, TRI 2021 and DG 39 etc. The small holders who use vegetative propagated tea are found to be more efficient than others who use seedling tea. Tea small holders should be encouraged to replant their old seedling tea with improved VP tea. A good suggestion would be to increase the subsidy given for replanting.

It was found that the technical efficiency estimates are highly sensitive to the functional form specified because the Cobb-Douglas and translog models yielded different technical efficiencies. However, the Cobb-Douglas specification is used in the interpretation as it is widely accepted in the literature.

2.2 FACTORS AFFECTING AGRICULTURAL PRODUCTIVITY IN KENYA

Thairi (2010) from his empirical analysis found out that not enough evidence is found to support our hypothesis that Community managed schemes are more productive than government managed irrigation schemes in the production of Rice in Kenya. However, this may be due to omission of variables due to unavailability of data that could have given a different result. Some of them may include household characteristics, availability of credit facilities, Usage of inputs, educational levels and so on.

The study has found that the Irrigation Act, 1966 has provided the policy framework which the national irrigation schemes in Kenya have been managed. The study also found that apart from national schemes, other irrigation systems in Kenya are small holder and private irrigation systems.
From the theory and literature, we found out that the government has an important role to play in the development of irrigation systems in Kenya. The performance of irrigation projects depends on a number of factors for example the size of the project, the availability of underground water and rainfall, the level of technology employed and development of the infrastructure.

Production (paddy) has positive impact on yields hence the government should aim at strengthening measures that increase production in irrigation schemes for example provision of more extension services to the rice farmers in order to boost the yield levels. Owour (2009) found out that the farmers’ knowledge, adoption and adaption to the recommended tea production technologies were largely dependent on the effectiveness of extension system since it was the main channel through which information reached farmers. Information on crop management was in circulation (41%) more than marketing information (19%). Socio-economic characteristics (age, education, gender, family size, land holding, farming experience, and marital status of household heads had a great impact on access in terms of choice and use of a particular information pathway. Results on regression indicated that the total amount of fertilizers and prices applied were the key significant determinant of tea production. This was primarily probably because fertilizer application (NPK) is mandatory in tea production in Kenya.

Information accessibility affected production but only to a limited extent. The study emphasized the need for production among smallholder tea farmers to therefore target a diversity of information channels.
Odhiambo, Nyangito and Nzuma (2004) found out that output from the agricultural sector has declined steadily since the early seventies. In the first decade after independence, agriculture grew at an impressive rate of 4.8 per cent per annum. From 1970s, the growth rate declined to about 3 per cent in the 1980s and further down to about 2 per cent in the 1990s. The poor performance of the sector has been attributed to, among other factors, declining productivity in the sector. There has been a very close association between growths in agricultural output and the growth of the overall economy confirming the widely held notion that the sector is the engine of growth. Analysis of the growth pattern of agricultural production factors shows a rapid growth in agricultural labor force largely due to a fast growing population. This has resulted in a gradual decline in the land-labor ratio, which is a manifestation of disguised or even open unemployment in Sources and determinants of agricultural growth and productivity in Kenya. Although fertilizer use has registered the fastest growth between 1965 and 1986, its use per hectare still remains well below international standards. Similarly, the use of pesticides and chemicals, and purchased seeds has shown only marginal increases over the years.

Growth in agricultural output in Kenya is largely due to growth in the factors of production. For the whole period under review, 1965-2001, agricultural output grew at an average rate of 3.8 per cent of this total growth, about 89.7 per cent is due to the factors of production (land, labor and capital). Only the remaining 10.3 per cent is attributable to productivity growth or TFPG. Therefore, growth of the agricultural sector has crucially depended on factor inputs.

In terms of individual inputs, the most important source of growth of the agricultural sector is labor. The input in the period under review accounted for 48.3 per cent of the total growth.
the period 1965-72, the factor accounted for 31.3 per cent of the total growth. This rose in the period 1972-83 to 44.7 per cent and further to 58.5 per cent in the 1983-2001 period. These results show the importance of labor in agricultural production in Kenya. Next in importance in terms of contribution to overall growth in the sector is capital. Over the entire period under review, the factor accounted for 27.6 per cent of the total growth. While the contribution of the factor stood at 18.8 per cent in the first period, rose to 28.9 per cent in the 1983-2001 periods before falling to 22.3 per cent in the 1983-2001 periods.

Land as factor of production has accounted the least in total agricultural growth. For the period 1965-2001, the factor accounted for only 13.8 per cent of the total growth. It is significant to note, however, that the factor accounted for about 22.9 per cent of the total growth 1965-1972 but declined in the subsequent periods to 10.5 per cent in the 1972-1983 period and 5.3 per cent in the 1983-2001 period. This is attributed to low technological development in the sector. There has been a gradual decline in agricultural productivity in Kenya from the 1980s. In the early period, 1965-1972, TFPG accounted for 6.3 per cent of the total output growth in the agricultural sector. In the following period, 1972-83, the contribution of TFP increased to 15.8 per cent before falling to 13.8 per cent in the 1983-2001 periods.

There is a close association between agricultural TFPG and trade policy. These results tend to suggest that the trade regime has had an impact on growth in the agricultural sector. Agricultural TFP is also closely associated with climate. The relationship is positive and highly significant. The results show that neither the human nor the physical capital variables has had any significant influence on agricultural productivity. Another important determinant
of agricultural productivity from this analysis is government expenditure that goes to services such as research and extension.

2.3 CONCEPTUAL FRAMEWORK

A conceptual framework according to Orodho (2009:120) is a type of a model that illustrates the nature of relationship between independent and dependent variables used in the study. In the context of the current study, Fig. 1.1 depicts the relationships between independent variables (financial determinants) and the dependent variables (tea production) among the farmers in Kericho County. According to Fig. 1.1 financial determinants have been identified as contributing to tea production in Kericho County. The figure illustrates how the both the factors affects each other.

Financial determinants of tea production in Kericho County

- Cost of production
- Market prices
- Bonus dividends
- Cost of green leaves
- Transport costs

Independent variable

- Increases tea productivity in tones each year
- Decreases tea productivity in tones each year

Dependent variable

Figure 1.1. Conceptual framework (Researcher, 2013).
CHAPTER THREE

METHODOLOGY

3.0 INTRODUCTION

This chapter explains the sampling procedures which were adopted, the research design, methods of data collection, data analysis and interpretation and the presentation of the data.

3.1 RESEARCH DESIGN

A research design is the arrangement of conditions for collection and analysis of data in a manner that combines relevance to the research purpose with economy in procedure (Kothari, 2007). It refers to the organization of Data Collection and analysis to provide the required information. The study adopted a descriptive research design. A survey was used to collect data from an identified group of people with the objective of determining current status of that group of people with respect to one or more variables (Mugenda, 2005). In this design, the researcher selected a sample of subjects and administers questionnaires or conducts interviews to collect data. A survey is normally employed in research to describe attitudes, beliefs, opinions among other personal attributes (Wambalaba, 2009).

3.2 TARGET POPULATION

Target population refers to the individuals or elements that the research intends to use in the study so as to obtain primary data (Mugenda & Mugenda, 2005). The target population
comprised of all unit managers and all tea farmers in Kericho County. Managers in tea factories are involved in day to day running of the tea factories and tea farmers are directly affected by the fluctuation in tea productivity.

3.3 SAMPLING PROCEDURE AND SAMPLE SIZE

3.3.1 SAMPLING PROCEDURE

Sampling is the process of selecting a representative of a total population in order to produce a miniature (small) cross section; it is a small proportion of the target population selected for analysis (Kothari, 2007). The sampling procedure refers to the techniques used to draw a representative sample size. The required sample size is influenced by: the size of the population the sample seeks to represent; the number of variables in the data gathering instrument; the requirement for statistical analysis; and the degree of confidence required from the results (Cohen & Minion, 2006; Page & Meyer, 2009). A minimum sample size for standard inferential statistics is 30 (Bouma, 2006; Cohen & Manion, 2007; Page & Meyer, 2008), however Bouma (2011) suggests that when an analytical matrix is being used, the sample size should be five times the number of boxes in the matrix which will be the case in this study. The sample size however represents the number of correctly completed questionnaires that must be returned so that the results of any statistical analysis can be generalized to the whole population with sufficient levels of confidence.

In this study, the researcher used stratified random sampling to put farmers in strata based on the districts and managers on the basis of tea factories in Kericho County. Simple random sampling was used to identify 40 unit managers and 50 tea farmers in Kericho County, who
will be given questionnaires and interviewed to obtain the required information. Lindergren (2009) notes that in a random sample, there is a good chance of producing a representative population in every characteristics and the same was also noted by the Dowry (2008) that a random sample is the best to represent the population when it is not feasible in times of study and cost of the study of the entire population hence random sample will be appropriate for these study.

3.3.2 SAMPLE SIZE

Mark & Adrian (2008) argued that the choice of the sample size will be by the confidence one need to have in your data; the level of certainty; the accuracy you require for any estimates made in your sample; the type of analysis one is going to take and finally the size of the total population from which the sample is drawn. Roscoe (2006) argues that a sample size larger than 30 and less than 500 are more appropriate for most research. The sample size was 90 given that it was not easy to get such a population with the same characteristics. 90 respondents represented 40 unit managers and 50 tea farmers in Kericho County. Given that the population from which the sample was being drawn was homogeneous, they were given the research instruments. This sampling procedure will not allow the administration of research instruments at once since one respondent will be asked to direct the researcher to the next respondent of the same characteristics. Unit managers are the one who are involved in day to day running of the tea factories and tea farmers are directly affected fluctuations in tea productivity in Kericho County.
3.4. RESEARCH INSTRUMENT

Research instruments are the tools by which data is collected. The main research instrument that was used in this study was the questionnaire.

3.4.1 QUESTIONNAIRE

A questionnaire is a list of questions in a set form that is developed to address specific objectives, research questions or hypothesis of the study (Mugenda and Mugenda, 2007). Both closed and open ended questions will be used. A questionnaire was found appropriate due to a number of reasons. Kerlinger (2010) observes that a questionnaire is widely used in research because it’s possible to give similar or standardized questions to the subjects. This makes it possible to compare responses from different subjects. It’s also possible to reach different and distant respondents by either posting the questionnaires or delivering to them in person. By using questionnaires a research will guarantee anonymity to the subjects and hence encouraging them to give honest responses.

The questionnaires constructed contained two scales where the respondents chose the appropriate responses by putting a tick inside a relevant box. Remmers (2008), noted that this is easy to construct in a relatively short time and requires no experts to sort out the statements of the opinion as required by other scales. Hence it was suitable for this study. Participants responded to each item by choosing one of five scales alternatives.
3.5 PILOT STUDY

Pilot study was conducted to determine a more appropriate and efficient administration of the research instrument free of errors. This was done by taking small samples of equal size from the sample having the same characteristics of the proposed sample which did not participate in the study. Piloting was done with five managers from any other sectors before the actual collection of data is done. The purpose of the study was to enable the researcher discover the weakness of the research instruments which be used during the actual study, check the clarity of the questions or items and also elicit comments that could assist the researcher reconstruct the questionnaires for the purposes of improvement and modifications of the instruments. Immediately after the pilot study, the researcher made some changes as was required. The pilot questionnaire contained additional open-ended questions that were designed to gather information on areas that seemed relevant to the retired managers but which were omitted from the original design. Piloting the above survey instrument was also done on a convenience, or accidental sampling, basis with a view to testing the unambiguous nature of the items within the questionnaire and its ability to elicit the desired information.

3.6 INSTRUMENT VALIDITY AND RELIABILITY

3.6.1 INSTRUMENT VALIDITY

Validity is the degree to which results obtained from the analysis of the data represent the phenomena under study (Mugenda & Mugenda, 2009). This had to do with how actually the data obtained represent the phenomenon under study. This was determined by the absence of systematic error in data collection and analysis. Validity of research instruments was demonstrated when an instrument was seen that it was asking the right question framed in the
least ambiguous way. Pilot study in the field assisted in the evaluation and amendment and modifications that were necessary in the instruments used in this study was effected accordingly.

3.6.2 INSTRUMENT RELIABILITY

Reliability is the measure of degree to which a research instrument yields consistent results after repeated trials (Kothari, 2007). The researcher endeavored to enhance the reliability of the data collected by ensuring that the questionnaires were tested and retested by having them administered to the same group of respondents twice at an interval of two weeks under the same conditions. They contents of the questionnaires were reviewed and analyzed to ascertain that the instruments were suitable for the purpose for which they were set. Revisions to the instruments were made to reflect their suggestions. To further ensure construct validity, multiple sources of evidence were used as suggested by Yin, (2006).

The instrument was also pilot tested using a different accidental sample that is similar in qualifications to the sample that were used in the study. The test-retest reliability coefficient of the instrument was calculated from this. The results were measured using the Pearson's Product moment correlation coefficient and a confidence level of $\geq 0.7$ is acceptable.

3.7 DATA COLLECTION PROCEDURES

Data collection procedures refer to the techniques employed by the researcher in collecting data. In this research, both primary and secondary data was collected. Questionnaires, observations, interviews, and observation were used at the same time, since every respondent was asked to identify for the researcher the next respondents (Cohen and Manion, 2005).
After obtaining permission from the relevant authorities in Kenyatta University and relevant authorities from the area of the study, the researcher visited the target population for collection of data.

According to Kothari (2007), the administration of the research instruments will be done to the targeted population accompanied by an explanation on how to complete them and the respondents will ask to make attempts of being honest so that the researcher can get a true of the items asked. After the collection of the data, it was taken for processing. Data analysis was done on the data collected in the study. On the other hand, secondary data on Performance Contracting was collected from books, published government reports, journals from the library, internet database and websites.

3.8 DATA ANALYSIS AND PRESENTATION TECHNIQUES

Analysis is the process of simplification and interpretation of the survey data. It was partly computation and partly intuition in determining which variable to examine and what relationships to explore. The data was analyzed by use of both quantitative and qualitative method of data analysis. The quantitative measures were used to generate descriptive statistics to analyze for frequencies, means and percentages while the qualitative methods were used in sorting out data from questionnaires. The questionnaires was screened for completeness and then coded and formatted. The data will be analyzed with the aid of Statistical Package for Social Sciences to generate various descriptive statistics based on a two tailed z-test at 95% level of significance. The results were reported using descriptive statistics such as frequency tables, graphs and charts. The findings were used to make inferences and generalizations (Cohen and Manion, 2005).

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A comparison was made between early and late respondents to address the problem of non-response bias (Miller & Smith, 2004). Response bias is the effect of non-responses on survey estimates. A chi-square analysis procedure was used to compare early and late respondents. Based on the comparison of responses of early and late respondents, caution was exercised when interpreting the results of the study because of the anticipated differences in response rates and sample size.

3.9 ETHICAL CONSIDERATION

Permission was obtained from the management of the institution before questioning and interviewing occurs. Efforts were made to avail results of the interviews and other instruments for inspections by management of the institutions and officers involved if need be. The results were not used for any other purpose apart from the stated one.
CHAPTER FOUR

4.0 DATA PRESENTATION, ANALYSIS, INTERPRETATION AND DISCUSSION

4.1 INTRODUCTION

This chapter presents a description of results obtained from data analysis. The discussion of the results was done by the researcher in accordance with objectives. The main important task of the researcher was to identify and interpret major findings.

4.2 PRESENTATION OF FINDINGS

4.2.1 RESPONSE RATE

Out of 90 questionnaires which were distributed, only 80 were returned.

4.2.2 BACKGROUND INFORMATION OF RESPONDENTS

The respondents were ranked according to different profile like age, level of education and work experience, status and departments which they work. They were given option to rate, agree, disagree, and strongly disagree.

4.2.3 RESPONSE ON AGE

The researcher wanted the respondents to indicate age bracket and the following results were obtained.
Table 4.1: Respondent’s age bracket

<table>
<thead>
<tr>
<th>Age in years</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30</td>
<td>15</td>
<td>30%</td>
</tr>
<tr>
<td>31-40</td>
<td>20</td>
<td>40%</td>
</tr>
<tr>
<td>41-50</td>
<td>10</td>
<td>20%</td>
</tr>
<tr>
<td>51 and above</td>
<td>5</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Researcher (2013)

Table 4.1 above shows that most of the respondents fall under the age bracket of 31-40 representing 40% and between age brackets of 20-30 are 30%. Respondents above 41 are few. That is 41-50 is 20% and 51 and above is 10%. This analysis shows that most of the farmers in Kericho County are middle age people which can be advantage in terms of knowledge, energetic and aggressive for life.
Figure 4.1: Respondent’s age bracket

Source: researcher (2013)

4.2.4 RESPONSE ON GENDER

The researcher wanted respondent to indicate the gender and the following results were obtained.

Table 4.2: Frequency table showing gender of respondents

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>36</td>
<td>45%</td>
</tr>
<tr>
<td>Male</td>
<td>44</td>
<td>55%</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Researcher (2013)

The Respondents’ response shows that 45% are female and 55% are male. This shows that tea productivity in Kericho County is undertaken by male farmers. The policies should be put in place to attract female farmers to tea industry.
Figure 4.2: Respondent's gender

*Source: Researcher (2013)*

### 4.2.5 RESPONSE ON LEVEL OF EDUCATION

The researcher wanted to know the level of education and the following are the results.

**Table 4.3: Frequency table showing level of education**

<table>
<thead>
<tr>
<th>Number of training</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary 'O' level</td>
<td>20</td>
<td>25%</td>
</tr>
<tr>
<td>Secondary 'A' level</td>
<td>18</td>
<td>22.5%</td>
</tr>
<tr>
<td>College</td>
<td>30</td>
<td>37.5%</td>
</tr>
<tr>
<td>University</td>
<td>12</td>
<td>15%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

*Source Researcher (2013)*
From the data collected it showed that most of the respondents who are farmers in Kericho County are diploma holders from different colleges. That is 37.5% are diploma holders from colleges and 12% are degree holders from different universities. 22.5% and 12.5% are Secondary ‘A’ level and primary level who are majority of farmers in Kericho County.

![Figure 4.3: Respondent's level of education](image)

Source: Researcher (2013)

4.2.6 RESPONSE ON FARMER’S EXPERIENCE IN FARMING

Table 4.4: Frequency table showing experience in farming

<table>
<thead>
<tr>
<th>Period</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 1 year</td>
<td>18</td>
<td>22.5%</td>
</tr>
<tr>
<td>2-5 years</td>
<td>22</td>
<td>22.7%</td>
</tr>
<tr>
<td>6-10</td>
<td>24</td>
<td>30%</td>
</tr>
<tr>
<td>11 years and above</td>
<td>16</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Researcher (2013)
The findings of the study as depicted by table 4.4 above revealed those 2-5 years and 6-10 years as represented by 22.7% and 30% respectively. The summary of that findings shows that minimum number of farmers has worked for over 11 years and below 1 year respectively.

![Experience in Farming Frequency](image)

**Figure 4.4: Respondent's Experience in farming**

**Source:** Researcher (2013)

### 4.3 FINANCIAL DETERMINANTS OF TEA PRODUCTIVITY IN KERICHO COUNTY

The researcher sought to establish the financial determinants of tea productivity in Kericho County and they were given option to rate, agree, disagree, undecided, strongly agree and strongly disagree, undecided, strongly agree and strongly disagree.
4.3.1: RESPONSE ON COST OF PRODUCTION

The researcher sought to find out if cost of production determines the tea productivity in Kericho County and the findings were as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>36</td>
<td>45%</td>
</tr>
<tr>
<td>Agree</td>
<td>15</td>
<td>18.75%</td>
</tr>
<tr>
<td>Undecided</td>
<td>11</td>
<td>13.75%</td>
</tr>
<tr>
<td>Disagree</td>
<td>10</td>
<td>12.5%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>8</td>
<td>10%</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 4.5: Frequency table showing Response on cost of production

Source: Researcher (2013)

From the data collected it showed that those who strongly agree and agree have the highest percentage of 45% and 18.75% respectively and those who disagree and strongly disagree has the lowest percentage of 12.5% and 8 % respectively, only 11 are undecided. This analysis showed that most employees agree that cost of production affects tea production in Kericho County.
4.3.2: RESPONSE ON MARKET PRICES

The researcher sought to find out if market prices affects tea production in Kericho County and the findings were as follows:
Table 4.6: Frequency table showing response on market prices

<table>
<thead>
<tr>
<th>Description</th>
<th>Frequency</th>
<th>Percentage%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>26</td>
<td>32.5 %</td>
</tr>
<tr>
<td>Agree</td>
<td>22</td>
<td>27.5 %</td>
</tr>
<tr>
<td>Undecided</td>
<td>10</td>
<td>12.5 %</td>
</tr>
<tr>
<td>Disagree</td>
<td>12</td>
<td>15%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>10</td>
<td>12.5 %</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: researcher (2013)

From the data collected it showed that high percentage strongly agreed and agree that market prices determines tea productivity in Kericho County. Those who strongly agree and agree have 32.5% and 27.5% respectively. Those who disagree and strongly disagree has 15% and 12.5% respectively. This analysis shows that most farmers in Kericho County of employees agreed that high production of tea is caused by high market prices of tea.
4.3.3 RESPONSE ON BONUS DIVIDENDS

The researcher sought to find out if low bonus dividends payments to farmers causes low production of tea in Kericho County and the findings were as follows.
Table 4.7: Frequency table showing response on Bonus Dividends

<table>
<thead>
<tr>
<th>Description</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>36</td>
<td>45</td>
</tr>
<tr>
<td>Agree</td>
<td>23</td>
<td>28.75</td>
</tr>
<tr>
<td>Undecided</td>
<td>11</td>
<td>13.75</td>
</tr>
<tr>
<td>Disagree</td>
<td>6</td>
<td>7.5</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Researcher (2013)

The collected information showed that 36 respondents representing 45% strongly agree and 23 (28.75%) agree only. Seven point five percent 7.5% disagree. This showed that high percentage agree that low bonus dividends causes low productivity of tea in Kericho County.

Figure 4.7: Response on bonus dividends

Source: Researcher (2013)
4.4.4: RESPONSE ON COST OF GREEN LEAVES

The researcher sought to find out if high cost of green leaves causes low productivity of tea in Kericho County and the results are presented below.

Table 4.8: Frequency table showing response on cost of green leaves

<table>
<thead>
<tr>
<th>Description</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>28</td>
<td>35</td>
</tr>
<tr>
<td>Agree</td>
<td>25</td>
<td>31.25</td>
</tr>
<tr>
<td>Undecided</td>
<td>14</td>
<td>17.5</td>
</tr>
<tr>
<td>Disagree</td>
<td>9</td>
<td>11.25</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Researcher (2013)

The collected information showed that 28 respondents representing 35% strongly agree and 31.25% agree respectively. 11.25% disagree and only 5% strongly disagree. This shows high cost of green leaves causes low tea productivity in Kericho County.
4.4.5: RESPONSE ON COST OF TRANSPORT

The researcher sought to find out if high cost of transport causes low production of tea in Kericho County and the findings are presented below.
Table 4.9: Frequency table showing response on cost of transport

<table>
<thead>
<tr>
<th>Description</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>24</td>
<td>30</td>
</tr>
<tr>
<td>Agree</td>
<td>21</td>
<td>26.25</td>
</tr>
<tr>
<td>Undecided</td>
<td>19</td>
<td>23.75</td>
</tr>
<tr>
<td>Disagree</td>
<td>13</td>
<td>16.25</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>3</td>
<td>3.75</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100 %</td>
</tr>
</tbody>
</table>

**Source: researcher (2013)**

The data collected showed that 24 (30%) and 21 (26.25%) of the respondents strongly agree and agree respectively. It also showed that 13 (16.25%) disagree this and 3 (3.75%) strongly disagree. This showed that high cost of transport causes low production of tea in Kericho County.
4.5: RESPONSES ON EFFECT FINANCIAL DETERMINANTS ON TEA PRODUCTIVITY IN KERICHO COUNTY

The researcher sought to establish the effect financial determinants on tea productivity in Kericho County and the findings are below.
Table 4.12: Frequency table showing increases in tea productivity in Kericho County

<table>
<thead>
<tr>
<th>Description</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>32</td>
<td>40</td>
</tr>
<tr>
<td>Agree</td>
<td>28</td>
<td>35</td>
</tr>
<tr>
<td>Undecided</td>
<td>5</td>
<td>6.25</td>
</tr>
<tr>
<td>Disagree</td>
<td>10</td>
<td>12.5</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Researcher (2013)

From the data collected, it showed that high percentage is on the opinion that increase in tea production is one of the effects of financial determinants in Kericho County. It showed strongly that 40% strongly agree, 35% agree and only 12.5% disagree whereas 6.25% are undecided.
Table 4.13: Frequency table showing Decreases in tea productivity

<table>
<thead>
<tr>
<th>Description</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>24</td>
<td>30</td>
</tr>
<tr>
<td>Agree</td>
<td>19</td>
<td>23.75</td>
</tr>
<tr>
<td>Undecided</td>
<td>5</td>
<td>6.25</td>
</tr>
<tr>
<td>Disagree</td>
<td>17</td>
<td>21.25</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>15</td>
<td>18.75</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: researcher (2013)

From table 4.13 above, the study indicates that 30% strongly agree, 23.75% agree and only 6.25% undecided. Those who disagree this have the percentage of 21.25%. In summary, farmers are of the opinion that financial determinants cause decreases in tea productivity in Kericho County.
Figure 4.13: Response on decreases in tea productivity

Source: researcher (2013)

4.5.3: RESPONSE ON ATTRACTION OF OTHER SHAREHOLDERS TO TEA INDUSTRY

The researcher sought to find out if attraction of other shareholders in tea industry is one of the effects of financial determinants of tea productivity in Kericho County and the results are below.
Table 4.14: Frequency table showing attraction of other shareholders to tea industry

<table>
<thead>
<tr>
<th>Description</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>23</td>
<td>28.75</td>
</tr>
<tr>
<td>Agree</td>
<td>29</td>
<td>36.25</td>
</tr>
<tr>
<td>Undecided</td>
<td>6</td>
<td>7.5</td>
</tr>
<tr>
<td>Disagree</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>10</td>
<td>12.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Researcher (2013)

The data collected showed that high percentage is of the opinion that attraction of other shareholders to tea industry is one of the effects of financial factors in Kericho County. 28.75% and 12.5% strongly agree and disagree respectively. Only 7.5% are undecided while 15% disagree with this.
Figure 4.14: Response on attraction of other shareholders to tea industry

Source: researcher (2013)

4.5.4: RESPONSE ON INCREASE IN TEA PLANTATION

The researcher sought to know if increase in tea plantation is one of the effects of financial factors in Kericho County and the results are on the table below.
Table 4.15: Frequency table showing increase in tea plantation

<table>
<thead>
<tr>
<th>Description</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>35</td>
<td>43.75</td>
</tr>
<tr>
<td>Agree</td>
<td>28</td>
<td>35</td>
</tr>
<tr>
<td>Undecided</td>
<td>6</td>
<td>7.5</td>
</tr>
<tr>
<td>Disagree</td>
<td>9</td>
<td>11.25</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: researcher (2013)

The results showed that high percentage agrees are of the opinion that increase in tea plantation is one of the effects of financial factors that affect tea productivity in Kericho County.

Figure 4.15: Response on increase in tea plantation

Source: researcher (2013)
4.5.6: RESPONSE ON HIGH DIVIDENDS

Table 4.16: Frequency table showing increased dividends payments to farmers

<table>
<thead>
<tr>
<th>Description</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>38</td>
<td>47.5</td>
</tr>
<tr>
<td>Agree</td>
<td>34</td>
<td>42.5</td>
</tr>
<tr>
<td>Undecided</td>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td>Disagree</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Researcher (2013)

The data collected showed that 47.5% strongly agree, 42.5% agree this and 2.5% are undecided whereas only 5% disagree this. In summary, farmers in Kericho County agreed that an increase in dividends is one of the effects of tea productivity in Kericho County.
4.6: RESPONSE ON THE REMEDIES OF CURBING EFFECTS FINANCIAL DETERMINANTS OF TEA PRODUCTION IN KERICHO COUNTY

The researcher wanted to know the strategies used in Kericho County to curb the effects of financial determinants in tea productivity and the findings are presented in table 4.20 below.

Table 4.18: Frequency table showing provision of training opportunities to farmers

<table>
<thead>
<tr>
<th>Description</th>
<th>Long-term training</th>
<th>Shot-term training</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategies used to contain fluctuation in tea productivity</td>
<td>Frequency (%)</td>
<td>Frequency (%)</td>
<td>Frequency (%)</td>
</tr>
<tr>
<td>Provision of training opportunities</td>
<td>43 53.75</td>
<td>37 46.25</td>
<td>80 100</td>
</tr>
</tbody>
</table>

Source: Researcher (2013)
The data collected above showed that farmers in Kericho County are of the opinion that the most strategies used is by providing training opportunities. That is 72% of the farmers agrees that training is a strategy which is commonly used and 28% of the employees disagree this.

![Provision of training facilities](image-url)

**Figure 4.18: Response on provision of training facilities**

Source: researcher (2013)

4.6.1: Response on provision of loan facilities by financial institution and government

The researcher wanted to know if provision of loan facilities by financial institution is a factor that will increase tea production in Kericho County and the findings are presented in table 4.21 below.
Table 4.19: Frequency table showing loan provision by financial institutions and government

<table>
<thead>
<tr>
<th>Description</th>
<th>Short-term Loans</th>
<th>Long-term Loans</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategies used to contain fluctuation in tea productivity</td>
<td>Frequency</td>
<td>Percentage (%)</td>
<td>Frequency</td>
</tr>
<tr>
<td>Loan provision by financial Institutions</td>
<td>40</td>
<td>50</td>
<td>40</td>
</tr>
</tbody>
</table>

Source: Researcher (2013)

The data collected showed that provisions of loan facilities both for short-term and long-term are strategies that will reduce fluctuation in tea productivity in Kericho County. That is 50% agrees that short-term loans should be used while 50% that long-term loans is preferable.
4.6.3: Response on involvement in decision making

The researcher wanted to know if involvement in decision among employees is one of the strategy used by organization and the findings are presents in table 4.23 below.

**Table 4.21: Frequency table showing involvement in decision making**

<table>
<thead>
<tr>
<th>Description</th>
<th>On dividend payments</th>
<th>On distribution of inputs used in production of tea</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stratevies used to contain fluctuation in tea productivity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>Percentage (%)</td>
<td>Frequency</td>
<td>Percentage (%)</td>
</tr>
<tr>
<td>Involvement in decision making</td>
<td>42</td>
<td>52.5</td>
<td>38</td>
</tr>
</tbody>
</table>

**Source: Researcher (2013)**

The results showed that most of the employees agree that involvement in decision making is not strategy, used to contain staff turnover in the organization.
4.6.4: Response on increased pay/wages for the laborers working in tea farms

The researcher wanted to know if increased pay is a strategy used to contain the fluctuation in tea productivity in Kericho County and the findings are presented in table 4.24.

**Table 4.22: Frequency table showing increased pay/wages**

<table>
<thead>
<tr>
<th>Description</th>
<th>Increase in Basic salary</th>
<th>Improvement in working conditions and allowances</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategies used to contain fluctuation in tea productivity</td>
<td>Frequency</td>
<td>Percentage (%)</td>
<td>Frequency</td>
</tr>
<tr>
<td>Increased pay/wages</td>
<td>41</td>
<td>51.25</td>
<td>39</td>
</tr>
</tbody>
</table>

**Figure 4.21: Response on involvement in decision making**

Source: Researcher (2013)
Source: Researcher (2013)

The data collected showed that most employees are of the opinion that increase in pay in basic salary and also improve working conditions is strategy that should be used to contain fluctuations in tea productivity in Kericho County.

Figure 4.22: Response on increased pay/wages

Source: researchers (2013)
CHAPTER FIVE

5.0 SUMMARY, FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

The chapter represents summary of findings as per the data analyzed. It gives conclusion as per the objectives of the study and recommendations and finally areas of recommended future research.

5.2 SUMMARY OF THE MAIN FINDINGS

The findings showed that majority of the farmers in Kericho County male. That is 45% female and 55% male. Most of the farmers fall under age brackets of 31-40 that is 40%, 30% are between age bracket of 20-30, 20% are between the age bracket of 41-50 and 10% are above 51 years of age.

The findings almost showed that majority of the respondents are college/diploma holders from different institutions that is 30% and the lowest are university level/degree level with 15%. This means that most of them are not well educated hence is the reason that has affected tea productivity in Kericho County. The findings also showed that farmers in Kericho County has experience in farming and have taken part in tea production for long. That is 2-5 years (27%), 6-10 (30%) staffs who have experience over 11 years are only 20%. This showed that the farmers should be encouraged in order to improve tea productivity in Kericho County.
5.2.1 CAUSES OF TEA FLUCTUATION IN KERICHO COUNTY

The finding showed that cost of production causes fluctuations in tea production in Kericho County, where most of the employees strongly agree this that is 45% strongly agree, 18.75% agree and 10% are undecided, only 2% disagree this. It is also revealed that high market prices of cost of inputs lower the productivity of tea in Kericho County, that is 27.5% agree this and 32.5% strongly agree those who disagree are only 4%.

The data collected also showed that high bonus dividends is one of the method that encourage farmers to increase on tea productivity in Kericho County, that is 45% strongly agree and 28.75% agree this only 2% disagree. This showed that the most of the farmers are on the opinion that low dividend payout causes low productivity of tea in Kericho County. It is also revealed that high cost of green leaves less is one of the main cause of low productivity of tea, that is 35% agree, 31.25% strongly agree, 6% disagree 2% strongly agree. This showed that most of the farmers in Kericho County are of the opinion that high cost of green leaves causes high fluctuations in tae production in Kericho County.

The data collected also showed that high cost of transport is also a factor that causes low productivity of tea hence fluctuations tea production in Kericho County. That is 30% strongly agree, agree 26.25%, 5% disagree, 3% strongly disagree.
5.2.2 STRATEGIES USED TO CONTAIN FLUCTUATIONS IN TEA PRODUCTIVITY IN KERICHO COUNTY.

The data collected showed that provision of training opportunity is one strategy to be used, that is 43% agree for short-term training while 46.25% are for long-term training. It is also revealed that provisions of loan facilities should be used in order to reduce fluctuation of tea production that is 50% says that short-term loan is recommended while 50% are for long-term loans. It is also revealed that involved in decision making is one of the strategies that should be used in Kericho County that is 52.5% agree to take part in decisions involving divisions of earnings, while 47.5% accepts to take part in decision making on provisions of farm inputs.

According to the study it is revealed that increase pay is a strategy which should be used to reduce fluctuations of tea in Kericho County. That is 51.25% of farmers agree on basic pay while 48.75% agree on improvement of working conditions for workers in tea farms and factories.

5.2.3 EFFECTS OF FINANCIAL DETERMINANTS ON TEA PRODUCTIVITY IN KERICHO COUNTY

According to the respondent views on the effects of financial determinants on tea productivity in Kericho County, majority of farmers agrees that increase in tea productivity is one of the effects, that is 23.75% agree, 30% strongly agree, only 18.75% disagree. The data collected also showed that attraction of other shareholders to tea industry is one of the major effects of financial determinants that is 28.75% strongly agree, 36% agree while only 12.5%
disagree this. It is also revealed that increase in plantations of tea in one of the major effects of financial determinants of tea productivity in Kericho County. Table 4.16 showed that 43.5% strongly agree, 35% agree while 2.5% strongly disagree this.

The data collected also showed that high dividend payout to farmers is one of the effects of financial determinants of tea productivity in Kericho County. That is 42.5% agreeing this, 47.5% strongly agreeing while 2.5% disagree.

In summary the farmers should make sure that these strategies are put in place, so as to reduce fluctuation of tea productivity in Kericho County thus increases production of tea in the County.

5.3: CONCLUSION AND RECOMMENDATION

Fluctuations in tea productivity has negative impact to tea productivity in Kericho County thus lowers level of tea production, earnings of farmers and government, hence poor performance and low productivity quality and quantity of tea.

5.4 RECOMMENDATION

The researcher therefore recommend that farmers should improve on different strategies to contain tea fluctuations through accessing loan facilities in financial institutions to improve tea farming, increase pay to laborers, establishment of welfare, improved the working conditions, taking part in decision making and ensuring they attend for further training in institutions of higher learning in order to gain skill on farming.
5.5 SUGGESTIONS FOR FUTURE RESEARCH

Hence further research should be carried out on the following areas:

- Effects of financial determinants of effective laborers in tea plantations in Kericho County.

- Effects of financial determinants on dividend payments to farmers in Kericho County.
REFERENCES


Kothari C.R. (2008). Research Methodology: Methods and Techniques, New age International publishers, Delhi, India


QUESTIONNAIRES FOR THE FARMERS

INSTRUCTIONS:
This questionnaire is divided into two (2) parts;
- Part 2 requires information regarding the financial determinants of tea productivity in Kericho County.

NOTE:
- You are kindly asked to answer all questions.
- You are kindly asked to be honest.
- The information you give was treated with confidentiality.

PART 1
1. Sex of the respondent
   a) Male ( )
   b) Female ( )

2. Age of the respondent
   a) 20-30 ( )
   b) 31-40 ( )
   c) 41-50 ( )
   d) Over 51 years ( )

3. Level of Education
   a) Primary 'O' level ( )
   b) Secondary 'O' level ( )
   c) Diploma level ( )
   d) Degree level ( )

4. Your experience in farming :
   a) Below 1 year. ( )
   b) 2 – 5yrs ( )
   c) 6– 10yrs ( )
   d) 11 years and above ( )
PART II

INSTRUCTIONS TO RESPONDENT:
• Please indicate how you feel by showing the extent of agreement by using the following words: Strongly agree, Agree, Undecided, Disagree and Strongly disagree
• Put a tick inside the box of your choice
• Note that there is no correct or wrong answer in this section.
• Put a tick inside the box of your choice.

KEY
SA- Strongly Agree
A – Agree
UD – Undecided
DA – Disagree
SD- Strong Disagree

On a scale of 1-5 where 1=SA, 2=A, 3= UD, 4=D and 5= SD please rank the following.

<table>
<thead>
<tr>
<th>FINANCIAL DETERMINANTS OF TEA PRODUCTIVITY IN KERICHO COUNTY</th>
<th>SA</th>
<th>A</th>
<th>UD</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of production</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Payment to the customers per kg of tea leaves</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tea quality and quantity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market availability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bonus dividends</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

EFFECTS OF FINANACIAL DETERMINANTS OF TEA PRODUCTIVITY IN KERICHO COUNTY

Increases tea productivity

61
| Decrease tea productivity | ✓ |
| Attract other shareholders | ✓ |
| Make shareholders to increase tea plantation | ✓ |
| High dividends leads to high tea production | ✓ |
| Low dividends rates leads to low tea production | ✓ |

Identify the effects of financial determinants of tea productivity in Kericho County

1. Increase or decrease in tea productivity
2. Attract other shareholders to the industry
3. Increase dividends to shareholders

What are the possible remedies in curbing the effects of financial determinants of tea productivity in Kericho County?

1. Accessibility to trans
2. Division of training facilities
3. Encourage the tea factories to open up to foreign investors
4. Encourage the decision making
TO WHOM IT MAY CONCERN:


This is to confirm that the above named is a Master of Business Administration student in the School of Business, Kenyatta University.

He is through with course work and has successfully defended his Masters Degree proposal (Financial determinants of tea productivity in Kericho County in Kenya). I confirm that he has done all the corrections that were pointed out by the examiners during the defense and he is now embarking on data collection.

Any assistance extended will be much appreciated by this office.

Thank you.

E.N NYACHOTI
FOR: DOCTORAL AND MBA PROGRAMME COORDINATOR

EN/lk