Firm Level Performance Factors Of Coffee Cooperative Societies In Kenya And The Mediating Role Of Entrepreneurial Orientation

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DECLARATION

This thesis is my original work and has not been presented for award of a degree in any other University.

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DEDICATION

This study is dedicated to all small scale business people and in particular the small scale coffee farmers.

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ABBREVIATIONS AND ACRONYMNS

AFA	Agriculture and Food Authority
APA	American Psychological Association
ANOVA	Analysis of Variance
ECF	European Coffee Federation contracts
EO	Entrepreneurial Orientation
EU	European Union.
FAO	Food and Agriculture Organization.
FOB	Free on Board.
GCA	Green Coffee Association (of New York) contracts
GDP	Gross Domestic Product.
GVC	Global Value chain
Ha	Hectares
ICA	International Cooperatives Alliance**.**
ICO	International Coffee Organization**.**
ISO	International Organization for Standardization**.**
ITC	International Trade Centre
KCPTA	Kenya Coffee Producers and Associated Association**.**
KCTA	Kenya Coffee Traders Association
K.T.D.A.	Kenya Tea Development Agency
KShs	Kenya Shillings
NCE	Nairobi Coffee Exchange**.**
SME	Small and Medium Enterprises

SPSS Statistical Package for Social Sciences

STABEX Stabilization of Exports

UNCTAD United Nations Conference for Trade and Development**.**

UTZ 'Good coffee' in mayan language is called UTZ Kapeh. This is one of certification schemes in coffee and tea. The certification was changed from UTZ kapeh to just UTZ to have the certification include tea.

VCA Value Chain Analysis**.**

WTO World Trade Organization.

ABSTRACT

Coffee is the most traded agricultural commodity globally. It is produced within the tropics by countries in South and Central America, Africa and Asia and consumed mainly by countries in the Northern hemisphere. In Kenya coffee is mainly produced by small scale farmers' cooperative societies. In the past years these cooperatives performed so well and were producing a lot of high quality coffee until 1988 when the International Coffee Organization's quota system collapsed which made the global coffee prices to become extremely unstable. This coincided with introduction of structural adjustment programmes championed by the International Monetary Fund and the World Bank. These adjustments affected the coffee cooperatives negatively – the country's average annual coffee production decreased from 130, 000 tonnes to about 40,000 tonnes. The coffee cooperatives performance has declined since that time. Various interventions by development agencies and the government have not helped much. A study is therefore necessary to come up with solutions to this problem as the coffee cooperatives support over 700 000 families. This study sought ways of improving the performance of the coffee cooperatives in Kenya. This study was carried out in 283 factories coffee factories selected randomly through a combination of stratified and simple random sampling. Structured questionnaires were administered for data collection. The study used descriptive research design to investigate the firm–level factors (coffee production level, coffee quality, diversification into non-coffee business, intergration along coffee value chain and entry into non-traditional coffee markets) that influence the performance of coffee cooperatives. The mediating effect of the entrepreneurial orientation on the association between the performance of the cooperatives and the factors was evaluated. The performance was measured in terms of the income to the cooperative society, number of active members and proportion of income spent on community projects. The entrepreneurial orientation was measured using five dimensions;- risk taking, proactiveness, innovativeness, autonomy and competitive aggressiveness. Analysis of data was done using descriptive statistics, inferential statistic and regression analysis. The study found out that the level of coffee production had the greatest influence on the performance with a coefficient of correlation of (r=0.991), coffee quality (r=0.1048), diversification to non-coffee businesses (r=0.9042) and entry into non-traditional coffee markets had (r = 0.98). The level of integration along the coffee value chain had a positive but insignificant effect on performance of cooperative societies. In addition, the study revealed that entrepreneurial orientation mediates the association between firm level factors and performance. This was evident by the coefficient of determination (R^2) of 45.29 before mediation which increased to 60.60 after mediation. The hypothesis testing was done using F-values and all calculated values were above 3.84 leading to the rejection of null hypothesis that each of the four factors named above had no effect on the performance of a coffee cooperative. The study concluded that increasing production of quality coffee and engaging in diversification to non-coffee businesses as well as exploring and exploiting non-traditional markets would make a coffee cooperative perform better. The study recommends that cooperatives produce more coffee of high quality and target the nontraditional markets so as to improve their performance. The cooperatives should diversify into non-coffee businesses to cushion themselves from effects of poor weather and unstable and unfavourable global prices.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

World population is expected to grow by a third or by 2.3 million people by year 2050, (FAO, 2009). As such the globe must produce food and fibre to feed its population of over 9 billion people. The world leaders recognized the need to address the issue of food security in 2000 when the Millennium Development Goals (MDGs) were formulated. The MDG number one is to eradicate extreme poverty and hunger. There exist various ways of improving economies and eradicating poverty. Offering quality education aids in economic development, industrialization is another method, infrastructure development, trade enhancement and many others. Agriculture plays a major task in development of economy as well as poverty reduction in the world. The agricultural sector was the basis of industrial revolutions in America and Europe and more recently China, Korea and Taiwan, (FAO, 2009). In the developing countries 3 out of 4 people depend on agriculture. According to the World Bank (2008) what requires to be done in agriculture is to get better asset position of the rural poor, make the small holder extra competitive as well as diversify the income sources.

The performance of the agricultural organizations should also be improved. Sustainable development as well as growth is more probable to be as a result of agriculture, Xinshen, Peter and James (2010). Agriculture is the back ground of the economy in Kenya contributing 24% of Gross Domestic Product (GDP) directly and 27% indirectly. It is among the main subsectors supporting the pillar of economy of Kenya's economic blue print, The Vision 2030,

Gachanja, Obere and Thuku (2013). More than 65% of Kenyans live in the rural areas where they are mainly engaged in agricultural activities. Among the main cash crops grown in Kenya are tea, coffee and horticultural crops. Globally coffee farmers form cooperative societies to take advantage of economies of scale and serve as bargaining platforms in their businesses. Coffee in Kenya is managed through two systems. There are the estate farmers who farm and process their own coffee (primary processing or wet processing) and there are the small holder farmers who are organized in cooperative societies that wet mill their coffee. A cooperative society's performance is best measured by determining the quantity of coffee produced. Any factor that negatively affects the production of coffee deals a major blow on the performance of coffee cooperatives. This study sought ways on improving the performance of coffee cooperative societies in Kenya. The study begins with literature on coffee production trends globally and narrows down to Kenya where the coffee production has declined severely. The trend in coffee production is an important aspect of the performance of a coffee cooperative because the commodity is the main product from the cooperative.

1.1.1 Global Coffee Production and Trading

Coffee farmers globally are organized in cooperatives which manage the coffee washing factories and in some countries the cooperatives also do secondary processing. Reduction in coffee production is a sure indication of decline in a cooperative's performance. Coffee is a widely traded commodity in the world where it is grown in over 50 countries (ICO 2010). Every year over 400 billion cups are consumed (Bagel, 2013.). Coffee is the source of livelihood for over 25 million families and hence supports over 100 million people (Ponte,

2002). Coffee is produced in three regions; America, Africa and Asia and consumed mainly in Europe, America (ICO 2014). South America is the biggest producer of coffee globally and produces 56% of the coffee (ICO 2014). It is constituted by countries like Brazil, Peru, Colombia and other smaller producers. Brazil has been the largest producer of coffee in the world for the last 100 years. In 2013 Brazil produced 36 million 60 kg bags which is almost a third of global production (ICO 2015). Although the liberalization of 1980s and 1990s increased the overall prices of coffee the Brazilian small scale farmers lost (Cleland, 2010). The performance of small scale coffee farmers was lower compared with the large scale ones. The small scale farmers didn't have the luxury of time to store their coffee until prices improved, but the large scale farmers had the lee way of waiting until the coffee prices improved.

1.1.2 Coffee Production and Trading in Africa Region

In Africa coffee is mainly grown in Ethiopia, Uganda, Ivory Coast, Tanzania, Rwanda and Kenya, Coffee production from the main producers countries is shown in Figure 1.1. The continent used to produce 33% of all the global coffee produced annually in 1970s (ICO 2013) This decreased to an average of 16% in 1990s and further to 13.1% in the 2000s. The continent's coffee production has decreased from 19.7 million bags per year within the regulated period to 15.7 million bags in the free market (ICO 2015). This decrease in production has resulted in decline in the performance of farmers' organizations (ICO 2015).

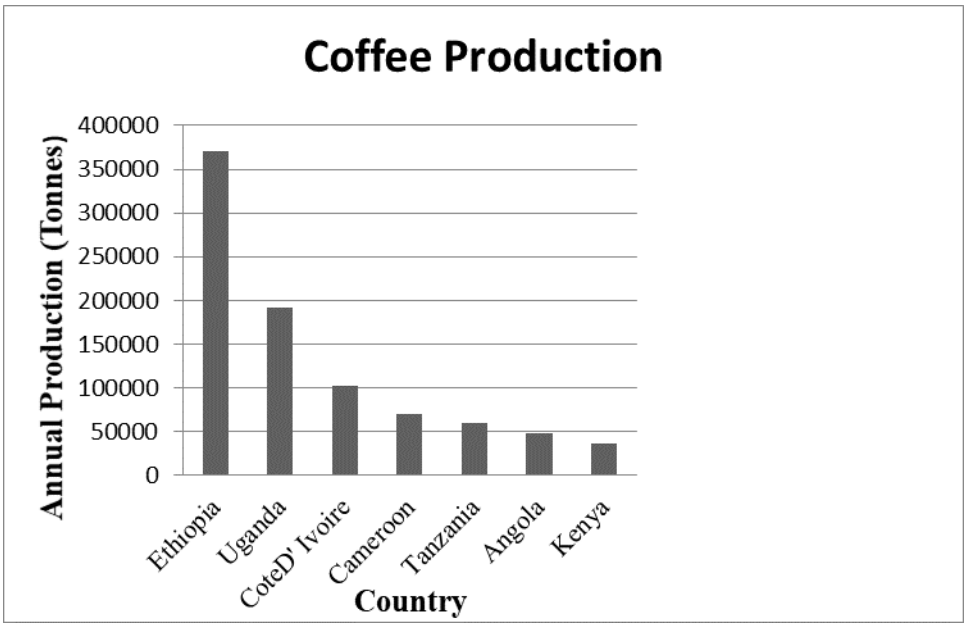

Figure 1.1: 2011 Clean coffee production in some Africa countries.
Source: ICO (2013).

Tanzania has about 275,000 hectares of coffee that benefits over 500,000 households (Bradley, Parrish & William, 2005). Over 90% of the producers are small scale farmers (Bradley et al. 2005). The big estates produce about 2,500 kgs per hectare while the small holders produce around 300 kgs per hectare. It is therefore evident that the performance of the smallholder farmers is low compared to the estates. These small holders are organized into cooperative societies in each village (Bradley et al., 2005). The cooperatives have undergone a lot of downgrading due to liberalization of the sector in 1980s and 1990s (ICO 2014). The annual production in the country between 1963 and 1990 used to be around 1.7 million bags which declined to 792, 000 bags for the period 1990 to 2013, (ICO 2014).

Rwanda was also hit by the coffee crisis after 1989 which coincided with drought (Mukerezi, 2003). The Rwanda coffee farmers used to enjoy government support until the complications

of war made the government unable to continue with the support (Verwip, 2003). This was made worse by the government relying on aid which made it give in to the structural adjustment programmes in 1990 that made it so hard for the farmers.

Coffee is among the main commodities of agriculture within the country that has a designated Directorate to regulate it. Coffee contributes 1% of the country's GDP and 8% of the agriculture export earnings (AFFA, 2016). It employs 30% of all staff in agriculture and supports 700, 000 families and over 5 million people are engaged in coffee business (AFFA, 2016) – *A diagram of coffee value chain is annexed in this thesis as appendix V*. The country has 434 cooperative societies and 4000 estates (KCTA, 2015). Coffee was introduced by French and Scottish missionaries in the 19th century. It is rated to be the fourth largest earner of foreign exchange after tea, horticulture and tourism. Before independence small scale farmers were not permitted by the government to grow coffee. This was until the year 1934 when the British Colonial Board in London permitted some minimal small scale farming of coffee. This was restricted to 100 trees and not on more than ¼ an acre (Gachanja et al. 2013). The farmers had to be members of cooperative societies and had to do the farming away from the white settlers' estates. After independence, the Coffee Development Authority was set up by the government to support the small coffee cooperatives. The government removed the constraints that prevented the Africans from planting coffee and other cash crops. With time, the cooperatives area under coffee outgrew the area under the estate coffee. By 2008 cooperatives share had grown to 128000 hectares from 13000 hectares in 1964. The estates had some 33000 hectares the same time. Currently the cooperatives command about 75% of the total area under coffee. Kenya's coffee production is very low, 0.6% of world production

(FAO, 2007). Since 1987 the annual coffee production in the country has decreased from 138, 000 tonnes to 37, 000 tonnes in 2012 (KIPPRA, 2014). The International Coffee Organization has categorized coffee into four main categories-; Columbian milds, other milds, Brazilian naturals and the robustas (Block, 2005). Kenya produces the 'Columbian milds' category that is regarded to be the best in the world (Block, 2005). It has been argued that Kenya's coffee should be set apart as a distinct category (Block, 2005). This has not been possible due to the low production.

With the collapse of the coffee marketing quota system in 1980s, Kenya's farmer absorbed the full shock of the plummeting world prices, (Gachanja et al. 2013). The clean coffee production decreased from an annual average of 2.1 million bags (or 126,000 tonnes) in 1987 to 900,000 bags (or 54,000 tonnes) in 2007 (Gachanja et al. 2013). The productivity has decreased from 892 kgs of clean coffee per hectare (1980) to 284 kgs per hectare. This is far too low from the Arabica average of 698 Kgs per hectare (Gachanja et al. 2013). The number of hectares under coffee is shown in Figure 1.2.

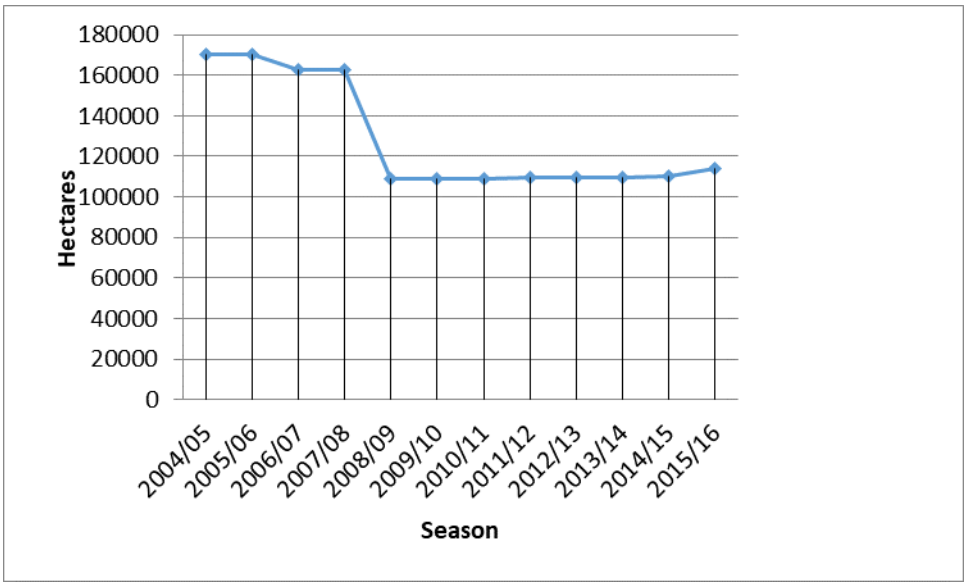

Figure 1.2: Hectarage under coffee in Kenya from 2004 to 2016.
Source: ICO (2017)

Coffee was the leading export crop in Kenya from Independence to 1988 (Kabura & Doppler, 2009) contributing 40% export value. After the coffee crisis of 1989 the situation changed and by 1992 its contribution to export value was a mere 9%. The country's coffee production decline from 1984 to 2016 is shown in Figure 1.3. The prices also declined. The average price for the period 1976 to 1986 was 141.66 US cts per gallon and by 1992 the price had decreased to 28 US cts per gallon (ICO 2007).

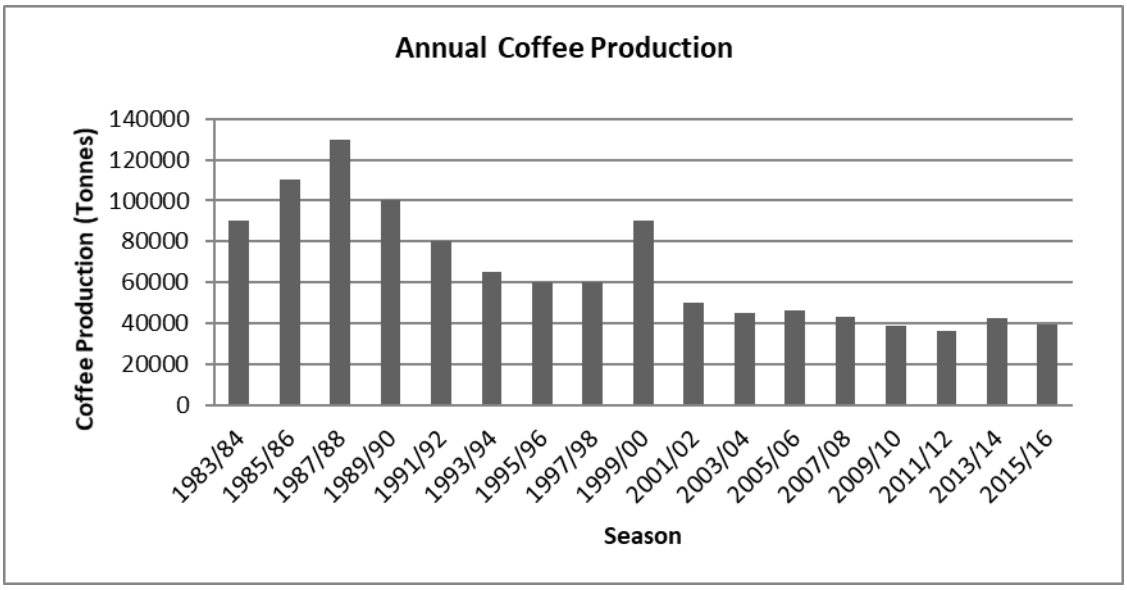

Figure 1.3: Kenya Coffee production in tonnes
Source: ICO (2017)

1.1.3 Coffee Marketing Cooperatives

In accordance with the International Cooperative Alliance, a cooperative can be defined as an peoples' autonomous relationship united willingly to attain their social, cultural as well as economic wants through jointly owned and democratically controlled businesses. A cooperative is user owned, user controlled and user benefitted outfit (Komo & Gumba, 2010). There are seven principles that guide the cooperatives; Members' democratic control, economic participation of members, voluntary and open membership, independence and autonomy, training and education, collaboration amongst cooperatives as well as concern about the community (Ortman & King, 2007). Agricultural cooperatives play a chief function in a country's economic development (Chloupkova, 2012). These cooperatives offer major services like marketing, supply and specialized services, (Ortman & King, 2007). By 1968

Tanzania, for example, had the largest cooperative movement in Africa and 3rd in the world through government support. In Kenya the small scale coffee is marketed through the cooperative societies that are owned by the farmers.

Kenya's cooperative sector dates back in 1908 (Nkandu, 2010). This is when the first cooperative was formed in Lumbwa, Kipkelion area Rift Valley. The enactment of the first legislation on cooperatives was done in 1931. The first national cooperative was Kenya Cooperative Creameries that was formed in 1931. Kenya Farmers Association was formed later that same year. Kenya Planters Cooperative Union was formed in 1932. In 1964 the Kenya National Federation of Cooperatives was formed. All these apex cooperatives have gone under although KCC has been revived by the government (Nkandu, 2010).

The initial threat of agricultural cooperatives occurred in 1950s when people started abandoning the cooperatives to join the war group, Mau (Gamba & Komo, 2010). The post-independence but pre-liberalization era saw the number and capacity of cooperatives grow tremendously (Gamba & Komo, 2010). Beginning early 1980s Kenya, just like in other Sub-Saharan African countries started the structural adjustment programmes – Kenya developed the Sessional Paper number 6 of 1986 that guided the liberalization. This same liberalization led to splits and mergers of cooperatives – the overall effect was the split of profitable cooperatives into small uneconomic units. This decline saw the production of coffee decrease by 50% between 1988 and 1998. Tea and horticulture sectors, that are not managed through cooperative movement were not affected and had remarkable increase in their contribution to GDP.

Efforts to revitalize the coffee cooperatives have been coming from various stakeholders. Coffee production is likely to increase to over 100, 000 tonnes per year, where it was in 1980s, if the farmer gets an income she deems to be fair. Strategies must, therefore, be formulated to increase the income earned by the farmers. This income is the principal measure of the performance of a cooperative society. Various researchers have suggested ways of improving cooperative societies mainly through improving the coffee production. This study will focus on evaluating the factors that influence the performance of Kenya coffee cooperatives. The mediating role of entrepreneurial orientation was also be evaluated.

1.1.4 Success factors of cooperative societies

Researches have been conducted on the necessary factors that ensure cooperatives are engaged in profitable businesses. This section highlights some of the work that has been carried out in the area. This study focuses on firm level factors of success that are within the cooperative. Damian (2013) proposes the following as vital for the success of agricultural cooperatives based on Japan experience; Cooperatives must be member driven; member controlled and member responsive; Cooperatives must be run by trained, experienced and qualified staff; Cooperatives must be run by democratically trained boards who are well remunerated and practice good governance.

The cooperatives must undertake value added operations including technology, forge forward integration in order to gain reasonable competitive advantage; Finally, the cooperatives must strive to be self-reliant. The success factors of an agricultural cooperative society include produce of high quality, vertical integration, membership volume, diversification as well as

technology level (Nyoro & Komo, 2005). To measure the success or performance of a cooperative one should consider percentage increase in the welfare of members, retention of members, growth of capital, percentage of members who are active and timeliness in payment (Padmakusumah, 2012).

This study identified factors that are likely to improve the performance of cooperative societies. Five factors that were found to be most appropriate in coffee cooperatives are discussed below. These are coffee production level, quality of coffee, diversification to non-coffee businesses, integration along the coffee value chain and pursuit of non-traditional coffee markets.

1.1.5 Coffee Production Level

The success of a cooperative has a positive correlation with the quantity of the cooperative product that it sells. It is also dependent on 'other incomes' and market access, (Azadi et al. 2010). The International Cooperative Alliance formulated some seven principles that guide the cooperatives in the world. Engaging in high coffee production is in line with one of the cooperative principles, 'members' economic participation'. When all members participate actively then the coffee produced will be high. Cooxupe, the largest coffee cooperative in the world, offers technical assistance to members to ensure the production is high. Production is one of its main strengths which keeps it on top. In Mexico and Peru, the level of production/yield rather than the premiums paid by the certification partners is the mainly significant factor in increasing the net cash returns for coffee growers, (Bradford & Weber, 2011).

1.1.5.1 Coffee Quality

The price at which the coffee from a coffee cooperative fetches determines the income that the cooperative receives from the market. This is because income is basically the quantity of coffee multiplied by the price. Price is a function of quality of a commodity or a good in the market. Quality of coffee emanates from a mixture of its topographical conditions, botanical variety, conditions of weather and the care taken at the time of growth, harvesting, storage and preparation of export as well as transport (ITC, 2002).

1.1.6 Diversification to non-Coffee Businesses

The other determinant of coffee cooperative performance is the diversification strategies implemented. Coffee production level and coffee quality are mainly dependent on three out of four factors that are beyond human intervention. As such when the factors are unfavourable the coffee cooperative earnings suffer. Diversification to non-coffee businesses is a sure way of mitigating this challenge. A firm which is diversified is the one concerned in the production of numerous goods as well as services that makes it a multi-product firm (Czynski, 2005).

Diversification can take various forms like product extension, market diversification or pure diversification (Selen, 2011). Product diversification is where a firm makes a product that is strongly related to its existing products, market diversification is where the firm goes to a different geographical market with similar products line (Czynski, 2005). Diversification is an important strategy in agricultural firms for mitigating varying degrees of risks and uncertainties which surround agricultural production (Kiprono, 2012).

Agriculture production is more prone to diversification because, although all sectors are prone to risk and uncertainty agriculture is more prone to natural and climatic risks (Culas & Mahendrajah, 2005). A case in point of how agriculture is prone to uncertainties is Parana, a state in Brazil. In 1975, the state had projected production of 10.5 million bags of clean coffee (48% of Brazilian coffee) The state experienced frost damage that brought the harvest down to a mere 20, 000 bags (Ferreira, 2004). The world's largest coffee cooperative, Cooxupe, recognized the importance of diversification and got engaged in grains trading to mitigate the challenge. The cooperative also got engaged in a unique strategy uncommon in Brazil, the geographical diversification. It acquired five cooperatives in different regions to mitigate the challenge of unfriendly weather.

Diversification stabilizes income and also increases income of the firm. Brazil coffee sector started a high notch diversification due to climatic disasters (Ferreira, 2004), they have diversified and now grow pepper. In Africa, a study by Kanyua, Ithinji, Muluvi, Waluse & Obedy (2013) revealed that decline in income due to fall of global commodity prices had made Sub-Saharan Africa firms to diversify to high value agricultural products. Here in Kenya, highly diversified firms in Konoin, were found to have a bigger gross margin than less diversified firms. Most of the cooperatives at one time or the other face economic struggles. To overcome these hardships, they increase their operations though increasing of associates, these associates include coopting business members who are not members of the cooperative, (Martins & Wagner, 2014).

1.1.7 Integration along the Coffee Value Chain

The degree of integration determines the performance of the cooperative. A firm may be horizontally integrated, vertically integrated or not integrated. Vertical integration may be either forward or backward integration. The forward integration allows the manufacturer to run the side of demand better by directly controlling the price of retail. Back ward integration involves having the business take some charge of some of the functions of firms supplying his business. Vertical integration refers to the degree to which an organization controls the inputs of production or supplies as well as the outputs distribution of the finished products (Fernades & Tang, 2012).

Coffee sector in Kenya has been declining since 1980s whereas the cut flower sector has been thriving. This disparity can be ascribed to the fact that farmers of cut flower participate in every stage of the value chain unlike in coffee (Chege, 2012). Integration improves financial performance of a firm (Roder, 2007). Within an industry, horizontally integrated firms out performed others due to probably the reduction of transaction costs and efficient use on internal capital markets (Selen, 2011). Degree of vertical integration is positively interrelated with performance of the firm (Roder, 2007).

1.1.8 Entry into Non-Traditional Markets

In Kenya, coffee has always been sold through the central auction in Nairobi's Wakulima house. After the year 2000, many changes have been witnessed in the sector especially on the marketing side of the coffee trade. The marketing was liberalized allowing more millers and marketing agents in the arena. Coffee cooperatives have been, for about 15years, marketing

small proportions of their coffee to nontraditional markets such as certified markets and direct sales. A ‘direct sale’ is contractual agreement between the grower, a marketer and buyer situated outside Kenya for the clean coffee sale founded on equally accepted terms and conditions enforceable in law and registered by the Authority (AFA, 2013). Certification in agriculture helps farmers’ access niche markets where they enjoy enhanced prices and price premiums. Cooxupe adopted this strategy and increased its exports to specialty coffee markets by 8%.

1.1.9 Entrepreneurial orientation

Entrepreneurial orientation is the tendency of firms to carry out their activities entrepreneurially. It has three dimensions; proactiveness, risk taking and innovativeness. Research has come up with two other dimensions; competitive aggressiveness and autonomy. Entrepreneurial orientation is important as studies have shown its importance in improving the performance of organizations. In Nigeria for example studies show that positive association exists between two dimensions of entrepreneurship, (proactiveness and competitive aggressiveness) and an organization’s return on assets and return on equity (Olawoye, 2016). Entrepreneurial orientation was as well revealed to have a mediating effect on the association between an organizational culture and policy of the government and business performance in Indonesia (Korry, 2013).

In Kenya Karanja and Mwangi (2014) also found proactiveness and managerial competence to have a strong relationship with the growth of the Small and medium enterprises (SMEs). This positive growth is what is needed to reverse the negative growth of coffee cooperatives

since 1989. A study conducted in Iraq on the agricultural cooperatives concluded that entrepreneurial orientation has an immense potential in getting better the living conditions of the rural masses through their agricultural cooperatives (Hosseini, 2012). In this study the entrepreneurial orientation will be considered as a mediating variable.

1.2 Problem Statement

Coffee is an important global commodity that is grown in over 50 countries and is the source of livelihood for over 25 million families globally. Coffee is mainly grown by either large scale farmers or small scale. The large scale estate farmers usually wet mill their own coffee in own pulping factories whereas the small holder farmers form cooperatives where they pool their coffee and wet mill it jointly.

In Kenya the coffee cooperatives' performance declined after 1980s mainly due to two scenarios; The collapse of coffee quota system that depressed coffee prices and the introduction of structural adjustment programmes by the World Bank and the IMF. The Ethiopian coffee cooperatives also faced a similar challenge after an incomplete liberalization due to lack of competent manpower. The same scenarios faced many other coffee growing countries.

With the collapse of the quota system, the Kenya's coffee cooperatives absorbed the full shock of the plummeting world prices. The production of coffee in Kenya decreased from 130, 000 metric tonnes in 1988 to 37, 000 metric tonnes in the next 25 years. This greatly affected the coffee farmers' cooperatives performance. The decline in coffee cooperatives' earnings was made even worse by the poorly implemented Structural Adjustment Programs (SAPs)

supported by the World Bank and the International Monetary Fund in 1980s as well as 1990s. The programmes geared towards structural change had been initiated in Africa after leading organizations like cooperatives and parastatals performance started declining after independence. The SAPs removed the control of cooperative societies, parastatals and other organizations from the state and were privatized.

The leadership in these organizations lacked entrepreneurial and business skills. This saw the cooperatives split and others merge into uneconomical units. The end result was collapse of coffee cooperatives which made coffee farmers abandon coffee farming.

The government and development agencies have since come up with many programmes to bring the coffee cooperatives back on track. Sessional paper No. 6 of 1997 on 'Cooperatives in a liberalized Economic Environment' was established to provide framework for the cooperative development in Kenya. The European Union established STABEX (stabilization of exports) fund also aimed at improving the exports competitiveness in Africa, Caribbean and Pacific (ACP) countries. Though it was expected that this would improve the coffee cooperatives since almost all coffee they produce is exported, the fund didn't assist much. The cooperatives seemed reluctant to apply for financing from the financial institutions managing stabex funds. This reluctance to take up funds designated for the cooperatives and yet their performance was wanting is a further proof of lack of entrepreneurship on the part of management. The government of Kenya, in 2005, established the Coffee Development Fund (CoDF) to aid the ailing cooperatives. Later the government waived all the debts owed by coffee cooperatives. In 2016 on realizing that the coffee cooperatives were still performing poorly the president of Kenya established a 19-member task force to look into ways of

reviving the sector. Since then its recommendations have been rejected by some coffee farmers who together with the Council of Governors went to court and successfully sued the cabinet secretary of agriculture and the attorney general.

Most interventions discussed above came from outside the cooperatives and mainly involved financing from outside the cooperatives. This research therefore seeks to identify the firm level factors that are within the cooperative society that influence the performance of the societies. The identified factors are coffee production level, coffee quality, integration along the coffee value chain, diversification into non-coffee businesses and entry into non-traditional markets. It further seeks to evaluate the mediating effect of entrepreneurial orientation. Studies carried out have established mediating effect of the entrepreneurial orientation on the performance of firms.

The research aims at coming up with a model to guide the coffee cooperatives and also other cooperatives on how to optimize their performance. The study, therefore seeks to answer the question, what should be done to the coffee cooperatives for their performance to improve and be sustainable?

1.3 General Objective

To evaluate the firm level factors that influence the performance of coffee cooperative societies in Kenya and examine the mediating effect of entrepreneurial orientation.

1.3.1 Specific Objectives

i. To assess the effect of level of coffee production on the performance of Kenya coffee cooperative societies.

ii. To analyze the effect of quality of coffee on the performance of Kenya coffee cooperative societies.

iii. To assess the effect of diversification to non-coffee businesses on the performance of Kenya coffee cooperative societies.

iv. To analyze the effect of level of integration along the coffee value chain on the performance of Kenya coffee cooperative societies.

v. To assess the effect of entry into non-traditional markets on the performance of Kenya coffee cooperative societies.

vi. To analyze the mediating role of entrepreneurial orientation on the relationship between key firm factors and the performance of Kenya coffee cooperative societies.

1.4 Research Hypothesis

H_{01}: Level of coffee production has no influence on the performance of Kenya coffee cooperative societies.

H_{02} The quality of coffee produced has no influence on the performance of Kenya coffee cooperative societies.

H_{03} Diversification to non-coffee businesses has no influence on the performance of Kenya coffee cooperative societies.

H_{04} Integration along the coffee value chain has no influence on the performance of Kenya coffee cooperative societies.

H_{05} Entry into non-traditional markets has no influence on the performance of Kenya coffee cooperative societies.

H_{06} Entrepreneurial orientation has no mediating role on the relationship between some key factors and the performance of Kenya coffee cooperative societies.

1.5 Significance of the Study

The results of this study provide objective and evidence based framework that shows the relationship between performance of coffee cooperatives and some well documented and measured factors. The study came up with a model that clearly shows how coffee cooperatives' performance can be improved. The model is a linear regression equation that shows how production, quality of coffee, diversification and non-traditional markets influence the performance of cooperatives. The model is a yardstick that will guide the coffee cooperatives to improve their performance so as to improve their service delivery to members. The model will also benefit non-coffee cooperatives both in agriculture and non-agriculture as it is generic and can benefit the cooperatives regardless of its nature of activities.

The research findings will greatly contribute to the vision 2030's cash crop objectives. Increase in coffee production will be benefit the economic pillar which aims at increasing small holder coffee production by 76%. The increased coffee production will support the manufacturing sector which is also part of the economic pillar. This will also support the big 4

agenda of the current government. The end result of this will be poverty reduction and wealth creation.

The County governments in Kenya's coffee zones will be able to use the model to develop their coffee sub sector and cooperatives in general. The study will inform policy on ways of improving coffee sector and the cooperatives. The policy will use the findings to formulate marketing policies to avoid overreliance on traditional markets. The relationship between entrepreneurial orientation has been documented in other countries like Japan. Little on the subject is documented in the Kenyan context. This study, therefore, serves to extend the existing knowledge on this aspect. A lot has been documented on governance in coffee cooperatives but no study was found that comes up with a model on improving the performance of coffee cooperatives. Most studies were found to have embarked on the history of cooperatives and their decline. Comparing studies done about variables, there is more on moderation than studies on mediation, this study will therefore advantage researchers interested in mediation studies.

1.6 Study's Limitations and Delimitations

This section highlights the main limitations that were encountered in the study as well as the delimitations.

1.6.1 Study's Limitation

Coffee sector has of late experienced coffee theft which made the management of coffee cooperatives not comfortable with strangers. This was mitigated by having the local county

government officials who introduced the researcher to the coffee cooperative society respondents. Representative sampling was also used to reduce the number of respondents thus easing the limitation.

1.6.2 Delimitation of the Study

This study covered the smallholder coffee community in Kenya. The small holders had some unique characteristics that made it ideal to study them separately from the estate farmers. The study was only concerned with Kenya coffee as it had its unique characteristics. The literature review revealed five dimensions of the entrepreneurial orientation. Their individual influence on the performance of a coffee cooperative was determined. The literature has also revealed some seven measures of a cooperative's performance which were; Income, cherry production level, price, coffee quality, integration, diversification and alternative coffee markets.

1.7 Study's Assumptions

The first assumption in the study was that the respondents would be honest and candid. Though care was taken to gauge respondents who were reliable it may not have been possible to be a 100% sure of the honest of any one respondent. The study also assumed that the respondents had a good understanding of the coffee value chain. This would ensure that the respondent answers the questions with some level of accuracy. Finally, the study assumed that the respondents had interest in participating in the exercise with no hidden motive.

1.8 Operational Definitions of Terms

Auction This refers to the system of auction under which coffee is presented for sale at the Nairobi Coffee Exchange (Crops Act, No. 16 of 2013, Laws of Kenya)

Bag of coffee This is a clean coffee bag that weighs 60 kilograms (Crops Act, No. 16, Laws of Kenya).

Buni Coffee dried in the fruit or cherry (Crops Act, No. 16 of 2013, Laws of Kenya)

Certification A formal procedure by which an accredited person or agency assesses and verifies that individuals or organizations carry out operations in accordance with some established requirements or standards (Bacon et al. 2011).

Cherry The fruit of a plant of genus coffea that mostly contains two seeds enclosed by pulp and outer skin. Also called coffee bean. (Crops Act, No. 16 of 2013, Laws of Kenya)

Clean coffee The polished coffee bean after removing the skin and the parchment husk. It is ready for roasting and grinding. (Crops Act, No. 16 of 2013, Laws of Kenya)

Coffee certification A system that distinguishes a coffee product as being sustainably grown on the basis of economic viability, environmental conservation, and social responsibility and ensures traceability (Crops Act, No. 16 of 2013, Laws of Kenya)

Coffee A genus of flowering plants whose seeds, called coffee beans, are used mainly to make various coffee beverages. It is a plant botanically known as coffea species and includes fruit, whether on the plant or detached therefrom, buni, parchment coffee, roasted seeds, ground coffee or the coffee liquor (Crops Act, No. 16 of 2013, Laws of Kenya)

Coffee dealer A company that is licensed to buy coffee at the Nairobi Coffee Exchange (Crops Act, No. 16 of 2013, Laws of Kenya)

Coffee production level The volume of coffee produced by grower(s), a tree or a cooperative society. (Minae at al, 2014)

Coffee year ICO accounting period. In Kenya it runs from 1st October to 30th September, (ICO definitions).

Cooperative society An autonomous peoples' association united willingly to attain their social, cultural as well as economic needs via jointly owned and democratically owned and controlled business, (ICA).

In Kenya a cooperative is a co-operative society registered under the Co-operative Societies Act, 1997, (Crops Act, No. 16 of 2013, Laws of Kenya)

Diversification Refers to means by which an organization develops from its core business into other businesses (Athar et al. 2015)

Entrepreneurial Orientation It's a multidimensional construct, useful at the organizational level, which characterizes entrepreneurial behavior of the firm and includes one or more of these five dimensions: innovativeness, pro-activeness, risk-taking, competitive aggressiveness and autonomy (Manalel & Baabu, 2016).

Grower (coffee) Any individual cultivating coffee in any area in Kenya and is registered with the Coffee Directorate and includes co-operative union, a co-operative society, association of growers or owner of a plantation (Crops Act, No. 16 of 2013, Laws of Kenya)

Horizontal integration The process where a company increases goods or services production at the similar level of the supply chain it is in. This is commonly done through internal expansion, acquisition or mergers (Lin Ting 2012).

Marketing agent A grower licensed by the Coffee Directorate to market his or its clean coffee, or any person suitably licensed by the Board and selected by the grower through a precise agreement to market the clean coffee of the grower (Crops Act, No. 16 of 2013, Laws of Kenya)

Milling Mechanical hulling or dehusking of coffee and includes grading of clean coffee (Crops Act, No. 16 of 2013, Laws of Kenya)

Nairobi Coffee Exchange Refers to the central coffee auction which is the coffee trading floor (Crops Act, No. 16 of 2013, Laws of Kenya)

Parchment A coffee bean after removal of the skin but still with its parchment husk.

Performance This is how well an organisation is creating value through delivering to its customers and other stakeholders (Moullin, 2017)

Quality The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs (International Organization for Standardization, ISO).

Smallholder A grower cultivating coffee in a small parcel or in small parcels of land who does not possess his own pulping station (Watheri, 2014).

Vertical integration A competitive approach by which an organization takes total control over one or more stages in the products' distribution or

production. An institution might thus take control of its supplies and/or distribution of the product it produces (Dongli, 2013).

1.9 Research Gaps

Several writers have written on the subject. This include studies carried out in cooperatives and coffee cooperatives in particular. Most of the studies evaluated had been in the areas of management and governance. None of the studies has concentrated on the frim level factors. This study concentrated on firm level factors as they are the ones that the management can easily intervene to improve the cooperative's performance. Instead of looking at the governance this study concentrated on the entrepreneurial capacity of the cooperative management. Wanyama (2009) admits that not much has been documented about the uncontrolled era of coffee cooperatives. Table 1.1 below summarizes the past studies carried out outlining the knowledge gaps.

Table 1.1: Summary of Literature and Knowledge Gaps

Study	Focus of Study	Findings	Knowledge Gaps	Focus of this study
Mungai M.M.A & Ngugi K. (2014)	Influence of entrepreneurial orientation on growth of micro and small enterprises in Kerugoya, Kenya.	Innovativeness, proactiveness, risk taking and managerial competence influence the growth of MSEs.	This narrowed down on four dimensions of the entrepreneurial orientation	This study focused on 5 dimensions of the entrepreneurial orientation
Olawoye O. JKUAT (2016)	Role of entrepreneurial orientation on performance of firms in the Nigerian stock exchange	Innovation and risk taking have positive relationship with performance of firms in Nigeria	This study was in Nigeria The focus was on two dimensions of entrepreneurial orientation	The focus was Kenya and specifically the coffee cooperatives This study considered all the five dimension of entrepreneurial orientation
Osoro, W.N. (2012)	Entrepreneurial orientation effects on business performance of small and medium enterprises in the I.T. sector	SMEs should enhance entrepreneurial orientation to improve performance The government should set	This was done in IT sector and in Nairobi	The study focused on coffee sector and Nairobi wasn't within the scope.

	in Nairobi	policies on training on entrepreneurship		
Hossein M. & Eskandari F. (2013)	Investigating the entrepreneurial orientation and firm's performance in the Iranian agricultural context	Performance of a firm is enhanced by risk-taking behavior, proactiveness and innovativeness	This concentrated on three dimensions	This study included autonomy and competitive aggressiveness
Kuguru P.N. & Kanyanjua D. (2015)	Factors affecting the performance of coffee industry in Kenya. A case of Mathira constituency	Quality of coffee, growers' capacity, government policy and marketing process are the vital factors of performance of the industry	The study included the extrinsic factors like the government policy	This study focused on the firm level factors
Mahazril A., Zuraini Y. & Hafizah H.A. (2012)	Factors affecting cooperatives' performance in relation to strategic planning and members' participation	Though strategic planning and members' participation are important factors of performance, their relationship with performance is weak	The study had two independent variables.	This study had six factors indicated in the objectives.

Hossein A. et al (2010)	Factors influencing the success of animal husbandry cooperatives. A case study of South West Iran	Success of the cooperatives is influenced by technical knowledge, market access and investment	The was a study in animal husbandry cooperatives	This study was conducted in coffee cooperatives.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter explains briefly the entrepreneurship theories which formed the study's basis. It also discusses the factors that influence the performance of a coffee cooperative society in Kenya. These factors are the coffee production level, coffee quality, diversification to non-coffee businesses, integration along the coffee value chain and entry into non-traditional coffee markets. The chapter also discusses the entrepreneurial orientation concept and how it mediates the association between the dependent and independent variables. At the end of the chapter is a conceptual framework that has five independent variables that impact on the performance of a cooperative (dependent variable) with the entrepreneurial orientation mediating the relationship.

2.2 Theoretical Framework

A theoretical structure is an accumulation of some interrelated ideas. It relates to the subject being studied and serves to give the study a specific point of view through which to look at the theme of the study. This study adopts the entrepreneurship theories. Entrepreneurship basically entails combining resources to create value that is much needed in the coffee cooperative societies.

2.2.1 Entrepreneurship Theories

Entrepreneurship concerns the combination of different and relevant resources in innovative ways for new products introduction, new processes establishment, new markets, new raw materials, to alter the status quo market arrangements through innovation, (Olawoye,2016). Entrepreneurship involves either taking advantage of a situation to create a new venture or revitalizing an already existing venture. An entrepreneur is a person who is able to see an opportunity and take advantage of it by organizing resources and risking the same resources to create value out of the opportunity. Several theories of entrepreneurship have been advanced. Each of the theories may be classified into one of the six main categories (Dontigney, 2011); Economic theory, Exposure theory, Resource based theory, psychological theory, sociological theory or opportunity – based theory.

2.2.1.1 Economic Entrepreneurship Theory

Entrepreneurship will take place where particular economic conditions are favorable, (Papanek & Harris, 1999). Economic incentives are the basis of entrepreneurial activities. This theory considers economic incentives to be the key drivers of entrepreneurship. Examples of aspects of economic drivers are capital and credit availability, human capital, productive resources, transport and communication facilities and others. In Kenya there are economic opportunities for entrepreneurs to invest in diversification to other non-coffee businesses, integration along the coffee value chain. Globalization has given opportunities for the coffee cooperatives to operate in the international economy through seeking non-traditional markets. Coffee business will thrive well where there are economic incentives to support. The coffee

business is supported by well-functioning institutions, auction system that is in place and presence of banks that support businesses. However, the expensive financing by the commercial banks limit the coffee sector. Kenya has economic incentives that encourage the coffee cooperatives to operate efficiently. Although the tax system in Kenya is considered a bit prohibitive to do business compared to many other countries the tax on cooperatives and agricultural products is lenient. Economic theory fails to explain the upheaval generated by the entrepreneurs of the industrial age, (Murphy, Liao & Welsch, 2006). Nash (1986) dismisses the economic theory as it purports to be a complete explanation of entrepreneurial actions yet different economic situations have been seen to facilitate entrepreneurship equally.

2.2.1.2 Exposure Entrepreneurship Theory

Disclosure to opportunities towards creativity and innovation as well as ideas lead people to create new ventures, (Sequeira & John, 2007). Education through classes and lectures as well as exchange visits aids in the creation of the awareness. Exposure of coffee farmers will give them ideas on how to improve their farming businesses through increasing production, certification, diversification, quality enhancement and integration. The exposure to the international markets through certification schemes makes the cooperatives know the requirements of niche markets and serve their requirements with their specialty coffee brands. This theory has been criticized because there are great entrepreneurs who haven't gone for any training either formally or informally.

2.2.1.3 Resource Based Entrepreneurship Theory

This theory has it that a firm's competitive advantage is based on the unique resources that it possesses. Businesses are built using the resources and capabilities that the owners have. Superior performance by a firm may be realized by a business over competitors by having unique resources that could be tangible or intangible, (Alvarez & Busenitz, 2001). These are then harnessed into strengths or weaknesses. Resource also include cognitive capability of individual entrepreneurs to identify opportunities. It also includes opportunity seeking behaviour of individuals, (Alvarez & Busenitz, 2001). In the coffee cooperatives the resources that could give competitive advantage would include farmers' knowledge and ability, equipment and the intellect of the management committees. Kraaijenbrink et al. (2009) argue that there is no evidence that resources give a firm any competitive advantage. The theory needs to be developed into a more viable theory of competitive advantage.

2.2.1.4 Psychological Entrepreneurship Theory

Schumpeter claimed that entrepreneurs are motivated by will to power and conquer. McClelland (1948), claimed that need to achieve is the drive that wheels the entrepreneurs. This achievement desire is inculcated when children are young. Entrepreneurial activities are likely to exist in a society that has an adequate individuals supply who possess various psychological characteristics. The major ones include ability to perceive things in an innovative way, urge to perform something, urge to fulfill a dream, will and energy to conquer fixed habits of thought, capability to endure social opposition as well as high want for attainment. When the coffee cooperative management has members with certain personal traits

for example management skills, need to achieve, locus of control, high level creativity, optimism then they are likely to lead the cooperative to various innovations that will lead to improved earnings through production enhancement, quality improvement, diversification, integration and even market innovations. This would improve the performance of the coffee cooperative greatly.

However, Kwabena (2011) criticizes the psychological theory as one that is not supported by research evidence.

2.2.1.5 Opportunity Based Entrepreneurship Theory

Social, technological and cultural environment that people exist in offers opportunities which people take advantage of to benefit. Schumpeter views entrepreneurs from their pursuit of economic opportunities, (Bula, 2012). An opportunity is a means which new goods and services are introduced and implemented into the marketing system, (Shane & Venkataraman, 2000). Entrepreneurs do not cause change but exploit opportunities that come with change, (Drucker, 1985). An entrepreneur is always in search of change, takes it positively and exploits it to benefit. In change, an entrepreneur sees more opportunities than problems. Opportunities are infinite and endless, just like the waves of the sea, (Dangote, 2005). The misfortunes that the coffee cooperatives have faced are an opportunity for them to create value for the benefit of members. The decline in coffee prices offers opportunity for the cooperatives to engage in non-coffee initiatives such as diversification to other businesses such as transport, real estate or even non-coffee agriculture and make a fortune for its members. They could also integrate either horizontally or vertically to maximize their profits. Innovation on cheaper

ways to improve production and quality are also opportunities to improve income of the cooperatives. Currently there is an opportunity for cooperatives to earn more through increasing production since the prices are favourable yet production is very low. This research will be rooted in the opportunity theory as it best explains how all the five variables offer an opportunity in optimizing the cooperatives income. Opportunity based entrepreneurship is elaborated in Figure 2.1 below.

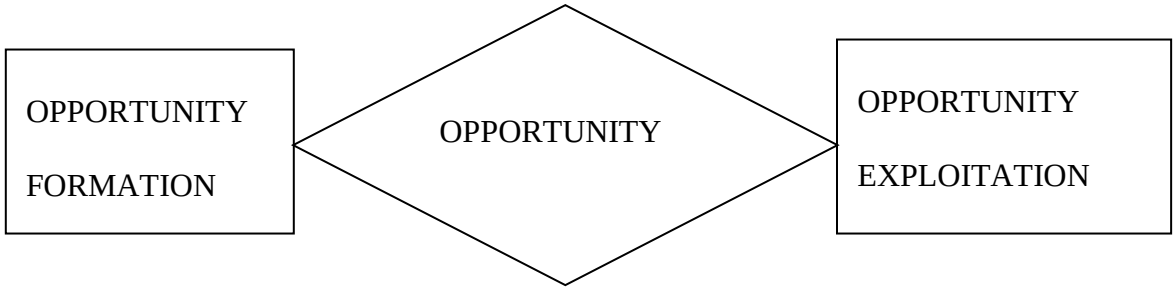

Figure 2.1: Opportunity based entrepreneurship
Source: Venkataraman, (2000).

Though this theory has been argued strongly, Murphy and Marvel (2007) feel that although the process of entrepreneurship starts with the opportunity discovery it entails other very important elements like availability of resources, managing the going concern and growing the business.

2.3 Empirical Literature Review

Following the decline of coffee cooperatives' performance in Kenya, interventions necessary to bring the sector back to high performance and beyond need to be designed. This section introduces and discusses in detail some of the necessary interventions or factors that influence

the Kenyan coffee cooperatives performance and even beyond. Damian (2013) proposes the following as vital for the success of agricultural cooperatives based on Japan experience; Cooperatives must be member driven; member controlled and member responsive; Cooperatives must be run by trained, experienced and qualified staff; Cooperatives must be run by democratically trained boards who are well remunerated and practice good governance.

They must undertake value added operations including technology, forge forward integration in order to gain reasonable competitive advantage; Finally, the cooperatives must strive to be self-reliant. The success factors of an agricultural cooperative society include produce of high quality, vertical integration, membership volume, diversification as well as technology level, (Nyoro & Komo, 2005). The performance of a cooperative society may be measured using many parameters. These parameters must determine the cooperative society's ability to achieve the economic, cultural and social needs of the members. To determine the performance of a cooperative one should consider percentage increase in the welfare of members, retention of members, growth of capital, percentage of members who are active and timeliness in payment, (Padmakusumah, 2012).

This study identifies some five factors that could improve the performance of coffee cooperatives in Kenya. These are coffee production level, quality of coffee, diversification to non-coffee businesses, integration along the coffee value chain and pursuit of non-traditional coffee markets. The study also seeks to evaluate whether entrepreneurial orientation arbitrates the association of the factors and the performance.

2.3.1 Coffee Production Level

The success of a cooperative has a positive correlation with the quantity of the cooperative product that it sells. It is also dependent on 'other incomes' and market access, (Azadi et al., 2010). The International Cooperative Alliance formulated some seven principles that guide the cooperatives in the world. Engaging in high coffee production is in line with one of the cooperative principles, 'members' economic participation'. When all members participate actively then the coffee produced will be high. In Mexico and Peru, the level of production/yield rather than the premiums paid by the certification partners is the mainly significant factor in increasing the net cash returns for coffee growers, (Bradford & Weber, 2011). The production is in turn dependent on weather. Whenever frost has af1fected coffee, the production has always reduced drastically. An example is 1994 and 1997 frost attack in Brazil, (Chaddad, 2007). In the same Brazil in 1975 frost made the projected coffee production reduce by over 90%, (Ferreira, 2007). Production of coffee in Kirinyaga was found to be dependent on access to sufficient credit and having money from additional enterprises, (Mbataru, Minae and Nyairo 2014).

Coffee production can be measured in terms of tonnes or bags of clean coffee or kilos/bags of cherry or bags. The global production is mainly reported as 60 kgs bags. Production in producer countries is expressed mainly in bags of clean coffee and in tonnes of clean coffee. At the primary processing factory, production is reported in kgs of cherry. Minai & Mbataru (2014) in their research on coffee production in Kirinyaga used kgs of cherry produced by per tree. Nsibirrwa (2006) measured coffee exports in 60 kg bags. In this study the production will

be measured in Kgs of cherry produced by a coffee factory under study. This is also in tandem with Kamau (2014) in her study of coffee cooperatives in Murang'a County, in Kenya.

Kenya's current average annual production is 40, 000 tonnes of clean coffee. This is low given that the country was been able to produce 130, 000 tonnes in 1988. The production can be increased in many ways which fall under these two categories; Increasing the area under coffee and improving the yield per tree. Increasing the area under coffee just involves planting coffee in areas with no coffee. This is happening as counties which didn't have coffee have been seen to be getting engaged in coffee farming.

Increasing production per tree will involve training of farmers on husbandry. Minae et al (2014) recommended this in their study in Kirinyaga County. Once this is done the farmer needs to be facilitated to buy access farm input especially fertilizer and agro-chemicals. Fertilizer improves crop nutrition and hence the tree bears more. Even with the increased production per tree diseases and pests can easily wipe out the crop. It is therefore necessary to have the farmers access the crop protection solutions. Minae et al. (2014) recommends that access to credit will assist the farmer access the agro-inputs. The writers also recommend that the farmers are facilitated to have some non- coffee income or employment which they discovered had a positive correlation to coffee production. The cooperatives should also look into ways of assisting their farmers practice climate smart agriculture to mitigate the menace of climate change.

2.3.2 Coffee Quality

The price at which the coffee from a coffee cooperative fetches determines the income that the cooperative receives from the market. This is because income is basically the quantity of coffee multiplied by the price. Price is a function of quality of a commodity or a good in the market. Quality of coffee emanates from a mixture of its topographical conditions, botanical variety, conditions of weather and the care taken at the time of growth, harvesting, storage and preparation of export as well as transport (ITC, 2002).

Conditions of botany and topography are constants and consequently control the inherent coffee characteristics. Weather cannot be controlled by the farmer. As such the care given to the crop by the farmer is the only variable that he can control. The entrepreneurial activities of the cooperative should yield results in quality improvement. The basic requirements of coffee for the competitive international market are; coffee suitable for human consumption, coffee free from extraneous matter and coffee that conforms to the agreed or stated requirements (ITC, 2002). The international Trade Centre classifies coffee quality into four; One, Exemplary quality which is the top most quality of fine cups. This is rare in the market; Two, High quality which are also fine coffees but not as perfect. Mainstream quality are fair average quality which account 80 -90% of the world coffee (ITC, 2002). Finally, there are under-grades which are poor quality coffees. Coffee quality is influenced by on farm care of coffee, soil quality, harvesting methods, pulping and fermentation method (Dada, 2007). Some soils have developed an imbalanced pH level that are too acidic leading to hindrance of fertilizer and nutrients absorption. The coffee quality is determined by evaluation of three aspects; Green bean analysis, roast coffee analysis and liquor analysis.

In green analysis the clean coffee is evaluated for wellness. The coffee should be compact, greyish blue in colour and medium to bold in size. Deviation from these aspects is a sure deviation in quality (ITC, 2002). The colour should be even and bright. The bean should also be free from defects such as insect damages, diseased beans, coated, pulper nipped and raggedness. In terms of density, light beans are considered to be of lower quality. In the evaluation, the roasted bean is evaluated for quality before it is ground. The roast should be even, bright and free from ears and shells. The coffee should be free from pales and softs. Softs are mainly caused by immature coffee and poor drying. Pales are as a result of bleached, mottled and discoloured beans. At the least the liquor of coffee has to be clean. This means that the liquor has no off flavours. The liquor should have high acidity, full body, and good after taste and balanced overall flavor. Liquor's quality is compromised in case it is over-fermented, has some foulness, is mouldy or is tainted. There are other less serious liquor problems like grassiness, fruitiness, winey, woodiness, commonish and coarseness. Coffee quality determines the income of the coffee produced (Koskei, 2015). In Kenya, coffee quality is determined organoleptically and graded into ten classes, The best being class 1 and the worst being class 10. This method is called Devonshire method and is named after the person who developed it in 1956. The quality was evaluated in terms of percentage of processed coffee that falls in class 1 to class 5.

The world coffee price is guided by the New York coffee exchange and the London International Futures and Financials Exchange (LIFFE). LIFFE is the exchange for robusta coffee while New York is for Arabica, (Chaddad, 2007). The single most influential factor in world coffee prices is the Brazil weather especially drought or frost as witnessed in 1994 and

1997 (Chaddad, 2007). Coffee prices are a function of global coffee availability, world production, world consumption, stocks in the exporting countries and stocks in the importing countries, (ICO 2013). The coffee stocks were high during the time when the global coffee trade was regulated (1965 – 1989). During this period the upward and down ward trends were corrected through the application of quotas.

Arabica coffee prices, nowadays, are greatly determined by the transactions in the New York Board of Trade, an intercontinental exchange in the New York. It mainly offers futures and options for commodities such as cocoa, coffee, frozen concentrated orange juice and cotton. The futures market exists for the purposes of price discovery and price risk transfer. According to ICO coffee prices at the New York Board of Trade are expressed in terms of US cts per pound (Ib). In Kenya both the Nairobi Coffee Exchange and direct sales are done in terms of USDs per 50 kg lots. The price of coffee to a cooperative society may be evaluated in two ways; the highest price realized by the coffee factory and the average price for all coffee sold. This study will adopt the second method of evaluation.

For the coffee quality to be improved, the cooperatives need to adopt all the recommendations outlined in 2.3.1 above. Any factor that increases coffee production also improves quality of coffee. For example, when a cooperative issues farmers with drought resistant coffee seedlings they will be attacked less by diseases and pests so the produce will be more. When the produce is not attacked by diseases and pests the quality defects such as insect damage or antestia damage will be absent which will ensure high quality coffee. Such coffee will fetch good price hence increase the revenue which will resort in improvement of performance. To improve the

quality, the management would need to invest in good manufacturing practices at the primary processing level to ensure that quality of coffee doesn't deteriorate.

2.3.3 Diversification to non-Coffee Businesses

The other determinant of coffee cooperative performance is the diversification strategies implemented. It has been discussed above, that the coffee production is dependent on three out of four factors that are beyond human intervention. As such when the factors are unfavourable the coffee cooperative earnings suffer. Diversification to non-coffee businesses comes in to mitigate this problem. A firm which is diversified is the one concerned in the production of numerous goods as well as services that makes it a multi-product firm (Czynski, 2005). According to Lyandres (2004) diversification is a long recognized tool of risk management that involves numerous enterprises which are un-correlated by design. Managers diversify portfolio mainly to get higher returns and distribute risk, (Athar, 2015).

Diversification can take various forms like product extension, market diversification or pure diversification, (Selen, 2011). Product diversification is where a firm makes a product that is strongly related to its existing products, market diversification is where the firm goes to a different geographical market with similar products line, (Czynski, 2005). Pure diversification is the evolution into not related business activity areas. Diversification may be via internally produced development or through acquisitions and mergers. Firms diversify to maximize growth, create barriers for others not to enter and also due to the relatedness of the firms. This relatedness would be in terms of markets, technologies or organizational structures. The other reason would be based on resource base. This is where firms seeking for rent diversify in

reaction to surplus productive factors capacity refers to as resources, (Selen, 2011). Diversification is an important strategy in agricultural firms for mitigating varying degrees of risks and uncertainties which surround agricultural production, (Kiprono, 2012).

Agriculture production is more prone to diversification because, although all sectors are prone to risk and uncertainty agriculture is more prone to natural and climatic risks, (Culas & Mahendrajah, 2005). A case in point of how agriculture is prone to uncertainties is Parana, a state in Brazil. In 1975, the state had projected production of 10.5 million bags of clean coffee (48% of Brazilian coffee) The state experienced frost damage that brought the harvest down to a mere 20, 000 bags, (Ferreira, 2004). Brazilian cooperatives diversify due to economic crisis, uncertainties and to increase associates, (Lucato & Martins, 2014). Two factors greatly influence the success of animal husbandry cooperatives in Southern Iran and these are market access and income from other sources besides the normal cooperative business, (Azadi, Hosseinnia, Zarafshani, Heydari & Witlox, 2010).

Diversification stabilizes income and also increases income of the firm. Brazil coffee sector started a high notch diversification due to climatic disasters, (Ferreira, 2004), they have diversified and now grow pepper. Brazilian cooperatives diversify due to economic crisis, (Martins, Rosangela and Lucato, 2012). In Africa, a study by Kanyua, Ithinji, Muluvi, Waluse and Obedy (2013) revealed that decline in income due to fall of global commodity prices had made Sub-Saharan Africa firms to diversify to high value agricultural products. Here in Kenya, highly diversified firms in Konoin, were found to have a bigger gross margin than less diversified firms. Most of the cooperatives at one time or the other face economic struggles. To overcome these hardships, they increase their operations though increasing of associates,

these associates include coopting business members who are not members of the cooperative, (Martins & Wagner, 2014). Diversification is measured by the net income of the alternative enterprises, (Epperson et al. 2006).

Diversification may be determined by measuring the total sales represented by each market or product, (Selen, 2011). Chirani and Effatdoost (2013) proposed a method of measuring diversification as ratio of income from the biggest business unit divided by the whole income of the company. This calculation yields 'Specialty Rate' – SR. An SR of above 0.95 implies that the company is single product company and is not diversified. A rate of between 0.7 and 0.95 is a company that is of high diversity whereas below 0.7 signifies a company with low diversity. In this research diversification will be measured in terms of the income percentage that the cooperative gets from non-coffee business units and activities.

Diversification will ensure that the cooperative has alternative sources of funds when the coffee production is low and also when the prices are depressed. As much as practicable the cooperative should have non-agricultural diversification since when coffee is affected, most likely even the other agricultural businesses would be affected.

2.3.4 Integration along the Coffee Value Chain

The degree of integration determines the performance of the cooperative. A firm may be horizontally integrated, vertically integrated or not integrated. Vertical integration may be either forward or backward integration. The forward integration allows the manufacturer to run the side of demand better by directly controlling the price of retail. Back ward integration involves having the business take some charge of some of the functions of firms supplying his

business. Vertical integration refers to the degree to which an organization controls the inputs of production or supplies as well as the outputs distribution of the finished products, (Fernades & Tang, 2012). A firm must answer the question, "make or buy? (Selen, 2011).

Several theories exist that justify why firms integrate. Michael and Sarah (2009) suggested two theories; Agency theory and transaction theory. Agency theory claims that when a firm is being served by another one there exists some competition due to the different interests of the two firms. This brings tension among the agent and the principal. This would make the principal buy out the agent instead of buying goods and services from him.

Transaction theory has it that the firm may buy some suppliers/retailers to reduce the costs of running his business. Integration leads to achievement of lower costs as well as making the firm take control of quality of inputs, (Michael & Sarah, 2009). Farmers' attitude towards integration mostly depend on the product, (Seung, 2012). Commodities are highly perishable and difficult to store call for forward integration initiatives to make them stable.

Coffee sector in Kenya has been declining since 1980s whereas the cut flower sector has been thriving. This disparity can be ascribed to the fact that farmers of cut flower participate in every stages of the value chain unlike in coffee, (Chege, 2012). Integration improves financial performance of a firm, (Roder, 2007). Within an industry horizontally integrated firms out performed others due to probably the reduction of transaction costs and efficient use on internal capital markets, (Selen, 2011). Degree of vertical integration is positively interrelated with performance of the firm, (Roder, 2007). Apple is highly vertically integrated as it owns and designs its own computer accessories, hardware operating system plus much of its software, (Dongli, 2013). Oracle on the other hand integrated vertically by acquiring Sun in

2010. In oil industry, Exxon Mobil, shell and BP own almost the entire supply chain from oil drilling, transport of crude oil , refining and distribution, (Dongli, 2013).

There exist various forms of integration measures, (Dongli, 2013). In his study on vertical integration and performance Dongli used the degree of integration. This is the proportion of total input or output that a business purchases or sells to other business units within the same company. This study proposes the use of the degree of integration to measure the level of integration.

2.3.4.1 Value Chain Analysis

The integration strategy should begin with a value chain analysis. A value chain is the process or activities by which a company adds value to an article, Prescott (2001). A value chain is a way of conceptualizing the activities that are needed to provide a product or a service to a customer. A value chain model is adopted by firms to gain competitive advantage. All the linkages of a company are finely tuned to give the firm a competitive advantage. Michael Porter proposed a value chain approach that has five primary activities; Inbound logistics, operations, outbound logistics, marketing and sales and services. The secondary activities include procurement, human resource management, technological development and infrastructure. One disadvantage of value chain analysis is that the company's overall strategy and vision may be lost when the operations of a firm are broken into segments.The cooperatives in coffee require a value chain analysis starting with their primary activity which is wet milling members' coffee and get to see where they can add value. This could be in dry

milling coffee, managing coffee firms, provision of credit or even marketing. Such an analysis will dictate the integration strategy that will be most beneficial to the cooperative society.

2.3.5 Entry into Non-Traditional Markets

In Kenya, coffee has always been sold through the central auction in Nairobi's Wakulima house. After the year 2000, many changes have been witnessed in the sector especially on the marketing side of the coffee trade. The marketing was liberalized allowing more milling and marketing agents in the arena. This study will embark on finding out how the entrepreneurial orientation influences the entry into the non-traditional markets. The main focus will be positioning of coffee cooperatives in the niche markets for certified coffee and also partnerships with coffee buyers for directing trading. A 'direct sale' is contractual agreement between the grower, a marketer and buyer situated outside Kenya for the clean coffee sale founded on equally accepted terms and conditions enforceable in law and registered by the Authority, (AFA, 2013).

Another non-traditional market that is gaining popularity is the certified coffee market. Certification refers to a procedure where a third party gives written declaration that a process or a product conforms to a given standard. Certification is done against some standards set up by bodies to guarantee production of goods and services is done in strict adherence to the standards and codes. Standards are documentation of specifications, requirements, characteristics or guidelines that are utilized to guarantee products, materials, services and processes are fit for their intended use (ISO, 2004).

The most common certification standards are the ISO series developed by the International Organization for Standardization; these include ISO 9001, 22000 and 14000. ISO 9001 certification in cement manufacturers gets better performance of a firm in terms of market performance, sales increase as well as increase in market share (Berouiguet, 2015). ISO 9001 leads to improved communication among the employees, cost savings, competitive advantage, access to global markets and increased productivity, (Lamport, 2010).

Certification in agriculture helps farmers' access niche markets where they enjoy enhanced prices and price premiums. Certification of agricultural commodities is largely as a result of consumers who are becoming increasingly sensitive to sustainability. Most certification schemes are prepared with reference to economic viability, fairness, preservation of environment and social responsibility. Various certifications exist in agriculture and specifically in the coffee sector; The certification labels are categorized into three categories; (i) Voluntary labels like fair-trade, organic certification rainforest and UTZ certified. These are not associated with any coffee buying company. (ii) The second category is company based certification labels. Some coffee companies have come up with their own labels like Starbucks' CAFÉ practices, NESPRESSO that is associated with Nestle. (iii) Sector wide certification labels. Common Code for the Coffee Community (4C) falls under this category- The aim of 4C is to unify certification.

Fair Trade was invented 25 years ago to promote equitable market access by Nicaraguan small holder coffee growers, (Zuniga & Reuben, 2010). The large coffee companies, Sara Lee, Nestle and Kraft Foods, in retaliation to the introduction of Fair-trade developed their own private standards like Nespresso and CAFÉ practices. Fair trade certified cooperatives have

more assets and better access to credit. The private standards lead to higher overall income. Private labels lead to stronger performance in production and quality management. The most popular private standard in Kenya is the fair trade. It attempts to build trade networks between environmentally as well as socially concerned customers in the North with the underprivileged producers involved in environmentally and socially sustainable agriculture within the South, (Vakila & Anja, 2008). The coffee farmers benefit economically from these networks especially when the world coffee prices are low, (Ruerd, 2010). Although fair trade ensures a least price for fair trade certified coffee, there is no assurance that the all the coffee will be sold in the fair trade markets.

Fair trade certification sets the minimum price that is paid for coffee and therefore increases the farmers' income, (Vakila, 2009). This fair trade payment comprises of a social premium which has to be utilized by the cooperative in developing the cooperative or the community. In Peru fair trade leads to only modest difference in income and production (Ruben, 2010). In Mexico fair trade strengthens producer organizations and brings improved returns to the producers as a result of training of producers, expanded markets and credit advancement, (Calo & Wise, 2005). Critics of fair trade have argued that the certification scheme has ignored farmers with no land therefore ignoring the extremely poor. There exist other certification labels like UTZ certified, Rain forest, nespresso and many more.

UTZ advocates for responsible coffee, social and environmental justice as well as production quality coffee. Rain forest scheme advocates for conservancy of biodiversity, sustainable livelihoods, proper land use, good business practices and water and soil conservation. In Columbia's Cundimarca region there is no difference in earnings between certified and

noncertified farms, (David & Newsom, 2013). In Santander region certified farms earn twice compared with noncertified ones. In both regions the productions in terms of kilograms of coffee per hectare was higher in the certified farms. Coffee And Farmers Equity (CAFÉ) label advocates for sustainable sourcing of coffee and is championed by the global coffee company, Starbucks. This advocates for economic accountability, social responsibility (measures put in place to guarantee fair safe as well as humane conditions of living strict adherence to least wages and avoidance of forced and child labour, (Wade, 2013). It also advocates for measures of environmental leadership established to protect quality of water, manage waste, conserve energy and water, diversity and reduced use of agrochemicals. Certifications generally lead to productivity improvement, quality improvement, diversification in production, good environment management and helps hedge against market price down turns. The entry into non-traditional coffee markets will be evaluated in terms of the percentage of coffee that is sold through the non-traditional marketing channels.

The cooperatives need to engage coffee trading experts to work on a marketing strategy that will ensure that they leap the most from the non-traditional markets. The current auction market is assured even if no marketing is done at the cooperative level.

2.3.6 Entrepreneurial Orientation

Enhancement of entrepreneurship is one way that the coffee sector can be given life. This is one of the ways which are needed to bring the sector back to its robustness. Entrepreneurship refers to the practice of starting a new firm or revitalizing a mature firm in response to an opportunity, (Eroglu & Murat, 2011). Entrepreneurship will therefore be used by the Kenya's

coffee cooperatives to bring them back to high performance. Entrepreneurial orientation includes the decision making strategies and practices that organizations undertake activities of entrepreneurship, (Lumpkin & Dess, 2001).

Entrepreneurial orientation is a process which includes methods, practices, decision making style a person or a firm uses to act entrepreneurially, (Ejdys, 2016). According to Covin and Slevin, (1989) entrepreneurial orientation is characterized by extensive as well as frequent aggressive competitive orientation, strong risk taking propensity and product innovation by the organization and the top management. Entrepreneurial orientation can be expressed in terms of three dimensions; proactiveness taking of risk taking and innovation, (Miller, 1983; Covin & Slevin, 1989). It has four dimensions namely risk tendency, proactiveness, aggressiveness and innovativeness, (Wang, 2008). Entrepreneurial orientation can be expressed in terms of five dimensions; proactiveness, risk taking, innovativeness, autonomy finally the competitive aggressiveness, (Lumpkin & Dess, 2005). The Entrepreneurial Dimensions may vary independently in organizations, (Lumpkin & Dess, 1996). Each of the entrepreneurial orientation dimensions have their own influence on the firms' performance, (Kreiser et al. 2002).

2.3.6.1 Proactiveness

Proactiveness is how a firm relates or responds to market opportunities, (Lumpkin & Dess, 2001). It is the tendency of a firm to be forward looking. It is the ability of a firm to expect amendments and wants at the place of market and to be the first one to pursue them, (Miller, 1983). The firm acts with anticipation of what will happen in the future. Proactiveness refers to the capability and willingness of an organization to change the environment via new

technologies and products introduction. A proactive organization recognizes opportunities and initiates action to utilize the opportunities. Successful organizations are required to be practical as well as competitively aggressive, (Miller & Freisen, 1983). A proactive behavior implies experimentation through research and development to maintain a constant flow of products, processes and services, (Ejdys, 2016). Proactive organizations scan the environment to see the trends and act in advance. Proactiveness is a characteristic of a market team leader. Karanja and Muthee (2014) argued that proactiveness influences the growth of Small and Micro Enterprises.

A study carried out on Nigerian firms concluded that business performance is a function of a wider strategy of proactiveness, (Olawoye, 2012). This study used a four point Likert scale to gauge proactiveness of firms. The highest being high value (4) and the lowest on the scale being low value (1). Any firm with a score of less than 4 was categorized as being of 'low entrepreneurial proactiveness'. In the study, respondents were asked whether they included product and service innovations in their policies, how they would rate their alertness, how they were risk oriented and whether they had a unit specifically to monitor entrepreneurial opportunities. Proactiveness of an organization can be viewed as a continuum that ranges from passive to aggressive. Proactiveness is also measured by how a firm starts actions which their competitors rise to, the firm is usually the first to start new services, products, administrative technologies and techniques, (Miller, Covin and Slevin 1989).

Coffee cooperatives need to be forward looking as opposed to being reactionary. Prices of coffee are known to be volatile which leads to farmers abandoning coffee farming sometimes.

They should be able to anticipate this and other challenges and come up with mitigation measures to avoid getting disadvantaged by occurrences at the local and international market.

2.3.6.2 Risk taking

Risk taking is described as the tendency to take bold actions whose results and effects are uncertain and unknown, (Lumpkin & Dess, 2001). It is seen in two ways; (i) entering unknown markets and (ii) committing large portions of resources to ventures with uncertain outcomes. An innovative organization seeks to venture into the unknown. Risk taking involves venture into the unknown plus entrusting substantial resources in an uncertain environment, (Deepa & Manalel, 2016). This risk must be a moderated and a calculated risk. Risk taking is a firm's perception towards risky actions and its willingness to engage in such actions. It is also how the organization brings this positive attitude through to its employees as well. Risk has an element of resources and uncertainty, (Baird & Thomas, 1985). It involves taking debt to finance a project venture, resources commitment into a project and finally venturing into the unknown, (Baird & Thomas, 1989). Risk taking is measured through the proclivity of the firm for high risk projects having a likelihood of high returns, (Miller, Covin and Slevin 1989).

Most coffee cooperatives in Kenya have been in existence for over 40 years where they are engaged in the same business of wet milling farmers coffee. Those that are engaged in other alternative business lines are known to be doing it only minimally. Panaggio (2013) claims that when running a company 'playing it safe' is the safest strategy a manager can adopt. However, he advises that risk avoiders are also opportunity 'missers'. The Kenya coffee cooperatives need to get up from their comfort zone engage in other value creating businesses

for their members to benefit. Calculated risk taking will definitely lead to improved performance of the firms.

2.3.6.3 Innovativeness

Innovation is the process of growing good ideas into practical use, it is the core renewal process within an organization that refreshes what the organization offers the world, (Tiddal & Bessant, 2009). It is propensity of a firm to take part in as well as support novelty, new ideas, creative processes and experimentation that might consequence in new services, processes or products. It's the willingness to support experimentation and creativity to introduce new services and products. The term innovation can as well be the ways by which firms pursue new opportunities, (Lumpkin & Dess, 1996).

Innovation is a process that has four distinct stages: search, select, implement and capture The search involves the pursuit of knowledge and information that can lead to innovation. Implementation weaves together the different pieces on knowledge into an innovation. Capture involves getting the actual value from the innovation. This value could be in terms of commercial success, increase market share and customer delight. The outcome could also be the stimuli for going through the cycle again by learning from the successes or failure (Tidd & Bessant, 2009). The innovation cycle is elaborated in figure 2.2 below.

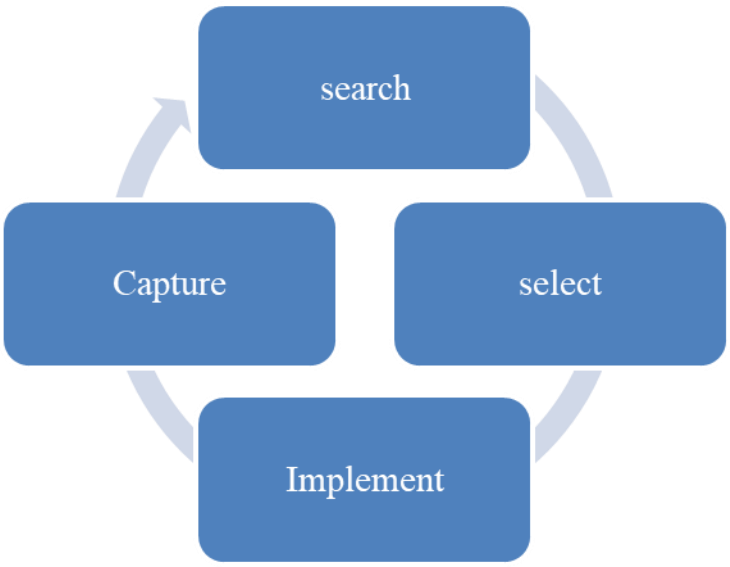

Figure 2.2: Innovation cycle
Source: Bessant, (2009).

There are two innovation models; entrepreneurial model and conservative model, (Davis, 2007). Conservative model describes the innovative practices that a firm engages in to protect its position within the market. Entrepreneurial innovation is where an organization is consistently aggressive in pursuit of being the leader at the market place.

In the Malaysian SME segment, innovativeness and autonomy are directly related to the performance when moderated by human capital and information technology, (Amran, 2009). Innovativeness reflects the tendency of an organization to support novelties, new ideas, experiments and creative processes, (Dai, 2010). The level of innovativeness may be gauged by financial resources allocated to innovation activities, human resources allocated to the activities of innovation, new services or products and changes frequency in services, products as well as processes, (Miller & Friesen, 1982). Innovation is influenced by an organization's leadership, style of management, organizational structure, resources, corporate strategy,

knowledge management, technology, workforce and the process of innovation. Innovation may as well be measured by assessing the number of new products, processes and services, intellectual property for example patents and trademarks and sales of new products, (Rogers, 1998). It may also be measured through the determination of research and development budget and expenditure. Innovativeness measurement should consider introduction rate of new products as well as ways of solving problems, (Covin, 2003).

Innovativeness will make the cooperatives to be able to come up with new ideas to improve operations, products and services, (Hana, 2013). They will be able to diversify, differentiate, increase market share, get new business opportunities and satisfy consumer needs. They will hence earn higher profits which will most likely lead to higher performance.

2.3.6.4 Competitive aggressiveness

This is how firms react to competitive trends in the market place, (Lumpkin & Dess, 2001). It is the organization's tendency to outperform and outshine rivals, (Venkatraman, 1989). This could involve practices like slashing prices, sacrificing profitability and marketing strategies. A close comparison of competitive aggressiveness and proactiveness shows that creation of new resources is proactiveness whereas defending existing resources is competitive aggressiveness. Proactiveness is based on exploration of new resources and opportunities whereas competitive aggressiveness is exploitation of existing resources. Competitive aggressiveness is a 'war like' attitude and an aggressive reaction aimed at improving the competitive position of a firm, (Ejdys, 2016). A competitively aggressive firm is identified by its willingness to be unconventional and doesn't always rely on the traditional competition tactics, (Babu & Manalel, 2016). Cooperatives need to be aggressive to ensure they pay their

growers good rates compared with the other cooperatives. This will have the effect of retention of growers which will interpret to more coffee deliveries and higher performance. When the cooperative s not competitive then growers leave the cooperative for other neighbouring cooperatives which compromises the economies of scale leading to lower performance.

2.3.6.5 Autonomy

This is the tendency to take independent actions both individually and collectively with intent to realize the business aims of the organization, (Ejdys, 2016). It refers to the independent spirit. It refers to the capability of the firm's teams to define own goals and problems and seek ways of achieving the goals or solve the problems to the end. At the individual level, autonomy is the degree to which the organization ensures the independence of the individual. The individual is free to decide what task to do and how, (Rapp et al. 2005). Individual autonomy allows individual proactiveness and hence contribution to the organizational goals, (Karpacz, 2016). Autonomy gives the employee independence, self-reliance and freedom to use the available resources without need to consult every time.

Autonomy may be categorized into two; structural autonomy and strategic autonomy, (Karpacz, 2016). Structural autonomy is the group autonomy or the team autonomy. Strategic autonomy, also called the goal based autonomy is the degree to which the group has control over its goals. The strategic autonomy allows the group and teams to work beyond usual organizational limitations by setting own goals and designing ways of achieving them. Autonomy empowers the individuals and teams and gives them flexibility and freedom to establish as well as endorse initiatives of entrepreneurship, (Lumpkin, 2009).

When the cooperatives management and staff have autonomy then they are free to take risks and do investments on behalf of members which leads to higher performance of the cooperative. When coffee is sold the money remains in the growers account for an average of 4 months before it is paid to the growers – a cooperative with autonomy will give lee way to the management to invest the money in short term and thus increasing the growers' payout rate. In the Brazilian food industries, high entrepreneurial orientation leads to high growth, high performance in financing appraisal, high capability to realize new opportunities, creation and differentiation of competitive advantage, (Dai et al. 2010). In Indonesia the entrepreneurial orientation was revealed to have an important effect on performance of business, (Rohman & Conceicao, 2014).

This study will look into how the entrepreneurial orientation can be used as a variable of mediation in the association between factors which influence the coffee cooperatives performance and the performance of the cooperatives. A mediating variable explains the relation between an independent and dependent variable in an association in such a way that when the intermediary is removed the effect of the relationship between dependent variables and independent variables may go away. The relationship variable is alleged to be mediating when the fundamental effect of an independent variable (X) on dependent variable (Y) is broadcasted through a mediating variable (M), (Preacher, Rucker and Hayes, 2007).

Studies on mediators have been carried out in business and the role of mediating variables highlighted. A study in Malaysia found that orientation of market mediates the association between performance of SME and entrepreneurial orientation, (Amin et al. 2016). The study found out that the higher the entrepreneurial orientation employed in an SME the more it is

ready to employ market orientation which in turn improves performance. A firm's competitive advantage mediates the association between entrepreneurial orientation and the performance of a business of women enterprises in Malaysia, (Mahmoud & Hanafi, 2013). In the study of mediation, it must be demonstrated that the independent variable is connected independently to both mediator and outcome variable, (Baron & Kenny, 1986). The regression coefficient associated with the independent and dependent variables' relationship goes to zero or shrinks when the mediator is introduced into the equation. If it moves to zero when the mediator is added then complete mediation has occurred, if it shrinks then partial mediation has taken place, (Baron & Kenny, 1986).

2.3.7 Coffee Cooperatives Performance Measurement

Cooperatives are business entities that endeavor to satisfy members' economic, social and cultural aspirations. As such income to the cooperative will be used as a measure of a cooperative's success. The factors of success of a cooperative are payout rates, credit accessibility and promptness of paying farmers, (Nyoro & Komo, 2005). Credit accessibility will therefore be used as a performance measure. This will be measured in terms of average cash advanced to the grower. As recommended by Padmakusumah (2012), the study will also measure the percentage of active members. The cooperative is formed to meet its members' social aspirations; this will be measured by the proportion of money invested in community projects. Some non-traditional markets are known to give a condition of investment in community projects near the cooperative's area of operation.

2.4 Conceptual and Theoretical Framework

The conceptual framework summarizing the relationship between the independent variables, the dependent variable and the mediator variable is presented in Figure 2.3 on the next page. The operational framework is also shown in Figure 2.4, that summarizes the variables and how they will be measured.

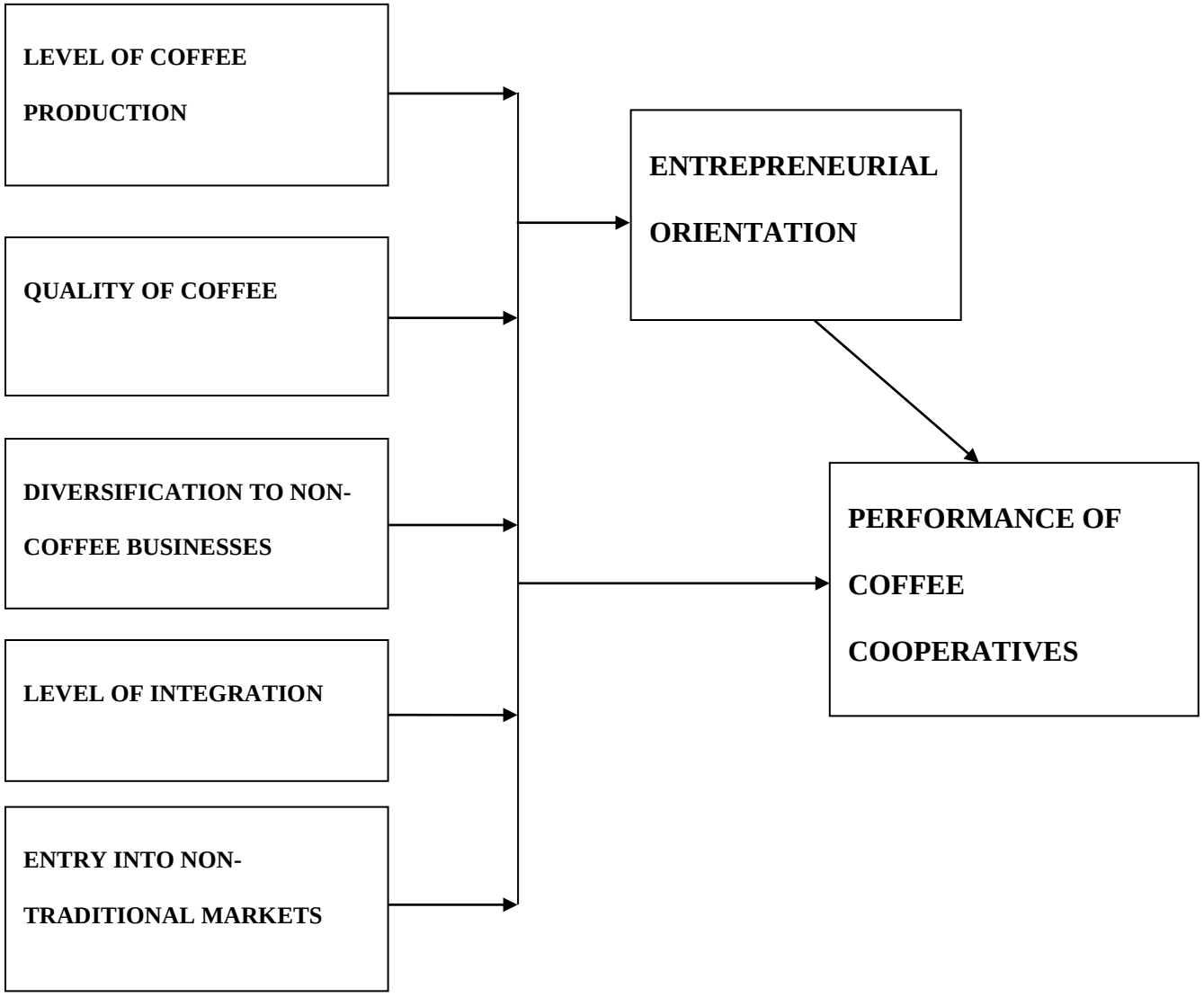

Figure 2.3: Conceptual Framework

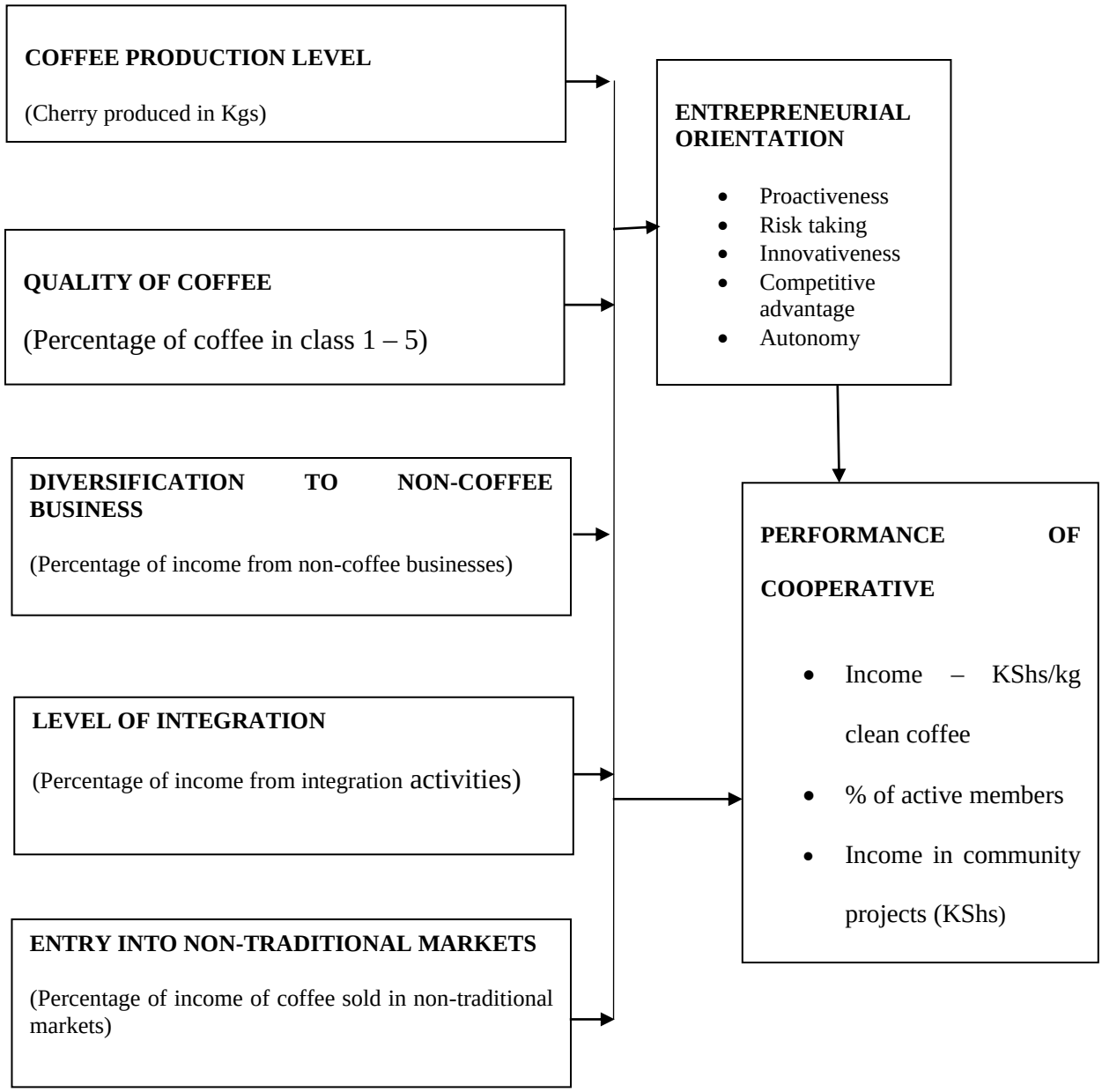

Figure 2.4: Operational Framework

2.5 Summary of Literature Review

The literature review looked into the entrepreneurship theories and selected the opportunity entrepreneurship theory to guide the study. It also looked into the factors that most influence the performance of a coffee cooperative namely the coffee production level, quality of coffee produced, diversification to non-coffee businesses, integration along the coffee value chain and entry into non-traditional coffee markets. In the chapter the concept of entrepreneurial orientation of a firm was detailed including the history of the concept as well as the dimensions of entrepreneurial concept. The measures of a coffee cooperative performance were also discussed. The roles of mediator variables were also explained. The mediator variable in this study, entrepreneurial orientation, has been discussed in detail. From the literature review it is evident that no literature was found that addresses the firm level factors of performance of coffee cooperatives. Areas mainly covered are governance of cooperatives and also the marketing aspects of coffee. A study is therefore necessary to guide the cooperatives on how to make improvements within their firms to enhance their performance.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methodology of the research that was utilize so as to realize the study' objectives. The chapter concentrated on design of research, target population or study population, size of sample, techniques of sampling, instruments of data collection, procedure of data collection and analysis of data and presentation. The chapter also discusses the positivist research philosophy on which the study is built on.

3.2 Research Philosophy

A research philosophy is concerned with source and development of knowledge. It is a belief on ways in which data should be collected, analyzed and used. Research philosophies guide the overall study (Osoro, 2012). Research philosophy can broadly be categorized into two; Ontology and epistemology. Ontology is concerned with what is knowledge whereas epistemology seeks how to acquire knowledge. Ontology is categorized into positivism and subjectivism. A positivist believes in one reality which can be measured using quantitative measures. Positivism is also known as deduction research whereas subjectivism is referred to as induction research. Positivism is based on empirical evidence. It is based on science, not sense, to create knowledge. A positivist believes that just like the way the world operates according to some laws like the law of gravity, speed of light, speed of sound and so is the society. True knowledge is always verifiable. Real knowledge should always be based on

experiment and experience rather than ideas and theories. A positivist believes that science is the only way to generate real knowledge. This research took a positivism philosophy since it is based on measurable and objectively verifiable performance indicators. Right from data collection numerical data was used in terms of coffee production levels, quality measurements, income generated. The data analysis used measures like F-test, means and standard deviation that are well measurable. Data presentation was also positivist as the study used tables and regression equations.

3.3 Research Design

According to Mugenda and Mugenda (2003) research design refers to a plan that directs the study in the process of gathering, analyzing as well as inferring observations; it is the plan of a researcher for the instruments and methods utilized to collect the data and to assess it, so as to respond to the study's research questions. A research design can as well be described as a roadmap of how an individual accomplishes her getting answers to the questions of research. Mugenda and Mugenda (2009) reports that a research design that is good has a clear defined objective, and has steadiness between the questions of research and the planned technique of research. Research design refers to the scheme plan or outline that is utilized to produce answers to each problem of research (Kombo, 2006). A research design can adopt several designs for example exploratory, descriptive or experimental. This research adopted a descriptive kind of research design. A descriptive kind of research design technique entails examining the subject's behaviour without influencing it. It's the design that gives a situation's picture as it happens naturally (Burns & Grove, 2003). It aimed at collecting information and new facts about the research situation to discover and describe new facts

about the situation. A descriptive study ensures ease in understanding the problem (Osoro, 2012). The design is flexible enough to give dissimilar problem aspect. In a similar study carried out in Iran, challenges in developing entrepreneurship in Iran's coffee cooperatives, Ghiasy and Hosseini (2012) used descriptive study design. A descriptive design may be further classified into quantitative or qualitative (Makongoso, 2016). This study used both quantitative and qualitative. Quantitative determines causal relationships and associations between variables whereas qualitative describes a phenomenon. Quantitative study is vital in this study as some parameters are numerical variables whereas some study aspects are non-numeric descriptions thereby necessitating qualitative analysis.

3.4 Target Population

This refers to the whole group of events, objects or individuals with common observable characteristics (Mugenda & Mugenda, 2003). The target population included all the coffee cooperatives' factories in Kenya. There are 1052 small holder coffee factories in Kenya according to the Kenya Coffee Traders Association (2016). The factory, as the unit of observation, was selected after an evaluation of how cooperatives operate. A cooperative society may have one or more factories. It was realized that all the variables being measured were different in factories belonging to the same cooperative. For example, the income earned is per factory not for the entire society. Different factories of the same cooperative society could have different incomes. Different factories of the same coffee cooperative could have different performance levels. The factory manager was the respondent since he is the senior most employee of the factory. Each factory has a factory manager who is responsible to the cooperative's executive management.

3.5 Sampling Technique and Sample Size

Sampling refers to the process of choosing a number of objects from the population under study in such a way that the chosen objects represent the population being studied (Mugenda & Mugenda, 2003). As much as practicable a large sample should be taken. Sampling tries to balance precision and cost. The study utilized a combination of stratified sampling and simple random sampling. This was in line with Ojiagu and Onugu (2015). Mathenge (2015) used a combination of stratified sampling and simple random sampling in his study in the tea sector in Kenya. The study applied stratified sampling first. Stratification refers to the process of partitioning the entire population into small groups called strata. The advantage of this is that it capitalizes on homogeneity of the stratum and so a small sample can be used to study the population. This was combined with simple random sampling as follows;

Kenya has two main regions where coffee is grown, East of Rift Valley and West of Rift Valley (A coffee growing map is attached as appendix IV). East of Rift includes central region, Eastern, Nairobi and Coast. West of Rift includes Rift Valley, Nyanza and Western regions. Each of the two regions was included in the sampling. The geographical conditions of the two is different which may cause difference in performance. East of Rift Valley is composed of 782 factories out of the 1052 and as such 74% of the sample were from the East and 26% from West of Rift Valley. East of Rift Valley has 9 Sub-regions (strata). These are the former districts that have unique codes given by the Coffee directorate, these districts are presented in Appendix III. Simple random technique of sampling was utilized to pick 4 out of the 9 strata to take part in the research. The four strata were considered adequate. Gathura

(2013) in her research in Kenya where she targeted 700, 000 coffee farmers picked Githunguri district in Kiambu County to represent all farmers. 4 out of 9 yields a sample size that is equivalent to 44% of the population, this is in agreement with the Yamane formula which yields a sample size of around 38%. In each of the 4 strata again simple random technique of sampling was utilized to pick factories that participated. The same process was repeated in selection of study units for the West of Rift Valley. This technique is also in line with Olawoye (2016), who used a two stage sampling by applying stratified sampling followed by simple random sampling. Makongoso (2016) in a study on collective entrepreneurship in Kenya coffee cooperatives, also combined two different sampling techniques. Such sampling increases the representation of the population units. Table 3.1, below, shows the areas sampled, the number of factories in each area and the number of factories sampled.

Table 3.1: Strata selected and number of factories

Stratum	Number of Factories	Number of Factories Sampled
Nyeri	101	63
Kirinyaga	91	57
Machakos/Makueni	81	50
Embu	64	40
Bungoma	45	17
Kisii/Nyamira	63	24
Kericho	43	16
Tranzoia/Keiyo	41	16
Total	**529**	**283**

3.5.1 Sample Size Determination

This study adopted Cochran formulae to determine the sample size. This equation was found to yield a reliable sample size as illustrated below.

$n = Z^2pq / e^2$ …….3.1

n - Sample size

Z^2 - abscissa of the normal curve at 95% level of confidence

e^2 - is the desired level of precision – in this case 5%

p – is the estimated proportion of population with a certain attribute - in this case we use 0.5 since we don't have the proportion

q = 1 –p

Sample size will be; 1.96 * 1.96 * 0.5 * 0.5/ 0.05 * 0.05

= 385 factories

If the population is small (less than 10, 000) then the sample is reduced slightly with the formula;

$$\text{Corrected sample size} = \frac{n}{1 + (n - 1)/N}$$

Where N is the population

$$= \frac{385}{1 + (385-1)/1052}$$

Using the formula, the sample size was 283.

Therefore, the sample size was 283 coffee factories in Kenya who were selected using stratified and simple random sampling. Table 3.2 shows how the 283 factories were obtained.

Table 3.2: Distribution of sample size

Region	**Rift Valley and West of Rift Valley**	**East of Rift Valley**
Total number of factories	270	782
Number of strata	9	9
Strata to be selected using simple random sampling	4	4
Factories to be selected using simple random sampling =No of factories/1052 * 283	73	210
Percentage	25.8 %	74.2%

3.6 Data Collection Tools and Procedure

The study involved document review to extract the necessary secondary data. The secondary data included panel data for the years, 2014, 2015 and 2016. This was combined with cross-sectional data. A combination of panel data and cross-sectional data enhances the quality and

quantity of data (Gujarati, 2003). Year 2017 data was avoided because the study required coffee sales data and it was realized that some factory may not have sold all their coffee lots.

Primary data was gathered via factory visits and holding interviews and discussions with the Factory managers. The factory managers were called on telephone prior to the visits where they were briefed on the information required in case they needed approval from the management committee or to make any other preparation. Structured questionnaires were administered to respondents by enumerators. A sample questionnaire is presented as appendix II. A respondent was the factory manager in charge of a factory. A study unit was a factory since the data being collected belonged to factory not individual farmers or the cooperative society. Questionnaires were designed by use of a 5 point Likert continuum scale (Very low, low, moderate, high, and very high,); this was in tandem with, (Azadi, Hosseinnia, Zarafshani, Heydari & Witlox, 2010). The questionnaires had both close ended as well as open ended questions. Secondary data was obtained from the records at the factory and in a few cases where some information was missing the researcher liaised with the marketing agents.

A letter of introduction was written and endorsed by Dedan Kimathi University of Technology (DeKUT). A copy of the letter is attached as appendix I of this thesis. This was to introduce the researcher to the respondents and the coffee factories management. Letters of introduction were also done to all the County Governments in the study areas.

3.7 Measurement of Variables

The variables in this study were performance, coffee production, quality, diversification to non-coffee businesses, integration along coffee value chain, entry into non-traditional coffee markets and entrepreneurial orientation. Performance was measured in terms of earnings in Kenya shillings per kilogram of clean coffee, percentage of active members and amount of money spent on community projects. It was expected that performance is associated with higher payment in KShs per kg of clean coffee, higher percentage of active members and more money spent on community projects. Low performing factories may not afford to receive high rates and would also hesitantly spend on the community projects. Low performance would desert the cooperative leading to low percentage of active farmers. Coffee production was measured in kilograms of coffee cherry and kilograms of clean coffee. High production would mean that the coffee factory has more to sell in the market hence the revenue would be higher leading to higher performance.

Coffee quality was measured in terms of the percentage of coffee falling in class 1 to 5. High quality will attract more buyers to compete for the coffee leading to more revenue and higher performance. Diversification was the percentage of annual income earned from non-coffee businesses while integration was percentage of earnings from integration activities. Diversification would mean more streams of income and hence higher performance. Intergration also makes the cooperative have more control of more than one process and therefore earning more and improving the performance. Entry into non- traditional coffee markets was measured as the percentage of income from coffee sold to the non-traditional coffee markets. Entrepreneurial orientation was measured using scale of 1 – 100%.

Entrepreneurship is known to create value through combination of resources, a process that creates wealth therefore engaging in entrepreneurship the cooperative society would improve the performance.

3.8 Pilot Study

A pilot study was conducted to pretest the instrument of data collection. Burns (2000) stated that the importance of pretesting data is to discover the errors early enough so that the tool can be amended. A pretesting sample of between 1 and 10% is recommended (Mugenda & Mugenda 2003). The pretest involved a sample of 28 (9.9%) factories located in different parts of Murang'a County. The County was considered because of convenience and also it is a County where coffee farming is still robust. The County was not part of the areas where the final data collection was carried out.

3.8.1 Instrument Validity

Validity is the ability of an instrument of research to measure what it is supposed to measure. An accurate way of determining the instrument validity is measuring the degree to which we know what the test measures, (Osorio, 2012). The data collection instrument was pretested in 28 factories to make sure it captured all the intended information. The questionnaires used during the pilot were not part of the sample used in the research. This aided in validating the wording and content with a view to improve the questionnaires. My supervisors, peer and an expert also evaluated the questionnaires to ensure content validity.

Kaiser – Meyer Olkin (KMO) test (Kaiser & Rice, 1974), was performed to test the validity. Interpretive adjectives for the KMO Sampling Adequacy Measure are: above 0.90 as marvelous, in the 0.80's as meritorious, in the 0.70's as middling, in the 0.60's as mediocre, in the 0.50's as miserable, and below 0.50 as unacceptable. This was in line with Makongoso (2016) who argued that KMO measure of more than 0.5 is suitable for factor analysis.

3.8.2 Reliability of Instrument

After the pretest, the data collected was analyzed using statistical tools to check whether the questionnaire was reliable to produce the intended results. The study used Cronbach alpha statistic to measure the questionnaire's reliability. All questions (items) were subjected to the statistic. All the questions with an alpha statistic value of less than 0.7 were removed or amended. An alpha of above 0.7 shows high internal consistency, this corresponds to a research conducted in Kenya by Olawoye (2016). The questionnaires used in the pilot were not used in the actual study.

3.9 Tests of Regression Assumption

Running regression analysis when assumptions of linear regression are highly violated may lead to the risk of bias, inefficient and inconsistent parameter estimates. To reduce this normality test, multi-collinearity, autocorrelation, heteroscedasticity and panel unit tests were conducted.

3.9.1 Test for Normality

The assumption of normality was needed so as to carry out joint or single tests of hypothesis about the parameters of the model. Bulmer (2011) stated that if all the variables reached normality threshold then they would be acceptable since the skewness would be distributed between +1 and -1. To check the normal distribution of data tests, need to be carried out; Normal probability plots, if there is systematic deviation of the plots from the straight line then that data is not distributed normally. The plots were found to be reasonably close and thus the data was normally distributed. The study also tests the null hypothesis. If the P-value is >0.05, then the normality at 5% level is rejected. If the data is not distributed normally then a non-parametric tests are the most appropriate.

3.9.2 Test for Multi-collinearity

Multicollinearity is described as the occurrence of relationships between predictor variables (William, 2013). In severe multicollinearity cases in between the predictor variables, the implication is that unique solution of least squares to a regression cannot be properly computed (Field, 2009). The multicollinearity increases the intervals of confidence and standard errors resulting to unsteady coefficients estimates for individual predictors (Besley, 1980). The cut-off for severe multi-collinearity is 0.8. The problem is data analysis is not the multicollinearity presence but its severity. A correlation coefficient which is more than 0.8, signifies multicollinearity presence. In this study multicollinearity was assessed using the Variance Inflation factors (VIF). According to Field (2009) values in excess of 10 is an

indication of multicollinearity. Values of above 100 is a clear indication of presence of multicollinearity.

3.9.3 Test for Autocorrelation

The data included both cross sectional data as well as longitudinal data, this elevates existence of serial correlation. To check this, the Woodridge test for autocorrelation was employed. This test was used as suggested by Wooldridge (2002) and Drucker (2003). The null hypothesis of this test is that the data has no serial correlation. If serial correlation is noticed, then Feasible Generalized Least Squares estimation is adopted.

3.9.4 Test for Heteroscedasticity

The presence of cross-sectional data raises the concern of presence of heteroscedasticity. The CLRM assumes that the term of error is homoscedastic This means that it has variance which is constant. If the variance of error is not constant, then heteroscedasticity exists in the data. To test for heteroscedasticity, the wald test was utilized. This was developed by Trevor Breusch and Adrian Pagan in the year 1979. The null hypothesis of this test was that the α-error variance is homoscedastic. A P-value of greater than 0.05 is indicative of absence of heteroscedasticity.

3.9.5 Panel Unit Root Test

The data had both cross-sectional aspects as well as time series dimension, there is therefore necessity to test for time series stationarity since the times series estimation is founded on the

supposition that the variables are stationary. This study utilized Fisher-type test unit root in panel data. In this test the null hypothesis was that every panel had unit root. On the other hand, the alternative hypothesis was that at least one panel didn't have unit panels or several panels didn't have unit root. So as to analyze the moderating entrepreneurial orientation effect on the coffee cooperatives' performance, the study will modify the dynamic panel data model used by Ban˜os-Caballero. The study employed a dynamic panel data regression model.

3.9.6 Test for Random or Fixed Effects

One has to establish whether to run a model of fixed effects or a model of random effects when conducting analysis of panel data. Model of fixed effect assumes specific intercepts of a firm and captures the variables effects which are specific to every firm as well as steady in due course, the model of random effect assumes that there is sole common intercept and it varies from one firm to another randomly. When estimating the models, it is important to first establish whether there is a relationship between the independent variables. If there is a relationship, then model of fixed effect gave steady findings if not model of random effect will be an resourceful estimator and it's projected by generalized least square. It is recommended to use both methods (Fixed and Random) to check the most appropriate. Hausman's specification test by Durbin, Wu and Hausman were used to establish whether random or fixed effect ought to be utilized. STATA was used for estimation.

3.9.7 Mediating Effect Test

The approach of Baron and Kenny (1986) was used in mediation testing. For confirmation of mediation, there must be fulfillment of four conditions (Mackinnon & Fairchild, 2009): One, the independent variable is correlated significantly to the dependent variable in the mediating variable absence. Then the independent variable is correlated significantly to the mediator variable. The mediator variable is correlated significantly to the dependent variable. While controlling for the mediating variable effect on the dependent variable, the independent variable effect on the dependent variable is not significant in the mediating variable presence.

3.10 Data Analysis

After collecting data using questionnaires, it was prepared to make it ready for analysis. This was done by handling blank responses, coding, editing, categorization as well as keying into Statistical Package for Social Sciences (SPSS). Analysis of data was done by use of correlation analysis, panel regression analysis and analysis of variance (ANOVA) as well as descriptive statistics. Correlation analysis was done through determination of coefficient of correlation and test of significance p-values. F-test was used for analysis of variance. Data analysis was also supported by the STATA (for panel data) and SPSS software (for cross-sectional data). Descriptive statistics were used to summarize and profile coffee production, coffee quality, diversification, integration level and also market expansion. The statistics used included standard and mean deviation. Means were utilized to summarize data including production levels, quality performance, income and number of active members. Standard deviation was used to measure the deviation of individual factory performance parameters

from the mean. Panel data model can be estimated by use of three ways that is Fixed effect (FE) model, Random Effect (RE) model and Pooled Ordinary Least Square (OLS) regression model. All the three methods were estimated followed by the application of necessary tests before selecting the suitable model. This study used random effect.

The hypothesis that were formulated as documented in chapter one were tested by using F-test. The null hypothesis was that there is no significant relationship between the independent variable and the dependent variable. The acceptance/rejection criteria were that, if the F calculated is greater than F critical, the H_o1 is rejected but if it's less than f critical, the H_o1 fails to be rejected. The data was then subjected to a multiple linear regression analysis and an optimal regression model developed. The model revealed the association between the dependent variable, the independent variables as well as the mediator variable as presented below.

$$Yit = b0 + b1X1it + b2X2it + b3X3it + b4X4it + b5X5\ it + b6X6\ it + e \quad \ldots\ldots\ldots\ldots\ldots\ldots 3.2$$

3.11 Ethical Considerations

To ensure ethical standards, informed consent, privacy, anonymity, openness, honest disclosure of the information was practised. The enumerators signed a bond to abide to these regulations. The Belmont ethics code and the APA ethics code were strictly followed.

The respondents were assured of the confidentiality of the data collected. They were also informed tha the raw data couldn't be accessed by any other party except the researcher and the data analyst. Before data collection the respondents were informed about the limits of confidentiality – The data analyzed would be available on the internet but not in raw form. No

name of any factory would be in the final report. No name of any respondent would be in the final report.

The researcher followed the rules of informed consent with utmost strictness. Care was taken to ensure security of data during collection, analysis and post analysis period. At the end of interviews, the respondent was given the contact of the researcher to contact him in case of any query especially if they get to realize that their confidentiality has been violated.

3.12 Research Methodology Summary

This chapter discusses the positivist research philosophy that the study adopted. This was found appropriate as it involved measurable variables. A descriptive research design was adopted as the study involved studying the research units without interfering or having any treatment. The study involved a population of 1052 coffee factories that are located indifferent parts of Kenya. Using a combination of stratified random sampling and simple random sampling some 283 coffee factories were selected for the study. Cochran formula was used to come up with 283 factories. 8 strata were used from each of West of Rift Valley and East. A pilot study was conducted in Murang'a County to determine the validity and the reliability of the questionnaire. Kaiser Meyer and Olkin test was used to determine the validity while Cronbach alpha was used to determine reliability. To ensure proper results the chapter discusses the regression assumption tests – tests for normality, auto-correlation, heteroscedasticity, panel unit tests, multicolinearitty. The chapter also discusses the data analysis methods and ethical considerations.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter opens with the baseline demographic data about the study. The chapter consists of interpretation, analysis of data, discussion and results summary. The findings are presented in charts as well as Tables. The data analyzed was organized under themes which reflected on the objectives of the study. The response rate was commendable. The chapter has four sections; the demographic data, correlation analysis, analysis of variance and regression analysis. All the independent variables and the mediator variable were found to be important in determining the performance of the coffee cooperatives in Kenya.

4.2 Rate of Response

The number of questionnaires which were issued to the coffee factory managers were 283 and a total of 252 questionnaires were correctly filled and returned. Some of the respondents returned the issued questionnaires half-filled while others refused completely to return them in spite of several follow up. Table 4.1 shows the response rate of the study. The rate of response was 89.05% as indicated in the table.

Table 4.1: Response Rate of Respondents

Response	**Frequency**	**Percent %**
Returned	252	89.05
Unreturned	31	10.95
Total	**283**	**100**

The rate of response of greater than 50% is sufficient for a descriptive research (Kothari, 2004). A rate of response greater than 30% of the whole size of the sample gives sufficient data which can be utilized to generalize the research problem characteristics. The response rate is also in tandem with the rate in a research conducted by Abubakar et al. (2015) on the factors affecting the cooperatives performance in Malaysia, which was 72%.

4.3 Demographic Characteristics

This part includes the information that explains crucial characteristics for instance age, gender, education level, duration of work in the factory as well as age of the factory.

4.3.1 Gender of the Respondents

The study involved both men and women respondents. Figure 4.1 below is a presentation of gender distribution. The findings in Figure 4.1 revealed that majority of the respondents (83%) were male whereas only 17% of respondents were female. This implies that most coffee factory managers in Kenya are men. This clearly indicated that there was gender imbalance in the management of the coffee factories in Kenya. This corroborate with a study carried out in the coffee sector in Kabba region in Nigeria in 2013 (Ekenta, 2013), which had 74% being male. Gender imbalance in the management of the coffee factories will not have any effect on performance of the factories since no manual work is involved that may disadvantage women. Huang et al. (2015) also found no influence of gender on the performance of staff in cooperatives.

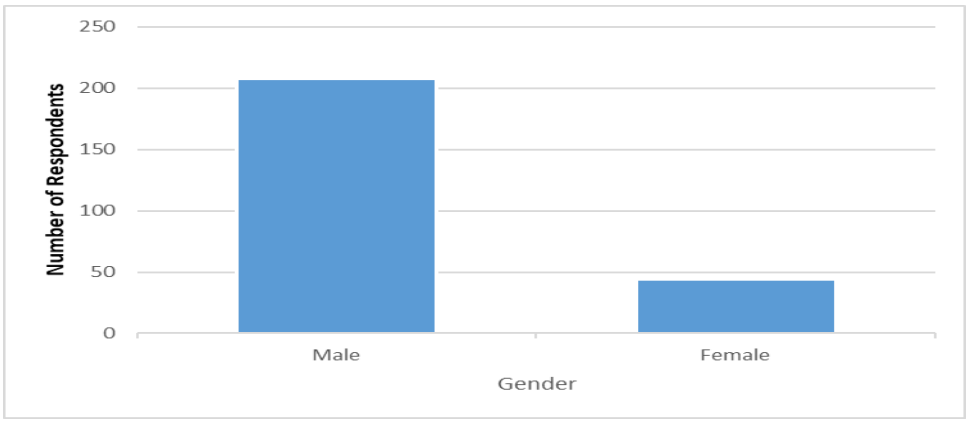

Figure 4.1: Gender of the Respondents

4.3.2 Age of the Respondent

The ages of the respondents is summaried and presented in Figure 4.2 below. The findings in Figure 4.2 revealed that majority of the respondents (60%) were above 50 years. 25% of the respondents were between 41 – 50 years, 11% were between 31 – 40 years while only 4% of the respondents were less than 30 years. This implies that most managers were above 50 years and thus elderly. This negatively affects the performance of the factories since old people may not be as productive as younger ones. The high percentage of elderly people in the study was consistent with a study by Ekenta (2013) in Nigeria's coffee sector which showed a mean age of 56 years. Shao et al. (2016) argued that increase in the percentage of labour force in the age bracket (55-64) in Europe was likely to reduce the labour productivity by 5%. Having managers in the same age bracket in the coffee factories would result in low productivity and likely to lead to decline in performance.

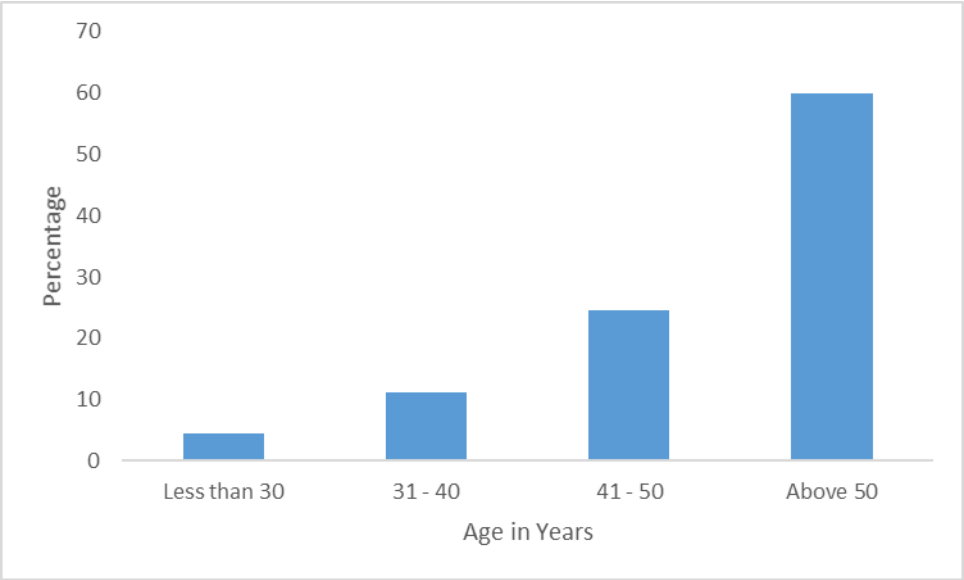

Figure 4.2: Age of the Respondents

4.3.3 Level of education of respondents

Education level of the manager is important in determining the way he manages the factory which has an effect on its performance. The findings for the respondents' education level are shown in Figure 4.3 below. The findings are presented in Figure 4.3 above. 41.7% of the respondents indicated that their highest level of education was college, (34.1%) had up to secondary school education, and (20.6%) had gone up to primary school while (3.6%) had university education. This implies that most coffee factory managers did not have college education. This will cause low performance of the factories. Makongoso (2016) argues that lowly educated people are less innovative which compromises performance of a firm. He further argues that education enhances an employee's capacity to make accurate and

meaningful decisions. High formal education can be associated with business success and growth (Makongoso, 2016).

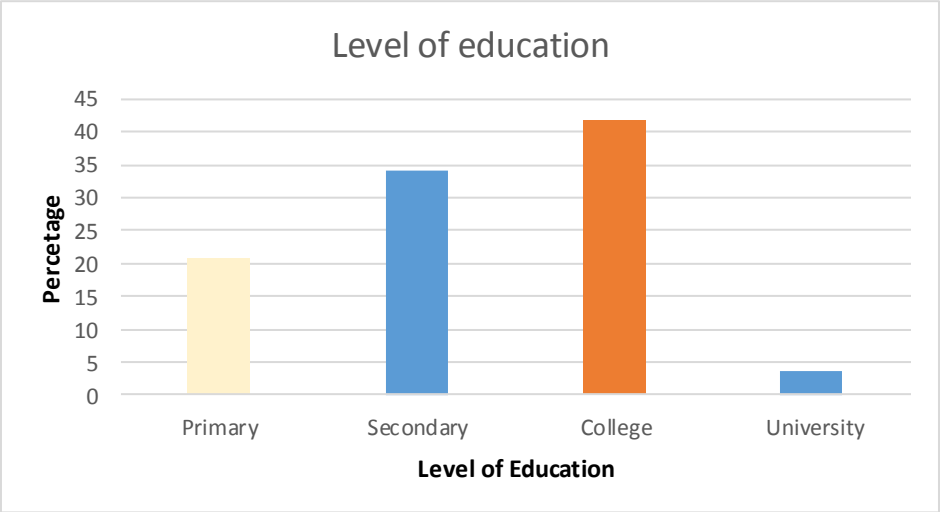

Figure 4.3: Level of Education of respondents

4.3.4 Duration of Work in the Factory

The findings of the duration they have worked for the factory are shown in Figure 4.4 below. The findings showed that majority of the respondents (51%) had worked for the factory for more than 10 years, (32%) had worked in the factory for 6 to 10 years, and (12%) had worked for 2 to 5 years while only 5% who had worked for less than 1 year. This was an indicator that most had the relevant experience and thus had the capacity to improve the performance of their coffee factories.

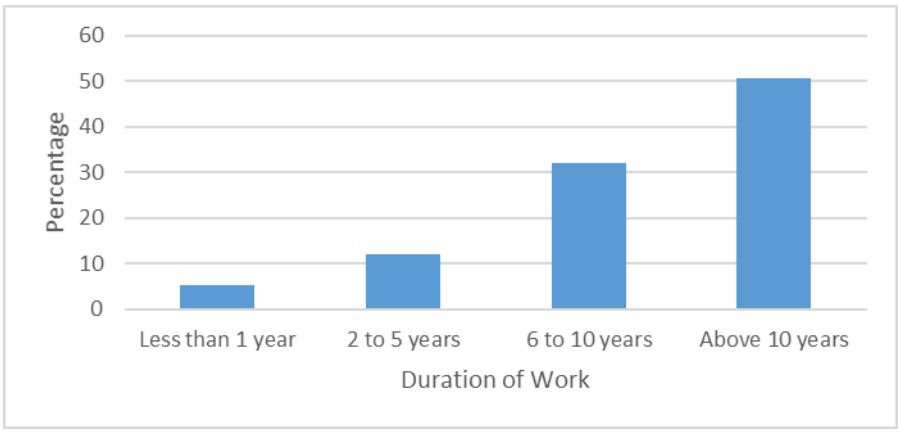

Figure 4.4: Duration respondents had worked in the Factory

4.3.5 Age of the Factory

The age of the factory may also have an impact on its performance due to wear and tear of equipment and machinery. The findings on age of the factories are shown in Figure 4.5 below. The findings in Figure 4.5 showed that majority of the respondents (71.8%) stated that their factories were over 20 years old, (21%) claimed that factories were 16 – 20 years old, (4.8%) were 6 – 10 years old while (2.4%) indicated that their factories were 1 – 5 years old. The old factories are likely to have old equipment with high failure rate and hence lower performance. However, Makongoso (2016) argued that old organizations acquire more positional advantage and therefore likely to perform better.

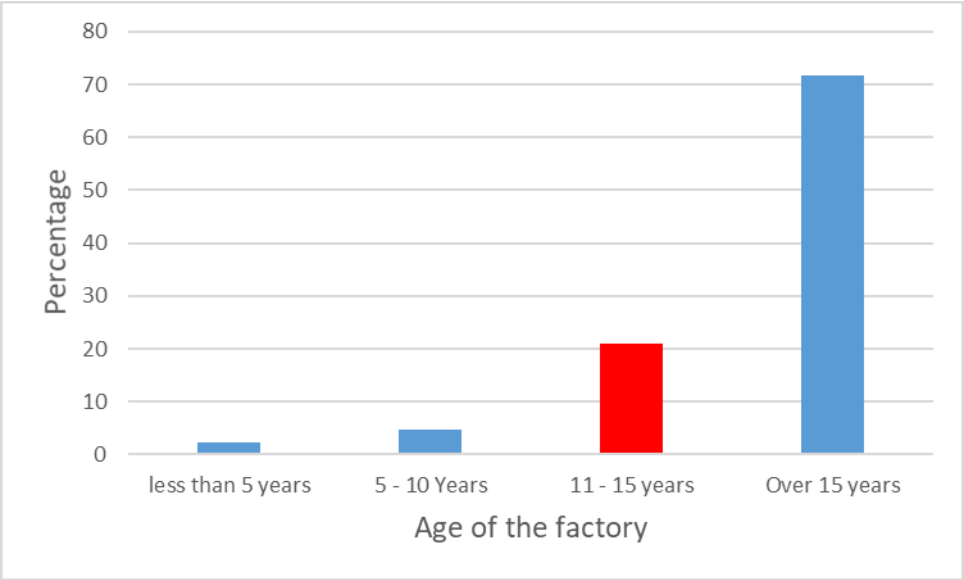

Figure 4.5: Age of the Factory

4.4 Results of Reliability of the Instrument

Reliability is articulated as a coefficient between 0.00 and 1.00. The test is said to be more reliable when the coefficient becomes more high. In this research, instrument of data collection which is a questionnaire was tested on 10 percent of the questionnaires sample to guarantee that it's effective as well as applicable. Testing of reliability was carried out by use of questionnaire properly completed by 28 respondents who were picked randomly. These respondents were not included in the final sample of research so as to manage for biasness of response. The responses of the questionnaire were fed into statistical package for social sciences (SPSS) software and Cronbach's alpha coefficient produced to evaluate reliability. The Cronbach alpha was calculated to enable measurement of the questionnaire reliability. Results are shown in Table 4.2.

Table 4.2: Reliability coefficient

Variable	Cronbach's Alpha	Comment
Level of Coffee production	0.935	Accepted
Quality of Coffee	0.906	Accepted
Diversification	0.901	Accepted
Level of Integration	0.810	Accepted
Entry into nontraditional market	0.993	Accepted
Entrepreneurial orientation	0.920	Accepted

Every statement was dependable because the Cronbach alpha were greater than 0.7 which was utilized as a reliability cut-off for the research. Consequently, the internal consistency was outstanding.

4.5 Results of Validity of Instrument Test

This measures the adequacy of the sample used. The value of the KMO Sampling Adequacy Measure for this variables set was 0.678 as shown in Table 4.3, which would be labeled as 'mediocre'. The significance of the KMO coefficient was evaluated using a chi square test and a critical probability value (p value) of 0.05. A chi square coefficient of 393.492 and a p value of 0.000 imply that the coefficient is important. This further implies that there was a significant association between the statements measuring firm level factors and performance of cooperative societies. Bartlett's sphericity test is used to test the hypothesis that the relationship matrix is an identity matrix; This would mean that every diagonal element is 1 and each off-diagonal element is 0, signifying that all the variables are not associated. If the value of Significance for this test is below our level of alpha, we reject the null hypothesis that the matrix of the population is an individuality matrix. The value of significance for this

analysis led to rejection of the null hypothesis and concluded that there were associations in the set of data that are suitable for analysis of factor. This analysis met this condition.

Table 4.3: Kaiser-Meyer-Olkin and Bartlett's Measure of Sampling Adequacy

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**0.678**
Bartlett's Test of Sphericity	Approx. Chi-Square	393.492
	df	15
	Sig.	0.000

4.6 Firm Level Factors that affect Performance of Coffee Cooperatives

This section includes the results of the various factors that influence the performance of coffee cooperative societies.

4.6.1 Level of Coffee Production and Performance of Coffee Cooperatives

The respondents were asked to indicate whether the level of coffee of production affected the performance of the cooperative society. (95%) of the respondents believed that level of coffee production affected performance of coffee cooperative societies in Kenya while only (5%) didn't believe that level of coffee production affected the performance. These findings agreed with those of Azadi, Hosseinnia, Zarafshani, Heydari and Witlox (2010) who argued that quantity of the cooperative product affects the performance of the cooperative society. This was also consistent with Khan et al. (2015) in their study in Malaysia who argued that there is strong correlation between cooperative members' participation and the performance of the cooperatives. The respondents who indicated that that level of coffee production affected

performance of coffee cooperative societies in Kenya were further asked to indicate the extent to which level of coffee production affect performance of coffee cooperative societies in Kenya.

The results in Figure 4.6 show that majority of the respondents (52.4%) argued that level of coffee production affected performance of coffee cooperative societies to a great extent. These findings agreed with that of Azadi et al. (2010) who argued that quantity of the cooperative product affects the performance of the cooperative society. In addition, 39.3% of the respondents stated that level of coffee production affected performance of coffee cooperative societies to a very great extent, (7.1%) argued that level of coffee production affects performance of coffee cooperative societies to a moderate extent while only (1.2%) indicated that level of coffee production affect performance of coffee cooperative societies to a low extent.

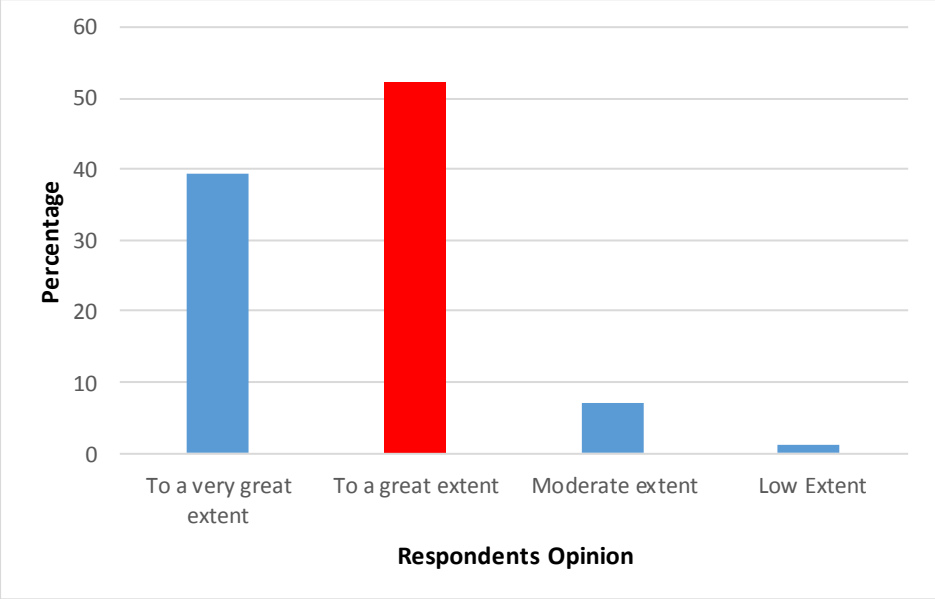

Figure 4.6: Extent to which level of Coffee Production Affect Performance

The study then sought to establish how the interviewees rated various coffee production aspects in their respective factories which could affect performance of the cooperatives. The results of this study were as depicted in Table 4.4. The results in Table 4.4 revealed that majority of the respondents (42.9%) disagreed with the statement that their factory is a high producer of coffee. This implies that most of the factories were producing small quantities of coffee and thus income likely to be low. This showed that most factories were not performing well. The results further showed that 40.5% of the respondents disagreed with the statement that many members in the cooperative society participate in coffee production. Lower participation of members would translate to lower performance due to likelihood of lower coffee production. Low participation by members goes against one of the principles guiding the cooperative management, the economic participation of members. As Azadi (2010) argued, that the quantity of the cooperative product affects the performance of the cooperative society. In addition, the results showed that majority of the respondents (60.7%) agreed with the statement that their factory had incentives for members who produce a lot of cherry. This implies that members of the cooperative societies were motivated to produce more coffee and thus most coffee societies would increase their production and hence the cooperative would have more coffee to sell and hence improved performance.

The results further showed that majority of the respondents (61.9%) disagreed with the statement that their farmers did not have any limitation to produce lots of coffee. Limitations like lack of agro-inputs financing would lead to low production and hence lower performance. Astrid et al. (2014) argued that lack of inputs lowers coffee production and limited resources

limit the performance of cooperatives in Kenya. The results also revealed that majority of the respondents (75.0%) agreed with the statement that their management supported high production of coffee. The management support of high coffee production would mean higher performance. The support was mainly in terms of securing crop advance payments from financiers. This corroborate largely with study by Milanoi (2016) who argued that no organization would achieve quality without management support. He recommended that the management ensures that they set the vision, offer resources and provide quality leadership. This was the organization would improve its turnover.

On a five-point scale, the average mean of the responses was 3.10 which means that a narrow majority of the respondents disagreed with most of the statements; The statements touched on production of more coffee meaning most respondents didn't agree that they were producing a lot of coffee. This means that the performance of the cooperatives would be affected by the low production. The low score of 3.1 could have been as a result of many supporting that their factory management supported production of coffee. The answers given by the respondents were varied as shown by a standard deviation of 1.27 which show a little variation between the answers. This would mean that many factories were nearly similar in coffee production capacity.

Table 4.4: Level of Coffee Production and Performance

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
This factory is a high producer of coffee	15.5%	27.4%	22.6%	21.4%	13.1%	2.9	1.3
Many members participate actively in coffee production.	15.5%	25.0%	16.7%	29.8%	13.1%	3.0	1.3
The factory has incentives for members who produce a lot of cherry	20.2%	10.7%	8.3%	46.4%	14.3%	3.2	1.4
Our farmers do not have any limitation to produce lots of coffee	19.0%	42.9%	9.5%	14.3%	14.3%	2.6	1.3
Our management supports high production of coffee	9.5%	1.2%	14.3%	56.0%	19.0%	3.7	1.1
Average						**3.1**	**1.3**

The trend analysis results as shown in Figure 4.7 below showed that the average quantity of coffee produced in the year 2014 was 200044 kgs. The average quantity of coffee produced increased to 448440 kgs in the year 2015 but declined to 214251 kgs in the year 2016. This could be due to the biennial production cycle of Arabica coffee. The quantity of crop produced is important as it is what is processed and sold. The higher the quantity of coffee produced the more the likelihood of higher performance since the factory fixed costs would have to be paid regardless the coffee quantities.

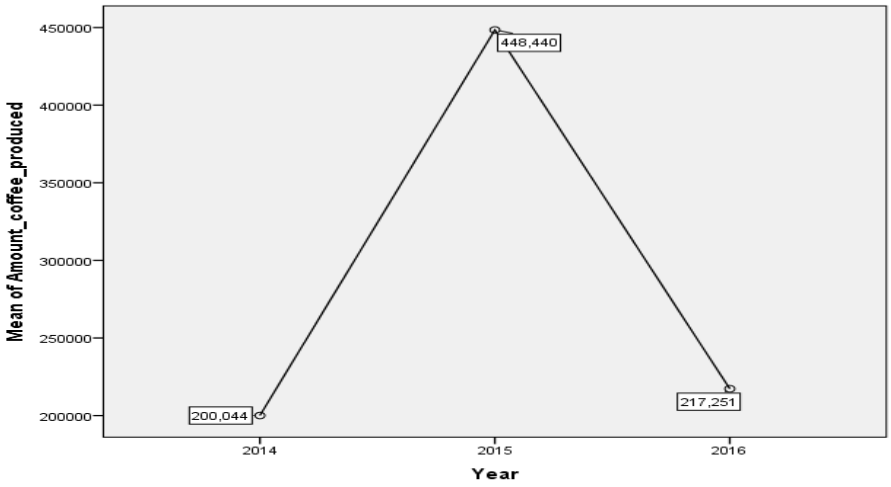

Figure 4.7: Quantity of coffee produced

The trend analysis in Figure 4.8 results revealed that the average amount of clean coffee in the year 2014 was 31402. However, the average amount of coffee produced increased to 53222 in the year 2015 but declined to 46302 in the year 2016. This could be due to the biennial production cycle that is characteristic of Arabica coffee. The graph of cherry (Figure 4.7) is not identical to the one for clean coffee (Figure 4.8). This could be as a result of factors like changes in weather from one year to the other or malpractices during milling. The quantity of clean coffee is important since it directly determines the financial performance of the factory as it is the commodity that is sold at the auction or directly to the overseas buyers. An increase in coffee quantity, ceteris paribus, increases the revenue to the cooperative society. This corroborates well with Abubakar et al. (2015) who argued that when members participate more by supporting the business activities of their cooperative its performance improves. When members produce more coffee they give more business to their cooperative society hence improving its performance. The management should therefore come up with innovative ways to support the members to increase coffee production.

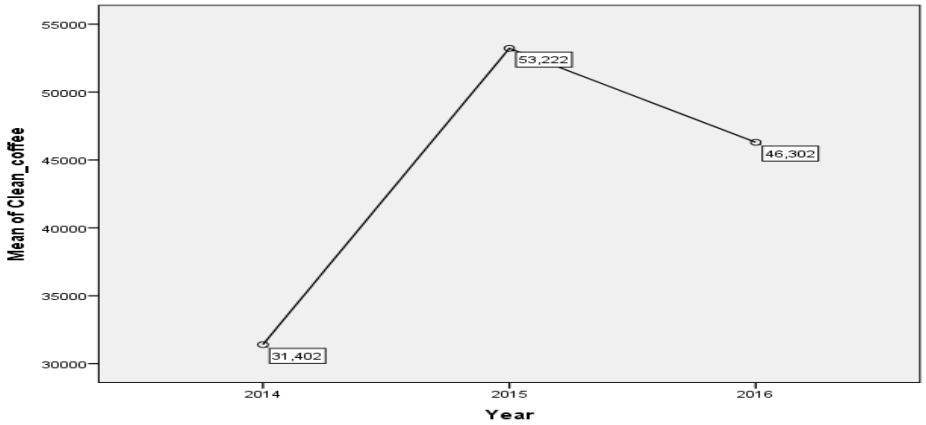

Figure 4.8: Amount of Clean coffee produced

4.6.1.1 Correlation between level of coffee production and performance of coffee cooperative societies

The results of the relationship between quantity of coffee produced and the performance of the coffee cooperatives are explained in detail in this section. The correlation and p-values were extracted from the SPSS. The results in Table 4.5 revealed that amount of coffee produced and performance of coffee cooperative societies are positively and significantly associated (r=0.991, p=0.0007). The (p) value is less than 0.05 meaning production is significant at 95% confidence level. This implies that increase in amount of coffee produced would lead to improvement in performance of coffee cooperative societies. These findings agreed with that of Azadi et al. (2010) who found that the performance of a cooperative has a positive correlation with the quantity of the cooperative product it produces. This corroborate largely with Bradford and Weber (2011) who argued that level of coffee production rather than the premiums paid is important in increasing the cash returns to coffee growers in Peru and Mexico.

Table 4.5: Level of Coffee Production and Performance

	Performance	Quantity of Coffee Production
Performance	1	
Amount of coffee produced	0.991	1.000
	0.0007	

4.6.2 Quality of Coffee and the Performance of the Coffee Cooperatives

The respondents were asked to indicate their opinion on the effect of quality of coffee produced on the performance of coffee cooperative societies. They were tasked to give a 'yes' – if they believed there was an effect or a 'no' – no effect. 94% of the respondents believed that quality of coffee affected the performance of the coffee cooperative societies while only (6%) stated that quality of coffee didn't affect the performance. This implies that improvement in the quality of coffee would improve the level of performance of the coffee cooperative societies. In the market place customers were likely to buy coffee of higher quality at a higher price. This would directly affect the performance of the cooperative society. These findings agreed with that of Koskei (2015) who argued that Coffee quality determines the performance of a coffee factory. This finding largely corroborate with Kralova et al. (2015) who argued that there is correlation between quality of products, customer satisfaction and eventually with the company's performance. Dunk (2007) also argued that product quality contributes to a company's competitive advantage. Kanyanjua and Kuguru (2015) also argued that quality of coffee had a positive relationship with performance of coffee industry in Kenya.

The respondents were asked to indicate to what extent they believed the quality of coffee affected the performance of the coffee cooperative societies. The results are contained in Figure 4.9 below. The results in Figure 4.9 revealed that majority of the respondents argued that quality of coffee affected the performance of coffee cooperative societies. This implies that quality of coffee produced would improve the performance of the coffee cooperative society. These findings agreed with that of Koskei (2015) who argued that Coffee quality determines the performance of the factory. Coffee is differentiated at the market by quality attributes like colour, size, absence of defects and overall quality. When these are desirable the buyer pays more and hence the society earns higher. When the quality is poor then the price and overall cooperative performance would be low.

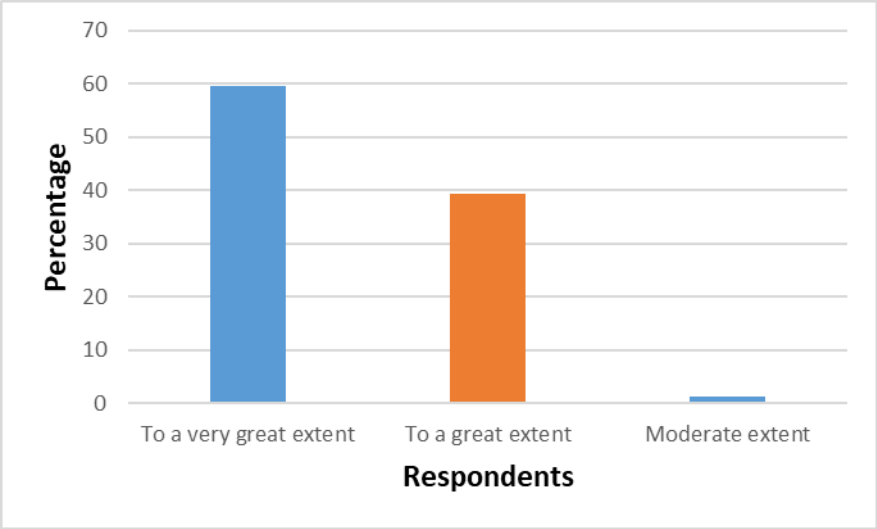

Figure 4.9: Effect of Coffee Quality on Performance of the Coffee Cooperatives

The respondents were further asked to indicate whether they spend resources specifically for quality improvement. The results in Figure 4.10 revealed that majority of the respondents (55%) indicated that they spent resources specifically for quality improvement while only (45%) who indicated that they didn't spend. Spending resources on quality improvement is part of management commitment that is required to improve a firm's performance. Milanoi (2016) argued that investing in quality management systems improves a manufacturing firm's performance.

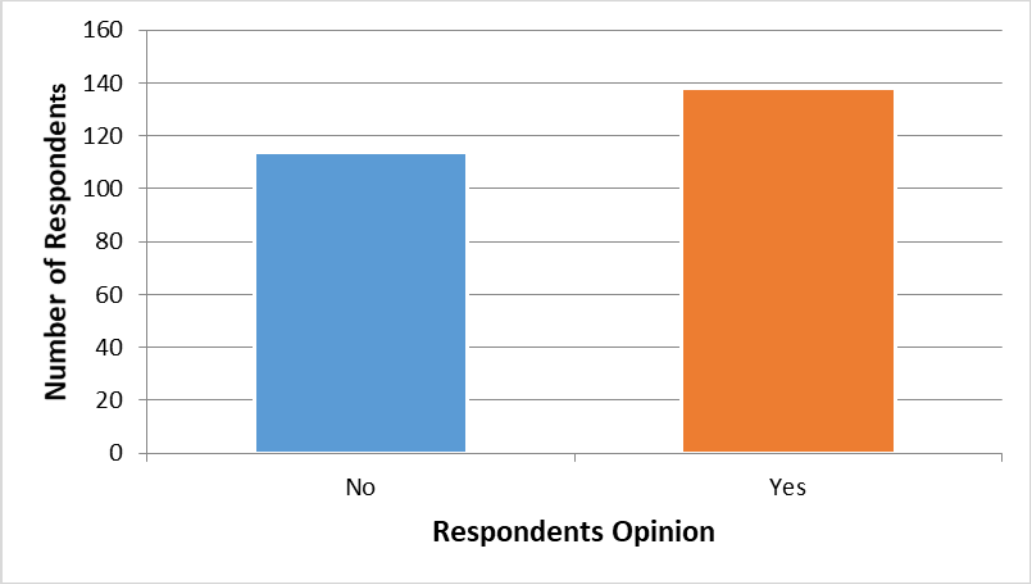

Figure 4.10: Quality Improvement

The study also sought to establish the extent to which various coffee quality related attributes affect performance of coffee cooperative societies. A Likert scale of 5 to 1 (5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree and 1 = strongly disagree) was used to measure these practices. The results of this study were as depicted in Table 4.5. The results in Table 4.6

revealed that majority of the respondents (58.3%) stated that their factories had invested heavily on training of farmers on production of quality coffee. A majority had also trained their workers on the same. Such training was likely to improve the performance of the cooperatives due to production and processing of high quality coffee. This is corroborated by Milanoi (2014) who argued that employees training is part of continuous improvement that grows a company's market share and profits. Khalil et al. (2016) argued that lack of extension and farmers' training leads to lower performance of firms. Astrid et al. (2014) argued that when farmers are not given training they have lower ability to adopt new production technology. Coffee is attacked by a number of diseases which compromise the quality of the coffee produced. Training farmers ensures that they are able to avoid the diseases at farm level hence producing higher quality coffee. Well trained workers will process the coffee well and will not compromise quality which will lead to high performance.

The results also revealed that majority of the respondents (83.5%) agreed with the statement that the grade of coffee was affected by the changes in weather which affects performance of their coffee factory. Kanyanjua and Karugu (2015) also argued that coffee quality is highly affected by weather. When there is no rain the coffee produced is droughty and hence of poor quality. The results also showed that majority of the respondents (71.5%) agreed with the statement that there are regular self-inspection and quality audits exercises in the factory. This implies that the quality of coffee produced was likely to be higher which would positively affect the performance of the cooperative society. In addition, the results showed that (45.3%) disagreed with the statement that certification helps produce higher quality coffee. This is well supported largely with Sleuwaegen, (2013) who argued that certification improves

performance through improving efficiency as opposed to improving quality. Certification also aids in increasing productivity. The results also showed that majority of the respondents (77.4%) agreed with the statement that lack of access to farm inputs leads to poor quality coffee. This is in line with Astrid et al. (2014) who argued that lack of farm inputs lowers coffee production and makes the performance of cooperatives to decline. Farm inputs include the chemicals that are used to eradicate diseases and pests and also for improving crop nutrition. When the farmers cannot afford or access the inputs leads to lower yields and also production of diseased coffee beans of lower quality.

The result also revealed that majority of the respondents (61.9%) disagreed with the statement that over-fermentation of coffee is a major problem in this factory. This implies that the coffee produced was not at risk of being over-fermented thereby deteriorating its quality. In addition, it was also revealed that majority of the respondents (70.2%) agreed with the statement that management is actively involved in quality improvement. This would imply that the cooperative would have higher performance due to improved quality. Zehir and Sehitoglu (2012) argued that management commitment and support of operations increases a firm's performance. The results also showed that majority of the respondents (70.0%) agreed with the statement that malpractices at the milling compromises out quality. This implies that malpractices at the milling may compromise the quality of coffee produced thus affect the level of performance of the cooperative society. The cooperative has little influence on quality during milling of coffee.

On a five-point scale, the average mean of the responses was 3.51 which means that majority of the respondents were agreeing with most of the statements; Most of these statements were about agreeing that the factories were pursuing quality. A mean of 3.51 is high above the mean of 3 which means that most factories were in pursuit of quality meaning that the quality would be higher and hence the performance. The answers were varied as shown by a standard deviation of 1.27 which showed that the factories quality strategies were similar with minimal outliers.

Table 4.6: Quality of Coffee and Performance of Cooperative Societies

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
Our factory has invested heavily on training of farmers on production of quality coffee	7.20%	17.90%	16.7%	46.4%	11.90%	3.5	1.2
Our factory has invested heavily on training of workers on production of quality coffee	9.50%	14.30%	10.70%	52.40%	13.10%	3.7	1.2
The grade of coffee is affected by the changes in weather which affects performance our coffee factory	1.20%	0.00%	15.50%	33.30%	50.00%	4.3	0.8
There are regular self-inspection and quality audits exercises in the factory	16.70%	8.30%	3.60%	54.80%	16.70%	3.5	1.3
Certification helps us produce higher quality coffee	31.00%	14.30%	19.00%	14.30%	21.40%	2.8	1.5
Lack of access to farm inputs leads to poor quality coffee	13.10%	4.80%	4.80%	26.20%	51.20%	4.0	1.4
Over-fermentation of coffee is a major problem in this factory	27.40%	34.50%	3.60%	21.40%	13.10%	2.6	1.5
Management is actively involved in quality improvement	3.60%	17.90%	8.30%	50.00%	20.20%	3.8	1.1
Malpractices at the milling compromises out quality	12.60%	16.70%	10.70%	45.70%	24.30%	3.2	1.4
Average						**3.5**	**1.3**

4.6.2.1 Coffee quality classification

The best coffee is considered to be class 1 and the worst is class 10. To gauge the performance of the factories in terms of quality of coffee produced, coffee falling under class 1 to 5 was expressed as a percentage of all the coffee produced. Figure 4.11 shows the proportion of the top 5 classes (coffee class 1 – class 5) as a percentage of total quantity of coffee in all classes (class 1 – 10). The trend analysis results revealed that the mean percentage of coffee in class 1 - 5 in the year 2014 was 58.774%. The percentage of these top classes didn't vary much over the years. The change in quality of the coffee in 2016 could be attributed to drought in the coffee year. The United States Department of Agriculture (USDA) in their 2015 Kenya Coffee report had also predicted the decline due to drought.

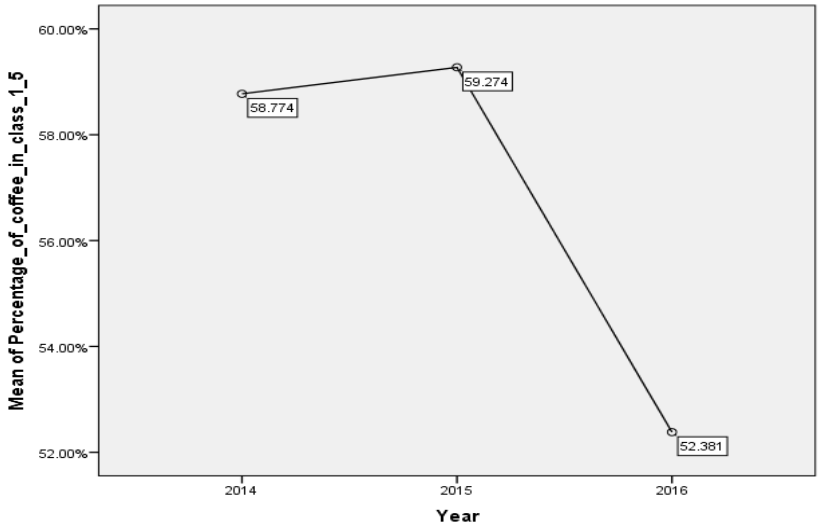

Figure 4.11: Percentage of top coffee quality classes (class 1 – 5)

4.6.2.2 Grades Distribution

The proportion of the top grades of coffee (AA, AB, PB, and E) as a percentage of all grades of the coffee produced was determined for each factory. The combined results for all factories are shown in Figure 4.12 below. The trend analysis results in Figure 4.12 revealed that the mean percentage of top grades of coffee in the year 2014 was 51.46%%. There were no much changes in the years 2015 and 2016. The drop in year 2015 could either be by chance or due to the biennial production of Arabica coffee. High proportion of top grades would be beneficial to the cooperative society as they fetch significantly higher prices than the other grades. According to KCTA (2016) the top grades fetched the following average prices in dollars per 50 kgs; Top grades; Grade AA – 283, AB – 237, PB – 230. Off grades; Grade C – 208, TT – 194, T – 129, MH – 111, ML – 102.

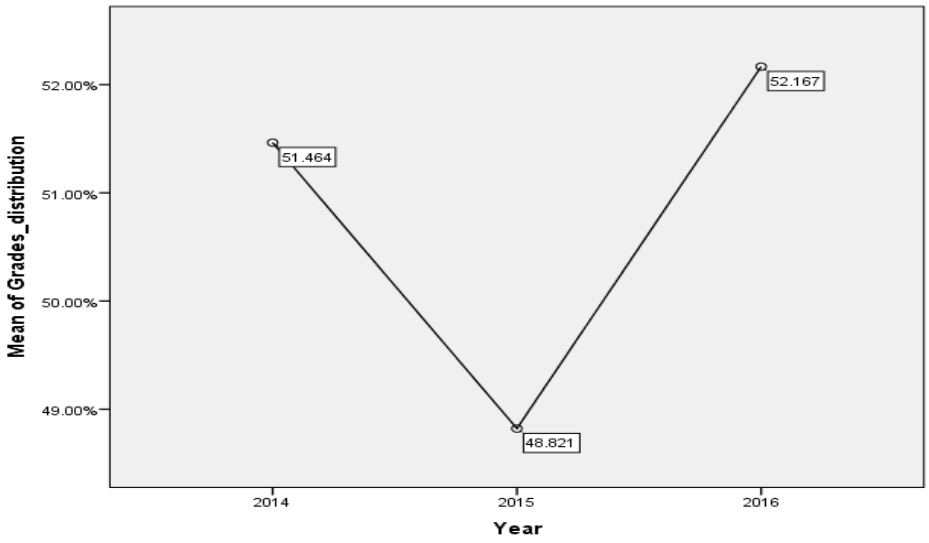

Figure 4.12: Grade distribution

The results in Table 4.7 showed that percentage of coffee in class 1 - 5 and performance of coffee cooperative societies are positively and significantly related (r=0.1048, p=0.031). This implies that production of quality coffee would improve the performance of cooperative society. The findings agreed with that of Koskei (2015) who argued that coffee quality determines the income of the coffee produced. It is also supported by Hajjat and Hajjat (2014) who argued that the external and internal performance of a firm can be improved through examination and putting emphasis on some elements of product quality. Kathurima (2016) argued that quality differentiates coffee prices and command premiums. Quality will, therefore, cause higher performance of the cooperatives.

Table 4.7: Correlation between quality of coffee and performance of cooperatives

	Performance	**Percentage of coffee in class 1 - 5**
Percentage of coffee in class 1 - 5	1.000 0.1048 0.031	1.000

4.6.3 Diversification and Performance of Coffee Cooperatives

The respondents were asked to give their opinion on effect of diversification to non-coffee business on the performance of coffee cooperative societies in Kenya. Majority of the respondents (85%) believed that diversification to non-coffee business affected the performance of coffee cooperative societies. This implies that the more diversified a cooperative society is the more it is likely to perform. These findings agreed with that of Culas and Mahendrajah (2005) who argued that performance of a coffee factory is highly affected by

the level of diversification to other businesses. Only (15%) indicated that diversification to non-coffee business would not affect the performance of coffee cooperative societies in Kenya. Diversification expands markets of a company and increases income (Chiranib et al. 2013).

The respondents were further asked to indicate their opinion on what extent diversification to non-coffee business affected the performance of coffee cooperative societies in Kenya. The results in Figure 4.13 show that majority of the respondents (67.07%) believed that diversification to non-coffee business affected the performance of coffee cooperative societies to a great extent. This implies that diversification to non-coffee business by the coffee cooperatives is likely to improve the level of performance of the cooperative society. These findings agreed with that of Culas and Mahendrajah (2005) who argued that performance of a coffee factory is highly affected by the level of diversification to other businesses. This is also in tandem with Okibo and Karagu (2014) who stated that cooperatives should introduce more products to remain competitive in the market. Only a small percentage didn't believe of any improvement in performance as a result of diversification.

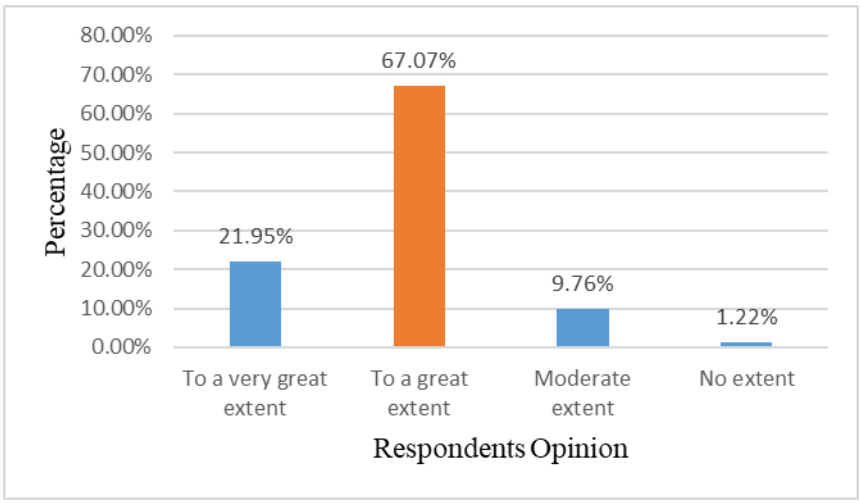

Figure 4.13: Extent Diversification to Non-Coffee Business and Performance

The study further sought to establish the extent to which the diversification to non-coffee business affect performance of coffee cooperative societies. The results of this study were as depicted in Table 4.8.

The results in Table 4.8 revealed that majority of the respondents (79.80%) agreed with the statement that diversification to non-coffee businesses would improve the performance of the factory. This implies that coffee factories that diversify are likely to perform better than those that do not diversify. Most of the respondents showed agreement with the other statements analyzed above that highlighted the importance of diversification. Diversification to non-coffee businesses would increase the income streams of the cooperatives making them perform better. Diversification would also mitigate the risk of low performance due to unfavourable weather. Karagu and Okibo (2014) advises cooperatives to diversify to other products so as to remain competitive. Athar et al. (2015) argued that managers diversify in

order to get higher returns as well as distribute business risk. When a firm is diversified business units that make losses are able to be supported by the profit making ones.

On a five-point scale, the average mean of the responses was 3.85 which means that majority of the respondents were agreeing with most of the statements that were supporting the positive relationship between diversification and performance; The deviation among the respondents was minimal with a standard deviation of 1.92. This means that there was near consensus that diversification is important in improving the performance of the coffee cooperatives in Kenya.

Table 4.8: Diversification to non-coffee business and performance

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
		%					
Diversification to non-coffee businesses would improve/has improved the performance of our factory	1.2	7.1	11.9	51.2	28.6	4.0	0.9
The diversification strategies in the factory would help/has helped cope with competition	3.6	8.3	10.7	53.6	23.8	4.3	4.5
Risk has been/would be minimal due to diversification	6.0	15.5	19.0	50.0	9.5	3.4	1.1
Farmers have benefited/would benefit from diversification	9.5	6.0	13.1	48.8	22.6	3.7	1.2
Average						**3.9**	**1.9**

4.6.3.1 Non coffee Products Introduced

The number of non- coffee products that a factory was considered to be a measure of diversification in the factory. Figure 4.14 below summarizes the mean number of products introduced. The average number of product introduced in the year 2014 was 0.25 . The average decreased slightly to 0.2 in the year 2015 and further increased to 0.24 in the year 2016. It is therefore noted that there isn't much change in the number of products introduced across the three years. Innovation in a firm includes coming up with new products. Piirala (2012) argued that innovativeness is the most significant contributor of a firm's performance. Introduction of new products by the coffee cooperative societies could increase sales and thereby improving their performance.

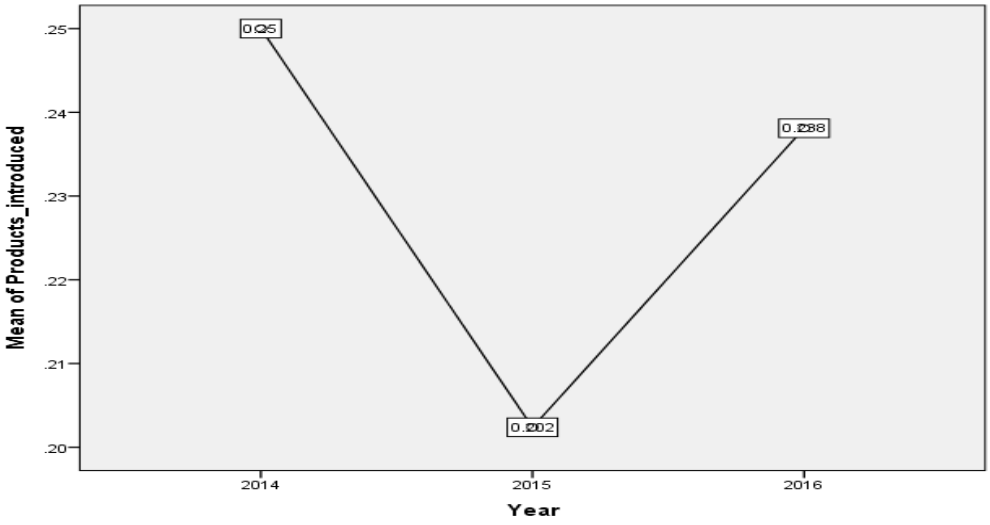

Figure 4.14: Products Introduced

4.6.3.2 Revenue from Diversification

The revenue from diversification activities was calculated and is presented in the Figure 4.15 below. The trend analysis results in Figure 4.15 revealed that average revenue from diversification in the year 2014 was KShs 742, 980. There was only a slight change in 2016. This slight change could be by chance or one society introduced an additional business unit or a new product. The low changes in the revenue from diversification activities meant that the changes in performance as a result of diversification was minimal.

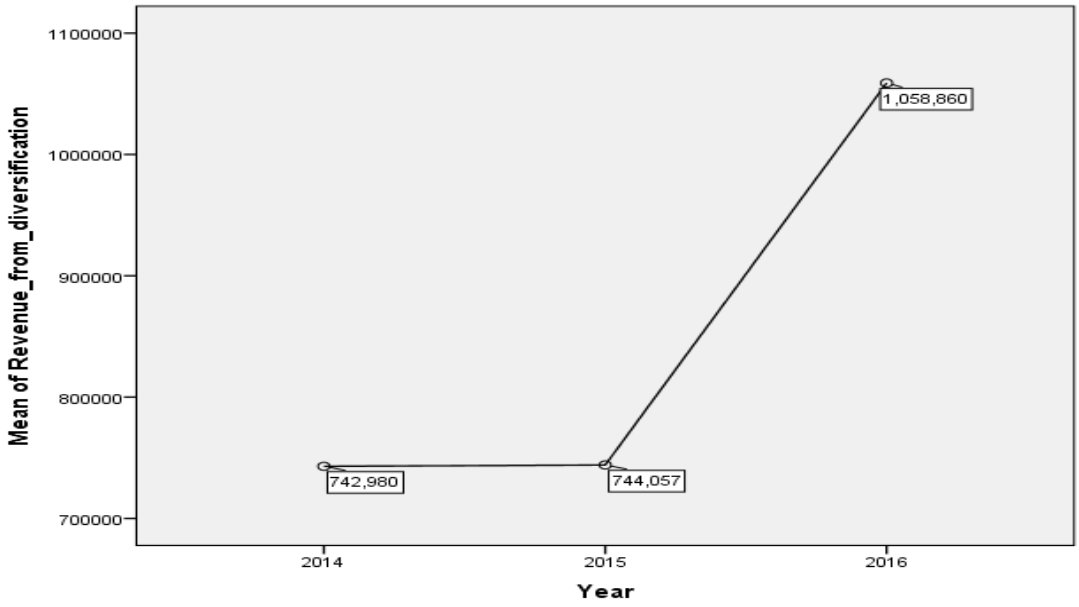

Figure 4.15: Revenue from Diversification

The results in Table 4.9 below revealed that revenue from diversification and performance of coffee cooperative societies are positively and significantly associated (r=0.9042, p=0.0075). This implies that increased in amount of revenue from diversification would lead to improved

performance of coffee cooperative societies. These findings agreed with that of Culas and Mahendrajah (2005) who argued that performance of a coffee factory is highly affected by the level of diversification to other business. This is also supported by Kanyua et al. (2013) who argued that small holder tea farmers in Gatanga, Kenya diversify due to declined income. They also argued that farmers diversify for economic reasons. In Vietnam, diversification aids in risk management as well as ensuring high income for the farmers (Minot et al. 2006).

Table 4.9: Correlation between Diversification and Performance of Coffee

	Performance	**Revenue from diversification**
Performance	1.000	
Revenue from diversification	0.9042	1.000
	0.0075	

4.6.4 Level of Integration and Performance of Coffee Cooperatives

The respondents were asked to give their opinion on the effect of the level of integration along the coffee value chain on the performance of coffee cooperative societies. Majority of the respondents (64%) believed that level of integration along the coffee value chain affect performance of coffee cooperative societies. These findings agreed with Roder (2007) who found that extent of vertical integration is positively correlated with firm's performance. Integration leads to achievement of lower costs and also ensures control of quality of inputs hence improving the performance of the firm (Michael & Sarah, 2009). Cooperatives that engage in coffee farming are able to control the quality of cherry delivered to their wet mills and hence ensuring that quality is high.

The respondents were further asked to indicate the extent to which the level of integration along the coffee value chain affected the performance of coffee cooperative societies. The results are presented in Figure 4.16 below. The results revealed that most respondents believed that level of integration along the coffee value chain affected performance of coffee cooperative societies greatly. These results corroborate largely with Roder (2007) who found vertical integration to be positively related to performance Only a small proportion of the respondents (2.9%) thought there was no effect of integration along the value chain on performance. Goung (2012) in his study on Korea food industries discovered that integration in the food industry makes firms attain more market power which lead to higher profit due to higher share in the consumer price.

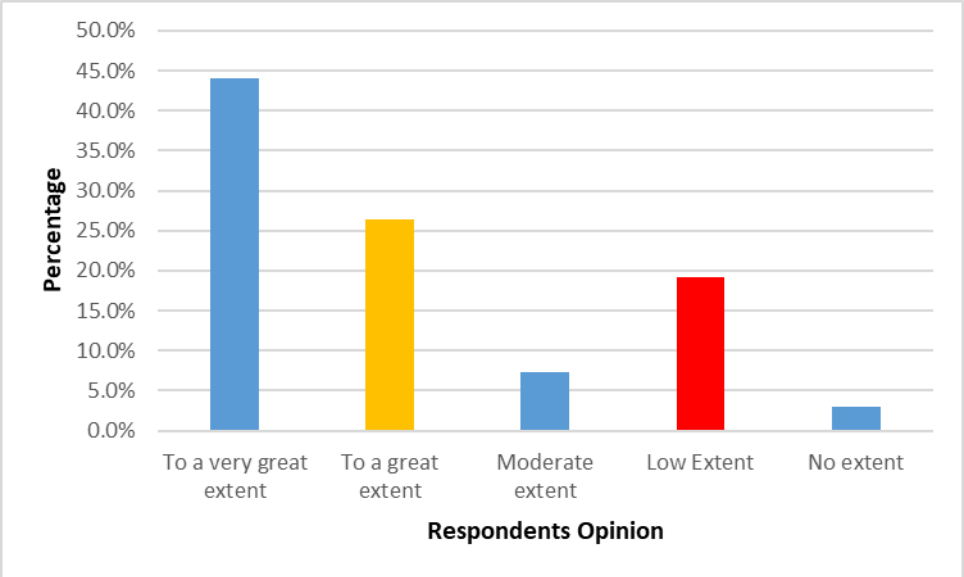

Figure 4.16: Effect of Level of Integration along the value chain on Performance

The study sought to establish the extent to which various issues related to the level of integration along the coffee value chain affected performance of coffee cooperative societies. The results of this study were as depicted in Table 4.10. The results in the table revealed that majority of the respondents agreed with the most statements on the effect of integration activities on the performance of the coffee cooperative societies. Engaging in farming activities would improve the performance of their factory. This implies that factories that engage in farming activities were likely to perform better than those that didn't engage in farming activities. Engaging in farming activities is a form of backward integration that would make the cooperative perform better. Backward integration makes a firm to take more charge of the raw materials which improves quality of the same (Michael & Sarah, 2009). Agency theory explains the competing interests between the principal and the agent. In this case the principal is the cooperative society and the agent are the coffee cherry suppliers.

When a cooperative integrates backwards then the interests of the cooperative have less resistance from the agent and hence likely to have an advantage. Majority of the respondents agreed that engaging in coffee milling, roasting and packaging would improve performance of their factory. Coffee milling, roasting, packaging and marketing would be forward integration strategies that would make the cooperative perform better. Forward integration would make the cooperative operate higher up the coffee value chain. This would make it get a share of the price paid by the coffee consumer. The results also showed that majority of the respondents (92.1%) agreed with the statement that engaging in farm inputs supply would improve performance of their factory. The engagement in inputs supply is another way of integrating backwards. The results also showed that majority of the respondents (88.1%) agreed with the

statement that engaging in marketing activities (forward integration) would improve performance of the factory.

On a five-point scale, the average mean of the responses was 3.89 which means that majority of the respondents believed that integration along the coffee value chain would improve the performance of the coffee cooperatives.; The low standard deviation of 1.29 showed that the respondents' answers to most statements were close which is a near unanimous agreement with the importance of integration.

Table 4.10: level of integration along the coffee value chain and performance

Statement	Strongly disagree	Disagree %	Neutral	Agree	Strongly Agree	Mean	Std. Dev
Engaging in farming activities would improve the performance of the factory	6.0	26.2	3.6	55.6	8.7	3.4	1.1
Engaging in coffee milling would improve performance of the factory	3.6	6.0	10.7	61.9	17.9	3.9	0.9
Engaging in coffee roasting and packaging would improve performance of the e factory	9.5	8.3	4.8	55.6	21.8	3.9	2.6
Engaging in farm inputs supply would improve performance of the factory	2.0	6.0	0.0	53.2	38.9	4.2	0.9
Engaging in marketing activities would improve performance of the factory	4.8	0.0	7.1	50.8	37.3	4.2	0.9
Average						**3.9**	**1.3**

4.6.4.1 Income from Integration Activities

The income from integration activities for the three years studied is presented in the Figure 4.17 below. The trend analysis results from the figure showed that the average income from integration activities in the year 2014 was KShs 62,475 this increased slightly in 2015 and again decreased in 2016. The results show that only a small proportion of coffee cooperatives income is realized from integration activities. Gouk (2012) argued that farmers' attitude to integration depend on the product's perishability. Those perishable call for value addition/forward integration. Coffee parchment is the output from the coffee factories. The parchment is at a moisture content of about 11% which makes it stable. This could explain why there is low income from integration due to only a few factories engaging in integration.

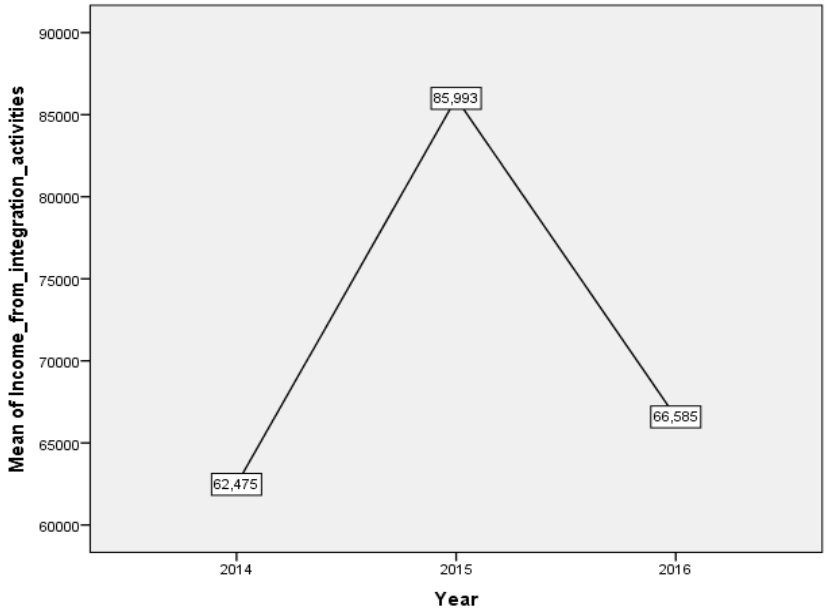

Figure 4.17: Income from Integration

4.6.4.2 Correlation between Level of Integration along coffee Value Chain and Performance of Coffee cooperative societies

This section presents the results of the correlation between level of integration and the performance of the coffee cooperative society. The results in Table 4.11showed that income from integration activities and performance of coffee cooperative societies are positively and insignificantly associated (r=0.7115, p=0.231. This implies that change of level of income from integration activities may not have any significant effect on the performance of coffee cooperative societies. This may be attributed to the fact that only a small percentage of income is as a result of integration activities. The results could be attributed to the fact that the parchment coffee is stable (doesn't deteriorate in quality upon storage), therefore the factories may not find it necessary to integrate by processing further. Gouk (2012) argued that farmers' attitude to engage in forward integration depended on the product. The perishable ones called for more forward integration. Roder (2007) who found that extent of vertical integration is positively correlated with firm's performance. This could be true in situations where integration has been done in a bigger magnitude.

Table 4.11: Correlation between Level of Integration and Performance

	Performance	**Income from integration activities**
Performance	1	
Income from integration activities	0.7115	1
	0.231	

4.6.5 Entry into Non-Traditional Markets and cooperatives' Performance

The respondents were asked to give their opinion on the effect of entry into non-traditional markets of coffee on the performance of coffee cooperative societies. They gave their answers as; NO effect and YES, there was effect. The results revealed that majority of the respondents (76%) argued that entry into non-Traditional Markets affected the performance of coffee cooperative societies. This implies a cooperative society that channels its coffee to non-traditional Markets may have a higher performance. These findings agreed with that of Wade (2013) who found that entry of firms into non-traditional market improved their performance. Miyata et al. (2009) in their studies in China's small scale farming subsector found out that contract farming (where farmers are contracted by buyers and are supported to achieve agreed level of production and quality) could help in increasing the income of small scale farmers. If cooperative societies would get into forward contracts with overseas buyers and roasters, then they could probably perform better.

The respondents were further asked to indicate the extent to which entry into non-traditional markets affected the performance of coffee cooperative societies. The results of this are presented in Figure 4.18 below. The results in the figure revealed that majority of the respondents believed that entry into non-traditional markets affected performance of coffee cooperative societies to a great extent. These findings agreed with that of Wade (2013) who found that that entry of firms into non- traditional market affects their performance positively. No respondent did indicate that the entry into non-traditional markets didn't have any effect on the performance of the coffee cooperatives. Miyata, Minot and Hu (2007) also argued that contract farmers earn slightly more than independent farmers. According to Kenya Coffee

Traders Association (2016) coffee sold in the direct markets that was introduced in 2006 always high prices than the traditional auction market. Such high prices would make the cooperatives perform better.

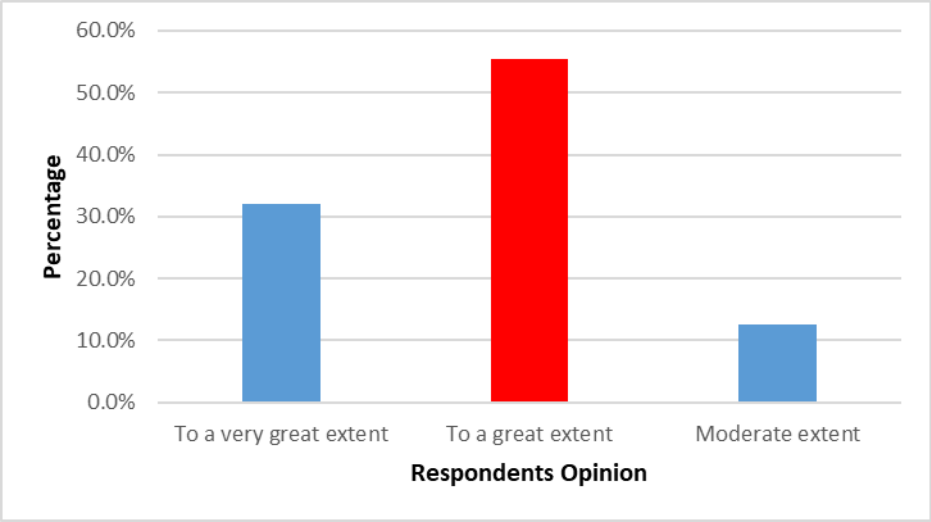

Figure 4.18: Entry into Non Traditional Markets and Performance

The study sought to establish the extent to which the various market related issues affected the performance of coffee cooperative societies. A Likert scale of 5 to 1 (5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree and 1 = strongly disagree) was used to measure these practices. The results of this study were as depicted in Table 4.12.

The results in table 4.12 revealed that majority of the respondents agreed with the statement that marketing of coffee needed to be improved. Majority of the respondents (57.1%) disagreed with the statement that there has been an increase in new markets. The results also

showed that majority of the respondents (67.9%) agreed with the statement that lack of information leads to lack of alternative markets. These results implied that the respondents felt that the market performance of their cooperatives was still deficient. It is important for factories to have information on alternative markets since this would affect the level of performance. This implies that the farmers need information from the policy and the marketing agents to be able to produce what the market needs. This would make the coffee cooperatives perform better. The results also showed that half of the respondents disagreed with the statement that over-regulation bars them from getting into non-auction coffee markets. This implies that the respondents were comfortable with the regulatory affairs in the country on matters that touched on coffee marketing.

Table 4.12: Effect of entry into non-traditional markets on the performance

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
		%					
Marketing of coffee needs to be improved	4.8	1.2	6.0	38.1	50.0	4.3	1.0
There has been increase in new markets	44.0	13.1	11.9	21.4	9.5	2.4	1.5
Lack of information leads to lack of alternative markets	9.5	16.7	6.0	40.5	27.4	3.6	1.3
Over-regulation bars us from getting into non-auction coffee markets	32.1	17.9	7.1	35.7	7.1	2.6	1.5
Average						**3.2**	**1.3**

4.6.5.1 Income from Non-Traditional Markets

This section discusses the entry into non-traditional markets by some coffee factories. It is evident that income from non-traditional coffee markets is not much compared to the coffee sold through the auction. This is evident from Figure 4.19 below.

Figure 4.19 revealed that income from non-tradition market in the year 2014 was KShs 160, 470. This decreased slightly in the years 2015 and 2016.This could have a negative impact on the performance of the cooperative society. The factories that are engaged in non-traditional markets are likely to perform better than the others since some non-traditional markets are more lucrative. The slight decrease in the income from non-traditional markets could be due to quality deterioration or production of better coffee by other countries and regions. The low income from non-traditional markets could be due to the fact that Nairobi coffee auction offers prices that are above the New York Stock Exchange thereby attracting the farmers to the auction than to the alternative markets. Kenya produces less than 1% of the global coffee production. This makes it hard for the international traders to partner with Kenya coffee producers due to their in ability to supply coffee stocks year round.

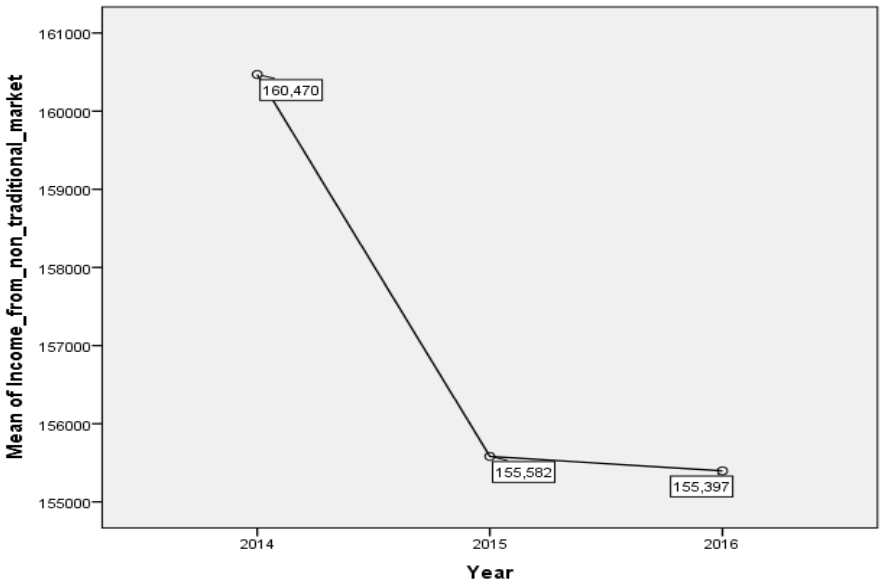

Figure 4.19: Income from Non-Traditional Markets

4.6.5.2 Correlation between entry into non-traditional markets and Performance of Coffee cooperative societies

This section discusses the results of the correlation between entry into non-traditional markets and the performance of coffee cooperatives. It shows presence of positive correlation.

The results in Table 4.13 revealed that income from non-traditional market and performance of coffee cooperative societies are positively and significantly associated (r=0.988, p=0.0009). This implies that change of income from non-traditional markets may affect the performance of coffee cooperative societies. Sleuwagen and Goedhuys (2013) found out that certification makes a firm access markets that helps improve performance. The higher performance could

be attributed to markets offering pre-financing credit of up to 50% as is case in FLO, Ruben, (2011). In Nicaragua private label markets, RA and CAFÉ, help improve quality of coffee which in turn improve prices and hence performance of producer groups (Ruben, 2011). Farmers engaging in contract farming earn significantly more than the independent farmers, (Dighuan et al. 2007).

Table 4.13: Correlation between entry into non-traditional markets and Performance

	Performance	**Income from integration activities**
Performance	1.000	
Income from non-traditional markets	0.9888	1.000
	0.0009	

4.6.6 Entrepreneurial Orientation

The respondents were asked to indicate their opinion on whether there was a positive effect of entrepreneurial orientation and performance of coffee cooperative societies. The results revealed that majority of the respondents (64%) indicated that entrepreneurial orientation affects performance of coffee cooperative societies. These findings agreed with that of Mahmoud and Hanafi (2013) who argued that entrepreneurial orientation affects the business performance of women enterprises in Malaysia. Karanja (2013) argued that entrepreneurial orientation is a major determinant of a firm's growth and profitability.

The respondents were further asked to indicate to what extent entrepreneurial orientation affected performance of coffee cooperative societies. The results are presented in the figure 4.20 below.

The results in figure 4.20 revealed that many respondents (47.0%) indicated that entrepreneurial orientation affects performance of coffee cooperative societies to a great extent, (25.3%) indicated that entrepreneurial orientation affects performance of coffee cooperative societies to a very great extent. This implies that entrepreneurial orientation may affect performance of coffee cooperative societies. These findings substantiate study by Mahmoud and Hanafi (2013) who argued that entrepreneurial orientation affects the business performance of women enterprises in Malaysia. Piirala (2012) also found a strong correlation between some three dimensions of entrepreneurial orientation and the performance of a firm.

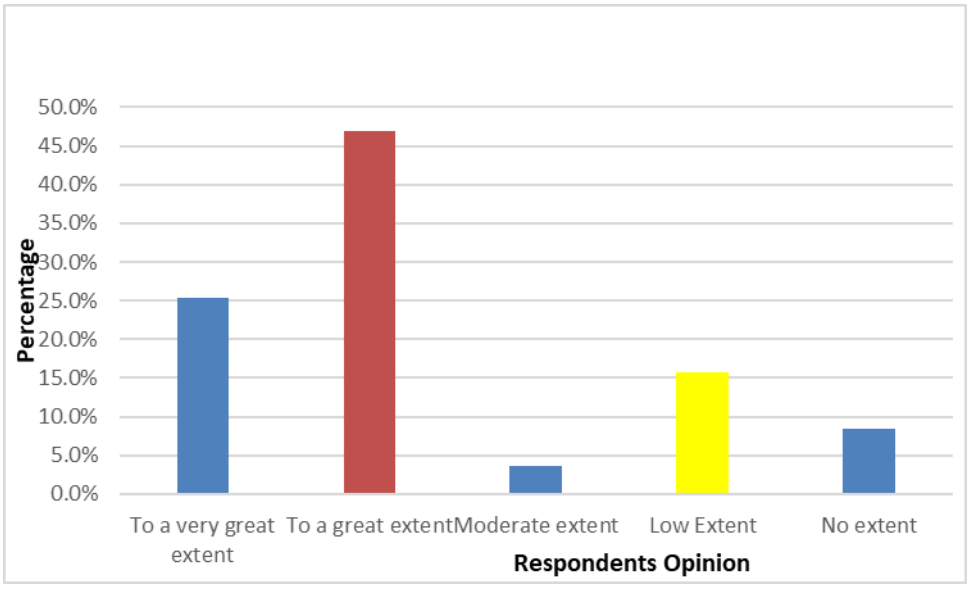

Figure 4.20: Entrepreneurial orientation and Performance

4.6.6.1 Proactiveness

This section discusses the results of proactiveness in the coffee factories. The respondents were given statements associated with proactiveness which showed an overall result of low proactiveness. This is presented in the table 4.14. The results showed that some respondents agreed with statements that indicated proactiveness in business. These were anticipation of changes in the industry and use of latest technology. 45% of the respondents believed that their factories were proactive. Being proactive in business has the implication of high performance by the factories. Proactiveness involves seeking new opportunities ahead of competitors in business, Deepa (2016). These new opportunities would make the factory perform better. Olawoye (2016) also found a positive and significant relationship between proactiveness and performance of firms in the Nigeria's stock exchange. 60% of the respondents reported that their factories didn't have a designated person for monitoring opportunities in the market. This could be attributed to limited resources to engage someone to be in charge of seeking business opportunities. Piirala (2012) also found proactiveness to be a significant contributor of a firm's performance.

Table 4.14: Proactiveness and Performance

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
	%	%	%	%	%		
My factory is proactive in business practices	14.3	31.0	8.3	28.6	17.9	3.1	1.4
My factory anticipates changes in the industry before they occur	10.7	16.7	11.9	45.2	15.5	3.4	1.2
My factory encourages use of latest coffee production methods and processes	21.4	25.0	2.4	35.7	15.5	3.0	1.5
My factory is the market leader in the introduction of new products/services/technology/process	40.5	15.5	6.0	26.2	11.9	2.5	1.5
My factory has a unit/person for monitoring opportunities in the market	36.9	23.8	13.1	17.9	8.3	2.4	1.4
Total						**2.9**	**1.4**

4.6.6.2 Risk Taking and Performance

The respondents were tasked to rate their factories based on several indicators of risk taking behavior on a Likert scale. The results were as presented in table 4.15 below. The table shows that the respondents disagreed with most of the indicators of risk taking behavior. It is evident that the factories do not commit large resources on projects with unknown outcomes. They also do not take business risks. This is attributed to the poor performance of coffee

cooperatives in Kenya making it hard for them to engage in risky behaviours. Low risk taking affects the performance of the cooperatives negatively. Risk taking is venturing into the unknown and committing resources in substantial amounts in uncertain environment. By doing so the firm expects to yield benefits. Piirala (2012) found a positive relationship between risk taking behavior of a firm and its performance. Karanja (2014) also found risk taking to influence growth of SMEs in Kenya.

Table 4.15: Risk Taking and Performance

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
	%	%	%	%	%		
Our factory management are good in risk taking	26.2	32.1	11.9	22.6	7.1	2.5	1.3
My factory commits large resources on new projects with uncertain outcome	33.3	26.2	10.7	23.8	6.0	2.4	1.3
My factory takes loans for projects	21.4	21.4	20.2	28.6	8.3	2.8	1.3
My factory takes business risks	28.6	28.6	8.3	26.2	8.3	2.6	1.4
My factory does not shy away from funding new methods and processes even if they have not been tested in the market and could be risky	39.3	19.0	10.7	23.8	7.1	2.4	1.4
Average						**2.7**	**1.5**

4.6.6.3 Innovativeness and Performance

The study sought to rate the innovativeness of the coffee factories based on several indicators on a Likert scale. The results were as presented in table 4.16 below. The results in table 4.16 revealed that majority of the respondents agreed with the statements supporting their factories' innovativeness. These included introduction of new products, being creative, having research and development sections and ability to convert ideas into products, processes and into wealth. Innovation is a strong stimulus of sustained competitive advantage of a firm. Innovativeness would make the factories perform better. This corroborates with Karanja (2014) who found innovativeness to be associated with a firm's performance. Piirala (2012) compared some three dimensions of entrepreneurial orientation and found innovativeness to be the most significant contributor of a firm's performance. Olawoye (2016) found out that as a firm increases its innovativess in terms of products, processes and technology, its performance improves. Innovativeness improves performance since it involves pursuit and introduction of new products, new processes, new markets and new sources of raw materials. A high mean of 3.7 shows that most of the respondents agreed with most statement on innovativeness which implies that most factories had high innovativeness. This in turn implies high performance by the factories. The low standard deviation of 1.2 shows that there was near consensus on most statements on innovativeness.

Table 4.16: Innovativeness and Performance

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
	%	%	%	%	%		
My factory has introduced new products in the last 3 years	9.2	6.2	16.7	22.6	44.8%	3.6	1.3
My factory management is creative business wise	10.9	20.0	4.5	62.6	12.0	3.8	1.3
Our factory has a research and development section	8.9	11.1	20.5	38.3	21.2	3.6	1.2
My factory has adequate resources for R & D	9.8	19.6	14.3	33.3	23.0	3.8	1.2
My factory is able to convert ideas into products and processes	3.8	17.9	16.7	23.3	29.4	3.5	1.3
My factory is able to convert ideas into wealth	3.9	17.8	16.4	39.3	22.7	3.9	1.2
My factory support employees ideas/creativity and innovativeness	3.8	17.9	6.7	49.3	32.4	3.7	1.0
Average						**3.7**	**1.2**

4.6.6.4 Competitive Aggressiveness and Performance

The study sought to rate the competitive aggressiveness of factories based on several indicators on a Likert scale. The results were as presented in page 4.17 below. The results in table 4.17 above revealed that majority of the respondents (55.4%) disagreed with the statement that there was stiff competition in the business. This implies that there is no stiff competition in most factories and this may affect the level of performance of the cooperative society. This is attributed to the low production of coffee in Kenya making buyers scrabble for the little coffee that is available. Since there was no competition then the issue of some factories outshining others could not arise. The mean of the indicators was 2.4 showing that there was low competitive aggressiveness in the factories. This could affect the performance negatively. Olawoye (2016) argued that as a firm increases aggressiveness the performance increases.

Table 4.17: Competitive Aggressiveness and Performance

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
	%	%	%	%	%		
There is stiff competition in the business	29.2	26.2	16.70	22.6	4.8	2.5	1.22
Our factory is able to outshine our competitors	40.5	20.2	14.30	22.6	2.4	2.3	1.23
Our factory is the best in the area	28.9	18.1	20.50	31.3	1.2	2.6	1.2
Average						**2.4**	**1.5**

4.6.6.5 Autonomy and performance

The respondents were tasked to rate their autonomy based on several indicators on a Likert scale. The results were as presented in table 4.18 below. Results in table 4.18 show that over 40% of respondents felt that their factories were not independent in decision making and also had interference in business. This implies that they had low autonomy. Autonomy in terms teams and individuals' independence was high. The mean of 3.1 shows that the level of autonomy is almost neutral – it could have been high due to teams' independence but was made low due to factories low independence. The low autonomy affected the performance of

the factories negatively. Allowing employees to have autonomy in their work makes them to be proactive in their stations (Karpacz, 2016). This makes them solve their problems with much ease which improves their performance and that of the organization. Job autonomy makes the employee more creative making him motivated to contribute to the company more. This works to improve the performance (Karpacz, 2016).

Table 4.18: Autonomy and Performance

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
Our factory makes independent decisions in the industry	29.8	19.0	14.3	33.3	3.6	2.9	1.1
There is no interference in the business	23.8	17.9	16.7	39.3	2.4	2.8	1.3
Our teams have independence in the job	3.8	17.9	19.7	36.3	22.4	3.5	1.1
Individuals have independence in the jobs	13.4	37.9	6.0	40.0	2.8	3.2	1.0
Average						**3.1**	**1.1**

4.6.6.6 Entrepreneurial Orientation

The respondents rated each of the five dimensions of entrepreneurial orientation on a scale of 1 to 100%. This is presented in Figure 4.21 below. The figure shows that the rate of entrepreneurial orientation remained the same in the three years. This is attributed to the fact that the factories management may not have changed across the years. The cooperatives' articles of association also remain unchanged for many years.

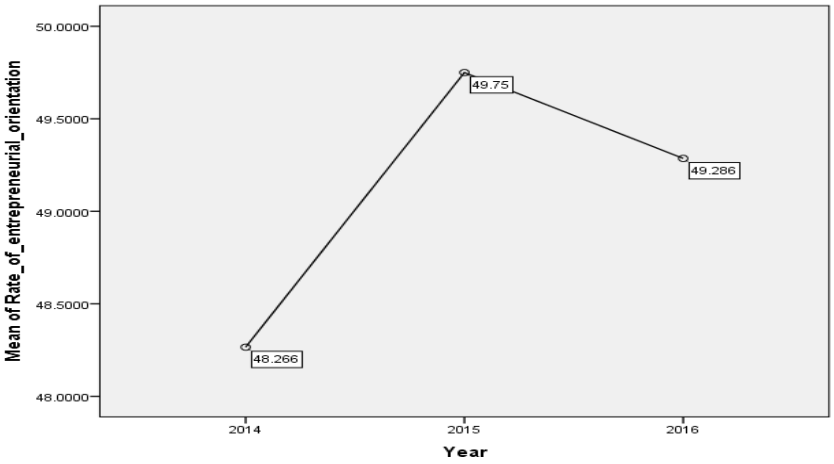

Figure 4.21: Level of Entrepreneurial Orientation

4.6.7 Performance of the Cooperative Society

The performance of coffee cooperatives could be measured in terms of many parameters. These could be financial and non-financial. This study used the income in Kenya Shillings per kg of clean coffee paid to the factory, percentage of active members and amount of money spent on community projects.

4.6.7.1 Percentage of Active Members

This is the proportion of active members over the total membership. A well performing factory will not have many members leave it for other factories. As such the percentage will be high. A high percentage of active farmers will mean that they give business to their cooperative and hence the performance will be high. Figure 4.22 shows the percentage of active farmers in the cooperatives. The trend analysis results in Figure 4.22 above revealed

that the average of percentage of active members in the three years remained almost the same. The percentage active membership of around 60% was found to be a bit low. This affects the performance of the cooperative negatively. The low percentage goes against one of the principles of cooperative management – the economic participation of members. The cooperatives should come up with innovative ways to increase the percentage of active members in the cooperatives to improve the performance.

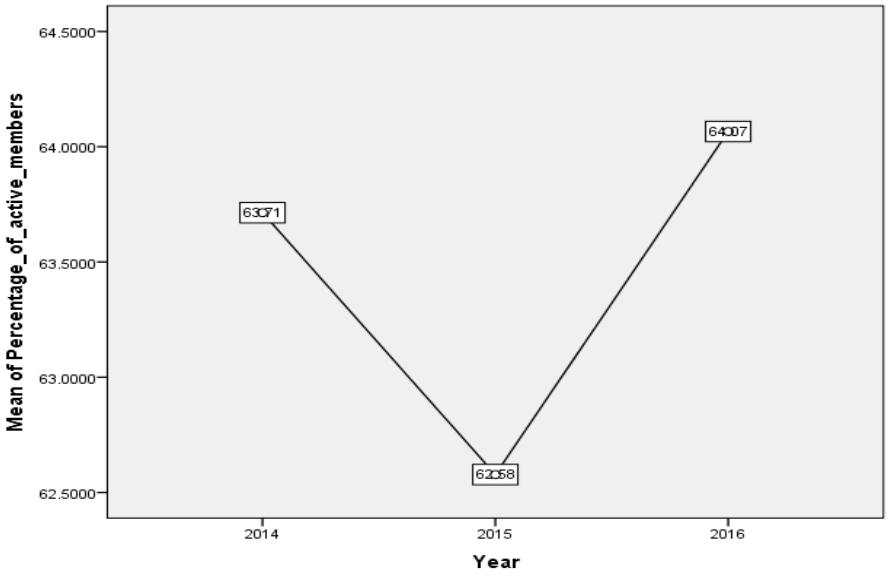

Figure 4.22: Percentage of Active Members

4.6.7.2 Amount spent on Community Projects

Some of coffee proceeds is spent on community projects sometimes as a requirement of certification schemes. This may also be considered as a performance measure as the community benefits from the cooperative. This is money diverted from benefitting farmers to benefit the community. The mean percentage of amount of money spent on community

projects is presented in Figure 4.23. The trend analysis in Figure 4.23 results revealed that average amount of community projects in the year 2014 was KShs 3, 220, 902. However, the average amount of community projects decreased increased to KShs 2, 966, 140 in the year 2015 and increased to KShs 2, 968, 521 the year 2016.The change is minimal. The investment in community projects does not change much across the years as it is a constant social premiums given by the certified coffee buyers. This depends on the quantity of coffee sold to the certified coffee markets. This quantity doesn't change much.

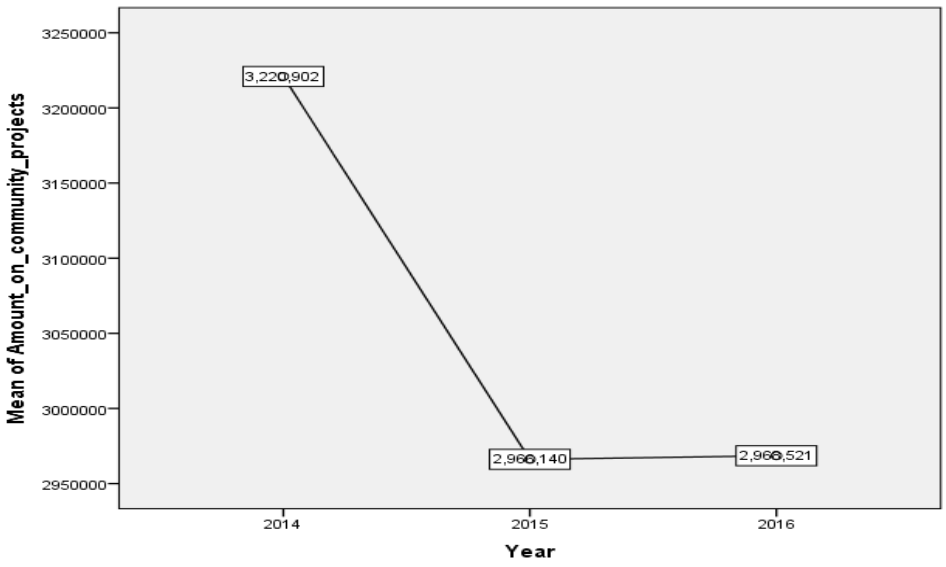

Figure 4:23: Amount of Community Projects

4.6.7.3 Income per kilo of clean coffee in the Factory

The performance was measured in Kenya Shillings per kilo of clean coffee paid to the coffee factory. It was also easy to obtain the information since the sales records at the factory are in dollars while farmers' payments records are in Kenya shillings. The average rate paid to the

factories is shown in Figure 4.24. The trend analysis results in Figure 4.24 revealed that average income per kilo of clean coffee in the didn't vary much across the years studied. Decline in the average income per kilo of clean coffee from factories in the Kenyan cooperative societies would mean decline performance of cooperative societies in Kenya. The decrease and increase are as a result of changes in international coffee prices due to forces of supply and demand. The changes in quality of coffee due to factors like weather, farm and factory operations may also cause changes in payment rate.

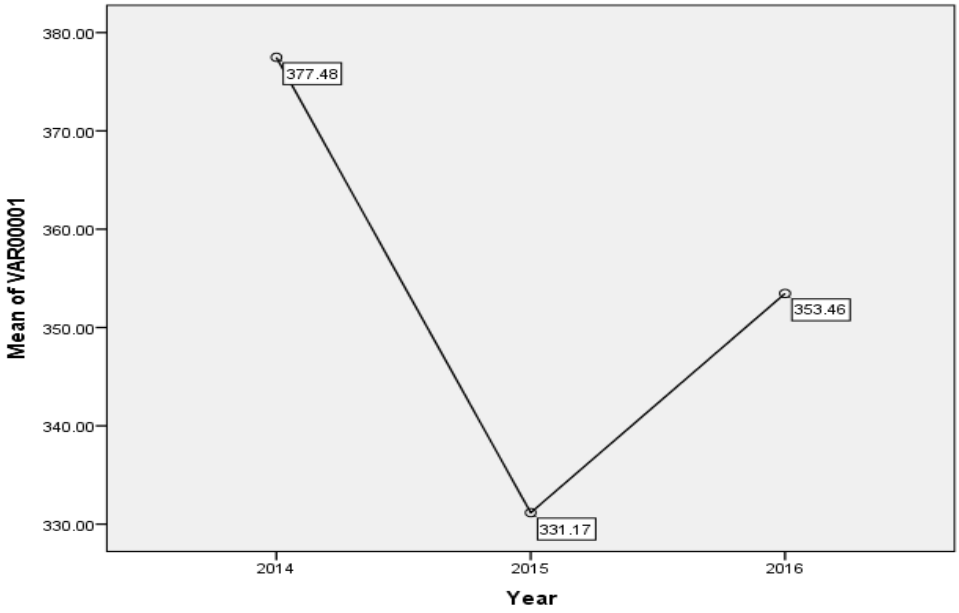

Figure 4.24: Average income to the Factory

4.7 Regression Assumption Tests

4.7.1 Normality Test

The test for normality was examined using the graphical method approach as shown in the Figure 4.25 below. The results in the Figure 4.25 indicate that the residuals are normally distributed. This means that there was no need of conducting non-parametric tests.

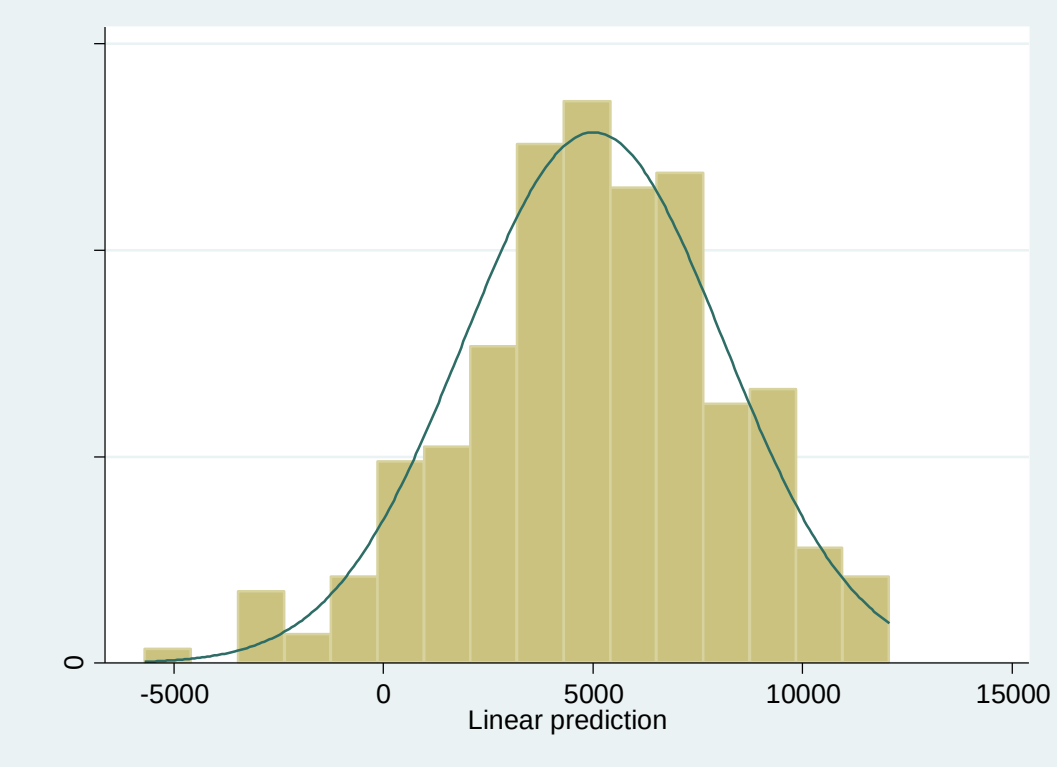

Figure 4.25: Graphical presentation of test of normality.

4.7.2 Multicollinearity

Multicollinearity was assessed in this study using the variance inflation factors (VIF). According to Field (2009) VIF values in excess of 10 is an indication of the presence of Multicollinearity. The results in Table 4.19 present variance inflation factors results and were established to be 1.08 which is less than 10 and thus according to Field (2009) indicates that there is no Multicollinearity.

Table 4.19: Multicollinearity results using VIF

Variable	VIF	1/VIF
Performance	1.19	0.837171
Entrepreneurial orientation	1.12	0.889344
Level of coffee production	1.11	0.903701
Quality of Coffee	1.02	0.97716
Diversification to non-coffee business	1.02	0.977597
Entry to non-traditional market	1.01	0.987032
Level of integration	1.17	0.945021
Mean	1.08	

4.7.3 Heteroscedasticity test

The null hypothesis specifies that $\sigma 2i = \sigma 2$ for i =1...Ng, where Ng is the number of cross-sectional units. The results in Table 4.20 indicate that the null hypothesis of homoscedastic error terms is not rejected as supported by a p-value of 0.0702.

Table 4.20: Test for Heteroscedasticity

Modified Wald test for group wise heteroscedasticity in fixed effect regression model
H0: sigma(i)^2 = sigma^2 for all i
chi2 (252) = 11436.52
Prob>chi2 = 0.0702

4.7.4 Autocorrelation test

Because serial correlation in models biases the standard errors and causes the results to be less efficient, the study adopted the Wooldridge test for autocorrelation which identifies serial correlation in the idiosyncratic error term in a model. From the Table 4.21 the null hypothesis of no serial correlation is not rejected given that the p-value is significant (p-value = 0.4467).

Table 4.21: Test of Autocorrelation

Wooldridge test for autocorrelation in panel data **H0: no first-order autocorrelation**
F(1, 250) = 0.585
Prob > F = 0.4467

4.7.5 Hausman Test

In order to determine whether the fixed or random effects model is appropriate, Hausman test was used. The Hausman test fundamentally tested whether the unique errors (ui) are correlated with the regressors. The results in Table 4.22 illustrate the results of the Hausman test. A resultant p value of 0.002 was smaller than the conventional p-value of 0.05 leading to the rejection of the null hypothesis that the unique errors are not correlated with the regressors and thus the fixed effects model is more appropriate

Table 4.22: Hausman Test Results

Coefficients				
(b) - (B)	**(b-B)**	**sqrt(diag(V b-V_B))**		
fixed	**random**	**Difference**	**S.E.**	
Performance	-0.00261	-0.00045	-0.00216	0.001945
Level of coffee production	-105.713	-114.883	9.170273	28.60778
Quality of Coffee	-0.00039	-0.00021	-0.00018	0.000702
Diversification to non-coffee business	-0.05447	-0.02138	-0.03309	0.033286
Entry to non-traditional market	-0.00416	-0.00346	-0.0007	0.00656
Level of integration	158.9238	61.85045	97.07333	103.8844
Entrepreneurial orientation	0.171263	0.0008	0.170464	0.041972

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)

= 2.26

Prob>chi2 = 0.002

4.8 Inferential Analysis

This section discusses the regression to gauge further the relationship between independent and dependent variables.

4.8.1 Regression Analysis for Level of Coffee production and performance

The results between level of coffee production and performance were presented in the Table 4.23 below. The results presented in the fitness of the model was used in the regression model to explain the study phenomena. Level of Coffee Production was found to be a satisfactory variable in influencing the performance of coffee cooperative society. This is supported by coefficient of determination also known as the R square of 24.01%. This means that level of coffee production explains 24.01% of the variations in the dependent variable which is performance of coffee cooperative society.

Table 4.23: Model Fitness

Indicator	Coefficient
R	0.49
R Square	0.2401
Adjusted R	0.2389

Analysis of Variance

Table 4.24 provides the results on the analysis of the variance (ANOVA). The results indicate that the overall model was statistically significant. Further, the results imply that the level of coffee production is a good predictor of performance. This was supported by an F statistic of

12.4476 and the reported p value (0.019) which was less than the conventional probability of 0.05 significance level.

Table 4.24: Analysis of Variance

	F	Sig.
Regression	12.4476	0.019

The results in Table 4.25 showed that amount of coffee produced has a positive and significant relationship with performance (r=89.72, p=0.01). This implies that increase in level of coffee production by 1 unit would result to increase in performance of the coffee cooperative society by 89.72 units. These findings agreed with that of Hossein Azadi, et al. (2010) who found that the success of a cooperative has a positive correlation with the quantity of the cooperative product that it sells. It is also dependent on 'other incomes' and market access.

Table 4.25: Regression Analysis for level of coffee production

Performance	**Coef.**	**Std.Err**	**z**	**P>|z|**
Amount of coffee produced	89.72	0.003132	1.98	0.01
_cons	6464.48	2273.219	2.84	0.004

The resultant regression equation is as follows;

$Y = 6464.48 + 89.72\ X_1$……4.1

Where

Y is Performance of the coffee cooperative society

X_1 is the level of coffee Production.

4.8.1.1 Hypothesis testing for Level of coffee production

The hypothesis was tested by using F-test values in Table 4.24, above. The acceptance/rejection criteria was that, if the F calculated is greater than F critical, the Ho1 is rejected but if it's less than f critical, the Ho1 fails to be rejected.

The null hypothesis was that there is no significant relationship between level of production of coffee and performance of coffee cooperative societies. Results in Table 4.24 above show that the f calculated was 12.4476 which was greater than the f critical which was 3.94. This indicated that the null hypothesis was rejected hence there is a significant relationship between level of production of coffee and performance of coffee cooperative societies. These findings agreed with that of Hossein Azadi, et al. (2010) who found that the success of a cooperative has a positive correlation with the quantity of the cooperative product that it sells. It is also dependent on 'other incomes' and market access.

4.8.2 Regression Analysis for Quality of Coffee

The results presented in the fitness of the model were used in the regression model to explain the study phenomena. This is presented in table 4.26 below. Quality of coffee was found to be a satisfactory variable in performance of coffee cooperative society. This is supported by coefficient of determination also known as the R square of 10.11%. This means that quality of

coffee explains 10.11% of the variations in the dependent variable which is performance of coffee cooperative society. This results further means that the model applied to link the relationship of the variables was satisfactory.

Table 4.26: Model Fitness

Indicator	Coefficient
R	0.318
R Square	0.1011
Adjusted R	0.1002

Analysis of Variance

Table 4.27 provides the results on the analysis of the variance (ANOVA). The results indicate that the overall model was statistically significant. Further, the results imply that the quality of coffee is a good predictor of performance of coffee cooperative society. This was supported by an F statistic of 13.09 and the reported p value (0.021) which was less than the conventional probability of 0.05 significance level.

Table 4.27: Analysis of Variance

	F	Sig.
Regression	13.09	0.021

The results in Table 4.28 showed that quality of coffee has a positive and significant relationship with performance (β=13.98, p=0.031). This implies that increase in quality of coffee by 1 unit would increase performance by 13.98 units. The findings agreed with that of Koskei (2015) who argued that coffee quality determines the income of the coffee produced. It

would therefore prudent for the coffee factories management to engage in innovative ways of improving quality which would in turn improve the performance of the factory.

Table 4.28: Regression coefficient for Quality of Coffee

Performance	Coef.	Std. Err	z	P>|z|
Quality of Coffee	13.98	65.1517	1.75	0.08
_cons	11845.8	5482.81	2.16	0.031

The resultant regression equation is as follows;

$Y = 11, 845.8 + 13.98 X_2$…….4.2

Where

Y is Performance of the coffee cooperative society

X2 is the Quality of Coffee – Percentage of coffee in classes 1 - 5

4.8.2.1 Hypothesis testing for Quality of coffee

The null hypothesis was that there is no significant relationship between quality of coffee and performance of coffee cooperative societies. Results in Table 4.27 above show that the f calculated was 13.09 which was greater than the f critical which was 3.94. This indicated that the null hypothesis was rejected hence there is a significant relationship between quality of coffee and performance of coffee cooperative societies. These findings agreed with that of Koskei (2015) who argued that Coffee quality determines the performance of the factory.

4.8.3 Regression Analysis for Diversification to non-coffee business

The results of relationship between diversification to non-coffee business and performance were presented in the Table 4.29 below. The results presented in the fitness of the model in table 4.29 above were used in the regression model to explain the study phenomena. Diversification to non-coffee business was found to be a satisfactory variable in performance of coffee cooperative society. This is supported by coefficient of determination also known as the R square of 27.04%. This means that diversification to non-coffee business explain 27.04% of the variations in the dependent variable which is performance of coffee cooperative society.

Table 4.29: Model Fitness

Indicator	Coefficient
R	0.52
R Square	0.2704
Adjusted R	0.2682

Table 4.30 provides the results on the analysis of the variance (ANOVA). The results indicate that the overall model was statistically significant. Further, the results imply that the diversification to non-coffee business is good predictor of performance of coffee cooperative society. This was supported by an F statistic of 8.19 and the reported p value (0.021) which was less than the conventional probability of 0.05significance level.

Table 4.30: Analysis of Variance

	F	Sig.
Regression	8.19	0.021

The results in Table 4.31 showed that revenue from diversification had a positive and significant relationship with performance (r=3.4, p=0.017). This implies that increase in revenue from diversification by 1 unit would lead to increase in performance of coffee cooperative society by 3.4 units.

Table 4.31: Regression Analysis for Diversification to non-coffee business

Performance	**Coef.**	**Std.Err**	**z**	**P>|z|**
Revenue from diversification	3.4	0.00114	2.03	0.006
_cons	56.10	2355.97	2.38	0.017

The resultant regression equation is as follows;

$Y = 56.10 + 3.4\ X_3$……4.3

Where

Y is Performance of the coffee cooperative society

X3 is the Diversification to non-coffee business

4.8.3.1 Hypothesis testing for diversification to non-coffee business

The hypothesis was tested by using F-test values in Table 4.30, above. The acceptance/rejection criteria was that, if the F calculated is greater than F critical, the Ho1 is rejected but if it's less than f critical, the Ho1 fails to be rejected.

The null hypothesis was that there is no significant relationship between quality of coffee and performance of coffee cooperative societies. Results in Table 4.30 above show that the f calculated was 8.19 which was greater than the f critical which was 3.94. This indicated that the null hypothesis was rejected hence there is a significant relationship between diversification to non-coffee business and performance of coffee cooperative societies. These findings agreed with that of Culas and Mahendrajah (2005) who argued that performance of a coffee factory is highly affected by the level of diversification to other businesses.

4.8.4 Regression Analysis for level of Integration along the Value Chain

The results between level of Integration along the Coffee Value Chain and performance of coffee cooperative societies were presented in the Table 4.32 below. The results presented in the fitness model were used in the regression to explain the study phenomena. Level of Integration along the Coffee Value Chain was found to be satisfactory variable in performance of coffee cooperative society. This is supported by coefficient of determination also known as the R square of 0.098. This means that level of Integration along the Coffee Value Chain explain 9.8% of the variations in the dependent variable which is performance of coffee cooperative society. This results further means that the model applied to link the relationship of the variables was satisfactory.

Table 4.32: Model Fitness for level of Integration along the Coffee Value Chain

Indicator	Coefficient
R	0.303
R Square	0.098

Table 4.33 provides the results on the analysis of the variance (ANOVA). The results indicate that the level of Integration along the Coffee Value Chain is not good predictor of performance of the coffee cooperative society. This was supported by an F statistic of 3.54 that is lower than the critical value. This was further supported by the reported p value (0.44) which was higher than the conventional probability of 0.05 significance level.

Table 4.33: Analysis of Variance

	F	Sig.
Regression	3.54	0.44

The results in Table 4.34 showed that income from integration activities had a positive and insignificant relationship with performance (r=0.159, p=0.484). This implies that increase in income from integration activities in the coffee factories by 1 unit would lead to an increase in performance by 0.159 units.

Table 4.34: Regression Analysis for level of Integration

Performance	Coef.	Std.Err	z	P>|z|
Income from integration activities	0.159	0.02279	0.7	0.484
_cons	6199.5	2529.09	1.45	0.114

The resultant regression equation is as follows;

$Y = 6199.5 + 0.159\ X_4$……4.4

Where

Y is Performance of the coffee cooperative society

X4 is the Integration along the Coffee Value Chain

4.8.4.1 Hypothesis testing for level of integration along the coffee value chain

The hypothesis was tested by using F-test results in Table 4.33, above. The acceptance/rejection criteria was that, if the F calculated is greater than F critical 0.05, the H_{01} is not rejected but if it's less than f critical, the H_{01} fails to be accepted.

The null hypothesis was that there is no significant relationship between level of integration along the coffee value chain and performance of coffee cooperative societies. Results in Table 4.33 above show that the f calculated was 3.54 which was less than the f critical which was 3.94. This indicated that the null hypothesis was rejected hence there is a no significant relationship between level of integration along the coffee value chain and performance of coffee cooperative societies.

4.8.5 Regression Analysis for Entry into Nontraditional Markets

The results of entry into non-traditional markets and performance of coffee cooperative societies are presented in the Table 4.35 below. The results presented in the fitness model

were used in the regression model to explain the study phenomena. Entry into Nontraditional Markets was found to be satisfactory variable in performance of coffee cooperative society. This is supported by coefficient of determination (R square) of 0.2007. This means that entry into non-traditional markets could explain 20.07% of the variations in the dependent variable which is performance of coffee cooperative society. This results further means that the model applied to link the relationship of the variables was satisfactory.

Table 4.35: Model Fitness for Entry into Nontraditional Markets

Indicator	Coefficient
R	0.448
R Square	0.2007

Table 4.36 provides the results on the analysis of the variance (ANOVA). The results indicate that the overall model was statistically significant. Entry into non-traditional markets is therefore a good predictor of performance of coffee cooperative society. This was supported by an F statistic of 9.89 and the reported p value (0.003) which was less than the conventional probability of 0.05 significance level.

Table 4.36: Analysis of Variance

	F	Sig.
Regression	9.89	0.003

The results in Table 4.37 showed that income from nontraditional market had a positive and significant relationship with performance (r=0.36, p=0.007). This implies that increase in income from non-traditional market by 1 unit would lead improvement in performance of the coffee cooperative society by 0.36 units.

Table 4.37: Regression Analysis for Entry into Nontraditional Markets

Performance	**Coef.**	**Std.Err**	**z**	**P>|z|**
Income from nontraditional market	0.36	0.0068	2.53	0.007
_cons	5841.14	3692.68	1.58	0.114

The resultant regression equation is;

$Y = 5841.14 + 0.36\ X_5$…….4.5

Where

Y is Performance of the coffee cooperative society

X5 is the entry into non-traditional markets

4.8.5.1 Hypothesis testing for entry into nontraditional market

The hypothesis was tested by using F-test results in Table 4.36, above. The acceptance/rejection criteria was that, if the F calculated is greater than F critical, the Ho1 is rejected but if it's less than f critical, the Ho1 fails to be rejected.

The null hypothesis was that there is no significant relationship between entry into nontraditional market and performance of coffee cooperative societies. Results in Table 4.36

above show that the f calculated was 9.89 which was greater than the f critical which was 3.94. This indicated that the null hypothesis was rejected hence there is a significant relationship between entry into non-traditional market and performance of coffee cooperative societies. These findings agreed with that of Mahmoud and Hanafi (2013) who argued that entrepreneurial orientation affects the business performance of women enterprises in Malaysia.

4.8.6 Overall Regression Model

The results of relationship between level of coffee production, quality of coffee, diversification to non-coffee business, integration along the coffee value chain and entry into non-traditional markets and performance of coffee cooperative societies are presented in the Table 4.38 below. The results presented in the fitness of the model were used in the regression model to explain the study phenomena. Level of coffee production, quality of coffee, diversification to non-coffee business, integration along the coffee value chain and entry into non-traditional markets were found to be satisfactory variables in performance of coffee cooperative society. This is supported by coefficient of determination also known as the R square of 0.4529. This means that level of coffee production, quality of coffee, diversification to non-coffee business, integration along the coffee value chain and entry into non-traditional markets explain 45.29% of the variation in the performance of coffee cooperative society. This results further mean that the model applied to link the relationship of the variables was satisfactory.

Table 4.38: Model Fitness for overall regression model

Indicator	Coefficient
R	0.673
R Square	0.4529

Table 4.39 provides the results on the analysis of the variance (ANOVA). The results indicate that the overall model was statistically significant. Further, the results imply that the level of coffee production, quality of coffee, diversification to non-coffee business, integration along the coffee value chain and entry into non-traditional markets are good predictors of performance of coffee cooperative society. This was supported by an F statistic 33.97and the reported p value (0.031) which was less than the conventional probability of 0.05 significance level.

Table 4.39: Analysis of Variance

	F	Sig.
Regression	33.97	0.031

The results in Table 4.40 showed that level of coffee production had a positive and significant relationship with performance (r=17.42, p=0.006). This implies that increase in level of coffee production by 1 unit would increase the level of performance of the coffee cooperative society by 17.42 units. These findings agreed with that of Hossein Azadi et al. (2010) who argued that quantity of the cooperative product affects the performance of the cooperative society. Quality of coffee had a positive and significant relationship with performance (r=14.667, p=0.001).

This implies that increase in quality of coffee by 1 unit would increase the level of performance of the coffee cooperative society by 14.67 units. These findings agreed with that of Koskei (2015) who argued that Coffee quality determines the performance of the factory.

Diversification to non-coffee business had a positive and significant relationship with performance (r=0.00013, p=0.007). This implies that increase of income from diversification to non-coffee by 1 unit would increase the level of performance of the coffee cooperative society by 0.00013 units. These findings agreed with that of Culas and Mahendrajah (2005) who argued that performance of a coffee factory is affected by the level of diversification to other business. The level of integration along coffee value chain had a positive and insignificant relationship with performance (r=0.01753, p=0.458). This implies that increase in level of integration along coffee value chain by 1 unit would increase the level of performance of the coffee cooperative society by 0.01753 units. These findings agreed with that of Roder (2007) who found that extent of vertical integration is positively correlated with firm's performance. Entry into nontraditional markets has a positive and significant relationship with performance (r=0.00392, p=0.003). This implies that increase in entry into nontraditional market by 1 unit would increase the level of performance of the coffee cooperative society by 0.00392 units. These findings agreed with that of Wade (2013) who found that that entry of firms into non-traditional market affects their performance.

Table 4.40: Overall Regression Model before mediation

Performance	Coef.	Std.Err	z	P>|z|
Level of coffee production	17.42	32.3	2.13	0.006
Quality of Coffee	14.667	65.7069	2.75	0.001
Diversification	0.00013	0.00114	3.12	0.007
Integration Activities	0.01753	0.02362	0.74	0.458
Entry into non-traditional market	0.00392	0.00679	2.58	0.003
_cons	132.10	4891.98	2.8	0.005

The resultant regression equation is;

$Y = 132.10 + 17.42\ X_1 + 14.6\ X_2 + 0.00392X_4 + 0.00013X_5$……4.6

Where

Y is Performance of the coffee cooperative society

X1 is the Level of Coffee Production

X2 is the Quality of Coffee

X4 is the entry into nontraditional market

X5 is the diversification to non-coffee business

4.9 Mediating effect of Entrepreneurial orientation

The Baron and Kenny approach on testing for mediation was employed for the purpose of testing this hypothesis. For mediation to be confirmed, four conditions should be fulfilled:

1. The independent variable is significantly related to the dependent variable in the absence of the mediating variable.

2. The independent variable is significantly related to the mediator variable.

3. The mediator variable is significantly related to the dependent variable.

4. When controlling for the effect of the mediating variable on the dependent variable, the effect of the independent variable on the dependent variable is not significant in the presence of the mediating variable.

The outcome of the regression analyses yielded results that are presented in Table 4.33, 34, 35 and 36.

Step One: The influence of firm level factors and performance

The results in Table 4.41 show that the effect of firm level factors on performance is significant ($\beta = 0.56$, $p < 0.05$) implying that 1 unit change in firm level factors is responsible for 0.56 units change in performance. The first mediation condition which states that the independent variable should be significantly related to the dependent variable in the absence of the mediating variable is thus satisfied.

Table 4.41: Regression Analysis for firm level factors and performance

	B	**Std. Error**	**t**	**Sig.**
(Constant)	1.084	0.298	0.628	0.531
firm level factors	0.56	0.089	3.633	0.000

Step Two: The relationship between firm level factors and entrepreneurial orientation

The second step as presented in Table 4.42 indicates that the influence of firm level factors on entrepreneurial orientation is significant ($\beta=1.45$, $p<0.05$) thus satisfying the second condition which states that the independent variable should be significantly related to the mediator variable.

Table 4.42: Regression for firm level factors and Entrepreneurial Orientation

	B	**Std. Error**	**t**	**Sig.**
(Constant)	-2.101	0.271	-7.744	0
Firm level factors	1.45	0.081	17.916	0.000

Step Three: The influence of entrepreneurial orientation and performance

The third step as presented in Table 4.43 revealed that the influence of entrepreneurial orientation and performance was significant ($\beta=0.075$, $p<0.05$) thus satisfying the third condition which states that the mediator variable should be significantly related to the dependent variable.

Table 4.43: Regression Analysis for Entrepreneurial Orientation and Performance

	B	**Std. Error**	**t**	**Sig.**
(Constant)	1.066	0.134	1.641	0.102
Entrepreneurial Orientation	0.075	0.046	7.7979	0.000

Step Four: The influence of firm level factors, entrepreneurial orientation and performance

The fourth step as presented in Table 4.44 revealed that the influence of the independent variables (firm level factors) on the dependent variable (performance) was insignificant in the presence of the mediating variable, entrepreneurial orientation ($r=0.110$, $p>0.05$) and thus satisfying the fourth condition which states that the effect of the independent variable on the dependent variable should be insignificant in the presence of the mediating variable.

Table 4.44: Regression for firm level factors and Entrepreneurial Orientation

	B	**Std. Error**	**t**	**Sig.**
(Constant)	1.341	0.331	4.053	0.000
firm level factors	-0.122	0.134	2.907	0.110
Entrepreneurial orientation		0.069	1.965	0.009

The mediation test thus satisfied all the four conditions that should be met for a mediation relationship to be confirmed and therefore it can be concluded that entrepreneurial orientation mediate the influence of firm level factors on performance. Hence the hypothesis that entrepreneurial orientation does not affect the relationship between firm level factors and performance was rejected.

4.10 Overall Regression Model after Mediation

The results of the relationship between level of coffee production, quality of coffee, diversification to non-coffee business, integration along the coffee value chain, entry into non-

traditional markets, entrepreneurial orientation and performance of coffee cooperative societies are presented in the Table 4.45 below.

The results presented in the fitness of the model in Table 4.45 were used in the regression model to explain the study phenomena. Level of coffee production, quality of coffee, diversification to non-coffee business, entry into non-traditional markets and entrepreneurial orientation were found to be satisfactory variables in performance of coffee cooperative society. This is supported by coefficient of determination also known as the R square of 0.606. This means that level of coffee production, quality of coffee, diversification to non-coffee businesses, entry into non-traditional markets and entrepreneurial orientation explain 60.6 % of the variations in the dependent variable which is performance of coffee cooperative societies. This results further mean that the model applied to link the relationship of the variables was satisfactory. The results further show that the R squared improved from 45.29 % before mediation to 60.6% after mediation.

Table 4.45: Model Fitness for Firm level

Indicator	Coefficient
R	0.779
R Square	0.606

Table 4.46 provides the results on the analysis of the variance (ANOVA). The results indicate that the overall model was statistically significant. Further, the results imply that the level of coffee production, quality of coffee, diversification to non-coffee business, entry into non-traditional markets and entrepreneurial orientation are good predictors of performance of

coffee cooperative society. This was supported by an F statistic 55.45 and the reported p value (0.031) which was less than the conventional probability of 0.05 significance level. The results further show that the F statistic improved from 33.96 before mediation to 55.45 after mediation.

Table 4.46: Analysis of Variance

	F	Sig.
Regression	55.45	0.000

Overall Regression model after mediation

The results in Table 4.47 showed that level of coffee production had a positive and significant relationship with performance (r=2.62, p=0.016). This implies that increase in level of coffee production by 1 unit would increase the level of performance of the coffee cooperative society by 2.62 units. These findings agreed with that of Hossein Azadi et al. (2010) who argued that quantity of the cooperative product affects the performance of the cooperative society. The coffee cooperatives must, therefore, apply all strategies to increase the production of coffee so as to improve the performance. Production increase would mean that the cooperative society has more product to sell and therefore earn more. From Table 4.47 above production level has the highest coefficient of all the independent variables and therefore this is the area where cooperatives need to invest most of their resources in. The results further revealed that quality of coffee had a positive and significant relationship with performance (r=1.04, p=0.002). This implies that increase in quality of coffee by 1 unit would increase the level of performance of

the coffee cooperative society by 1.04 units. These findings agreed with that of Koskei (2015) who argued that Coffee quality determines the performance of the factory. Most of the strategies and activities that lead to increase in coffee production also leads to coffee quality improvement. Activities like fertilizer application, diseases control, pests control, planting drought resistant cultivars would end up increasing quantity of coffee produced as well as improve the coffee quality. The results further revealed that diversification to non-coffee business had a positive and significant relationship with performance (r=0.98, p=0.03). These findings agreed with that of Culas and Mahendrajah (2005) who argued that performance of a coffee factory is highly affected by the level of diversification to other business. This implies that increase in diversification to non-coffee by 1 unit would increase the level of performance of the coffee cooperative society by 0.98 units. Diversification in coffee sector and in agriculture in general is highly recommended since the sector is seriously affected by weather and therefore the coffee cooperatives would need alternative income sources when the weather conditions do not favour them.

The results further revealed that level of integration along coffee value chain had a positive and insignificant relationship with performance (r=1.01, p=0.135). This implies increase in the level of integration along coffee value chain by 1 unit would improve the performance by 1.01 units. These findings agreed with that of Roder (2007) who found that extent of vertical integration is positively correlated with firm's performance. The results further showed that entry into nontraditional market had a positive and significant relationship with performance (r=0.032, p=0.001). This implies that increase in entry into non-traditional market by 1 unit would increase the level of performance of the coffee cooperative society by 0.032 units.

These findings agreed with that of Wade (2013) who found that that entry of firms into non-traditional market affects their performance. The non-traditional coffee markets are getting popular in the sector. Cooperatives that take advantage of these markets are leaping big. Care must be taken before cooperatives sign contracts with the coffee buyers to ensure they don't lose. Coffee Directorate has put in measures to cushion cooperatives from predatory buyers by requiring that a coffee marketing agent and the Coffee Directorate itself be part of any agreement in the alternative markets deals. The results further showed that entrepreneurial orientation had a positive and significant relationship with performance ($r=0.59$, $p=0.006$). This implies that increase in entrepreneurial orientation by 1 unit would increase the level of performance of the coffee cooperative society by 0.59 units. These findings agreed with that of Mahmoud and Hanafi (2013) who argued that entrepreneurial orientation affects the business performance of women enterprises in Malaysia. The cooperatives management need to be proactive because by being forward looking they will be engaging in progressive activities before much competition arise. It is also important for them to take calculated risks through activities like new products and services, new markets and other ways. Risk averse are also opportunity 'missers'. The risk taking also goes hand in hand with being innovative since innovations come with uncertainties which increase risks. The cooperatives also need to give their officials leeway to draw strategies and make important decisions that benefit the cooperatives without much interference and policing. Any good business definitely attracts player who bring in competition. Competition is good as it improves service quality. The cooperatives need to have competitive aggressiveness so as to remain not only relevant but be

market leaders in the industry. This is how the coffee cooperatives would ensure that their performance is high for the benefit of all the members.

Table 4.47: Overall Regression Model after Mediation

Performance	**Coef.**	**Std.Err**	**z**	**P>|z|**
Level of coffee production	2.62	0.00375	3.23	0.016
Quality of Coffee	1.04	70.7587	4.22	0.002
Diversification	0.98	0.00133	2.89	0.03
Integration Activities	1.01	0.04089	0.19	0.135
Entry into non-traditional market	0.032	0.00939	3.29	0.001
Entrepreneurial Orientation	0.59	30.8773	4.21	0.006
_cons	8.20	87.973	2.9	0.003

Optimal Model

$$Y = 8.20 + 2.62\,X1 + 1.04\,X2 + 0.98\,X3 + 0.032X4 + 0.59X5 \quad \ldots\ldots 4.7$$

Where

Y is Performance of the coffee cooperative society

X1 is the Level of Coffee Production

X2 is the Quality of Coffee

X3 is the diversification to non-coffee business

X4 is the entry into nontraditional market

X5 is the Entrepreneurial Orientation

4.11 Model Optimization

Based on the results in Table 4.48 a model optimization was formulated. The aim of model optimization was to guide in derivation of the final model (revised conceptual framework) where only the significant variables are included for objectivity. Results in Table 4.48 were arrived at through running multiple regression. One variable (level of integration along the coffee value chain) was dropped since it was insignificant. This is detailed in the revised conceptual framework as presented in Figure 4.26.

Table 4.48: Summary of Hypothesis

Hypothesis	Rule	F-Calculated	Comment
Ho: There is no significant effect of level of coffee produced and performance of coffee cooperative societies in Kenya	Reject Ho if f calculated is greater than f critical	12.45	The null hypothesis was rejected; therefore there is a significant relationship between level of coffee produced and performance of coffee cooperative societies in Kenya
Ho: There is no significant effect of quality of coffee and performance of coffee cooperative societies in Kenya	Reject Ho if f calculated is greater than f critical	13.09	The null hypothesis was rejected; therefore there is a significant effect between quality of coffee and performance of coffee cooperative societies in Kenya
Ho: There is no significant diversification and performance of coffee cooperative societies in Kenya	Reject Ho if f calculated is greater than f critical	8.19	The null hypothesis was rejected; therefore, there is a significant relationship between diversification and performance of coffee cooperative societies in Kenya
Ho: There is no significant effect of level of integration and performance of coffee cooperative societies in Kenya	Reject Ho if f calculated is greater than f critical	3.54	The null hypothesis was not rejected; therefore there is significant effect between level of integration and performance of coffee cooperative societies in Kenya
Ho: There is no significant effect of entry into non-traditional market and performance of coffee cooperative societies in Kenya	Reject Ho if f calculated is greater than f critical	9.89	The null hypothesis was rejected; therefore there is significant effect entry into non-traditional market and performance of coffee cooperative societies in Kenya

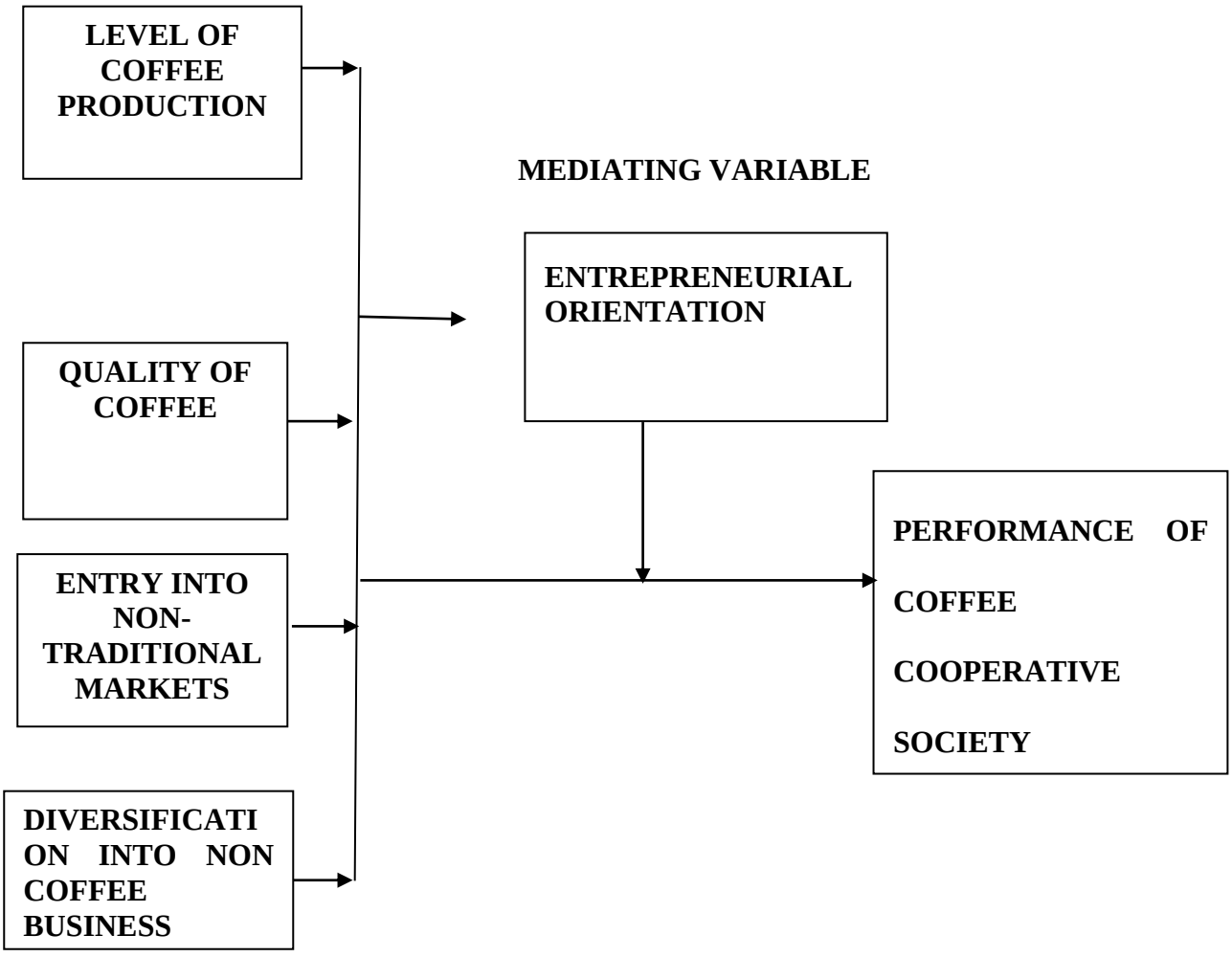

Figure 4.26: Revised Conceptual Framework

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a summary of the findings from the analysis, the conclusions and the recommendations. This was done in line with the objectives of the study. The coffee production level, quality of coffee, diversification to non-coffee businesses and entry into non-traditional markets all have positive and significant correlation with the performance of a coffee cooperative. Entrepreneurial orientation mediates the effect of these four factors and the performance of the coffee cooperative.

5.2 Summary of Findings

5.2.1 Level Coffee production and performance of coffee cooperative societies in Kenya

The level of coffee production has a positive and significant effect on performance of coffee cooperative societies in Kenya. This was supported by the statements in the questionnaire where majority of the respondents agreed with the statements on level of coffee production. The trend analysis results further revealed the biennial production of Arabica coffee. The hypothesis results revealed that level of coffee production had a significant effect on the performance of coffee cooperative societies in Kenya. The study found out that the factories especially in Kirinyaga which had high production had notably high earnings per kilogram of coffee. The notable high performers in terms of production were 10 factories associated with Baragwi farmers' cooperative society and Karithathi and Kabingara coffee factories. The

cooperatives need to support their farmers with coffee planting materials to increase the production of coffee. This was evident in Kikima cooperative society and Kabunyeria and Kapkuluben cooperatives in Nandi County. Provision of high yielding seedlings will increase the number of coffee producing trees in three years. The farmers also need to be given technical assistance in terms of training and also be provided with farm inputs of the highest quality – this will ensure that the production per tree improves from the current average of 2 kilograms per tree to over ten kilograms which is likely to improve the earnings by over ten times. In some cooperatives farmers receive farm input financing negotiated by their cooperatives which help them buy farm inputs and also ensure that the farmers do not loose coffee due to over ripening and cherry falling on the ground.

In Indonesia a cooperative that was only started 20 years ago has been able to come up with seedlings and input provision programme as well as farmers training programmes that has seen the cooperative grow to an annual production of 324, 000 metric tonnes of coffee from 500 members who farm coffee on 480 hectares. Kenya produces an average of 40 metric tonnes per year – this is produced by about 700, 000 members who farm on an estimated 160, 000 acres.

In Colombia the National Federation of Coffee Growers of promotes the production and exportation of Colombian coffee. It currently represents more than 500,000 producers, most of whom are small family owned farms. The federation supports research and development in the production of coffee through grants to local universities and through federation sponsored research institutes. The federation also monitors production to ensure export quality standards are met. In Brazil, the giant cooperative, Cooxupe, employs over many technical assistants

who work with the farmers on fulltime to ensure that the production is increased and quality enhanced.

Lack of labour is experienced in some areas where production is still good. Some farm activities will need to be mechanized and activities that require much labour done away with. Activities like weeding need to use chemicals instead of the traditional methods. The cooperatives can have gangs for hire who are well trained to carry out farm activities for the farmer and then their payment is deducted from the coffee proceeds at the cooperative level.

5.2.2 Quality of Coffee and performance of coffee cooperative societies in Kenya

The regression results revealed that quality of coffee had a positive and significant effect on performance of coffee cooperative societies in Kenya. This was further supported by the statements in the questionnaire where majority of the respondents agreed with the statements on effects of quality of coffee. The hypothesis results revealed that quality of coffee had a significant effect on the performance of coffee cooperative societies in Kenya. It was evident that some regions are favoured in that they produce high quality coffee in terms of both the class 1 to 5 and also a high percentage of primary grades. Factories associated with Gikanda cooperative, Baragwi cooperative, Thirikwa cooperative were found to have field committees which inspect the quality of the farms which impact positively on the quality of coffee produced. Cooperatives should also invest in training farmers and staff members to ensure quality is enhanced. All factors that are discussed in 5.2.1 above are also likely to also impact on the quality of the coffee positively. Some factories like those affiliated to Tekangu cooperative society were found to be enhancing quality by separating the coffee of different

qualities. Those farmers who were not tending their coffee well thereby producing low quality coffee had a day set aside when their coffee was received and processed. Such separated coffee was segregated until it is bagged and taken to the wet mill and eventually sold separately. Coffee is a commodity that is majorly taken by the European Union markets and the United States. These are markets that are known to be uncompromising where quality is involved. The cooperatives, hence have no alternative other than to ensure that they produce quality.

5.2.3 Diversification to non-coffee businesses and performance of coffee cooperative societies in Kenya

Diversification to non-coffee businesses has a positive and significant effect on performance of coffee cooperative societies in Kenya. This was further supported by the statements in the questionnaire where majority of the respondents agreed with the statements on the importance of diversification to non-coffee businesses**.** The hypothesis results revealed that diversification to non-coffee businesses had a significant effect on the performance of coffee cooperative societies in Kenya. Though some cooperatives are engaged in diversification from non-coffee business activities only Baragwi cooperative society is engaged in sizeable non-coffee business which makes its income to be high. The cooperative is engaged in real estate and also fuel retail business. The factories could still do well even if the coffee business would collapse. Kapkuluben factory in Kericho is also engaged in sugarcane farming which improves its performance.

The global coffee prices are majorly determined by factors that are beyond the control of a cooperative society. As such, for a cooperative to cushion itself from decline in prices of coffee there is need for them to be diversified. Diversification could be to other businesses or even engage in geographical diversification. Sometimes coffee fails in some Counties due to pests and diseases yet remain unaffected in their neighbouring counties, such scenarios call for geographical diversification.

The world's giant coffee cooperative Cooxupe of Brazil is known to have diversified geographically by acquiring 5 coffee cooperatives away from the region it operates from. In 2000 when the coffee prices were so low the Cooxupe cooperative got engaged in grain business which cushioned its members from low earnings. In Kenya the KTDA tea companies have diversified to insurance and microfinance businesses which has made it competitive compared to the private tea estates. Diversification is one of the areas where the Kenyan cooperatives were realized to be so lacking thus leaving them exposed. If coffee prices would decline sharply and remain low for a long period of time almost all coffee cooperatives would shut. The cooperatives need to get engaged in diversification especially into non-agricultural activities.

5.2.4 Level of integration along the coffee value chain and performance of coffee cooperative societies in Kenya

The regression results revealed that level of integration along the coffee value chain had a positive and insignificant effect on the performance of coffee cooperative societies in Kenya. The hypothesis results revealed that level of integration along the coffee value chain had no

significant effect on the performance of coffee cooperative societies in Kenya. The factories that have integrated backwards were found to have some small coffee demo farms whose contribution to income to the factory is negligible. Most of the factories had around 100 coffee trees. Three coffee cooperatives were found to have invested in coffee mills – a form of forward integration- but even some of their own factories were delivering to opponents' mills. An example is Kipkelion coffee mill owned by Kericho county cooperatives yet a good number of the factories were delivering their parchment to Neumann Kaffee Gruppe Mill in Ruiru. The other form of integration was found in Gikanda Cooperative where they roast coffee. The sales from the roasted and packaged coffee was found to be extremely low due the history of Kenya being a non/low coffee consumption country.

The coffee cooperatives could perhaps learn from the tea factory companies that are affiliated to the Kenya Tea Development Agency who are completely integrated and hence the high earnings in the companies. Currently the small scale farmers own their own individual farms, they jointly own the processing factories, a packaging factory, tea warehouses in Mombasa, a tea buying company in Mombasa and a tea importing company in the middle east.

5.2.5 Entry into non-traditional markets and performance of coffee cooperative societies in Kenya

The regression results revealed that entry into non-traditional markets had a positive and significant effect on performance of coffee cooperative societies in Kenya. This was further supported by the statements in the questionnaire where majority of the respondents agreed with the statements on entry into non-traditional markets. The hypothesis results revealed that

entry into non-traditional markets had a significant effect on the performance of coffee cooperative societies in Kenya.

Most of the coffee factories had gotten into non-traditional markets but only recently. The factory management were all in agreement that direct sales markets made the factories to earn more as compared with the traditional auction market. Another emerging non-traditional market was the certified coffee market. The most popular certified market seemed to be the fair-trade. The farmers earned premiums and also the certification made them to adopt superior farming and processing methods thus making them earn more. Kenya coffee cooperatives may not have benefitted much compared with other countries which have embraced the non-traditional markets more. A country like Tanzania and Uganda sell a higher percentage through the non-traditional markets. The Brazilian Cooxupe sell about 40% into specialty markets.

5.2.6 Entrepreneurial orientation on the relationship between key firm factors and the performance of coffee cooperative societies in Kenya

The sixth objective was to examine the mediating role of entrepreneurial orientation on the relationship between key firm factors and the performance of coffee cooperative societies in Kenya. The regression results revealed that firm level factors had a positive and significant relationship with entrepreneurial orientation. Entrepreneurial orientation had a positive and significant effect on performance of coffee cooperative societies in Kenya. However, the results revealed that the influence of the firm level factors on performance was insignificant in the presence of the mediating variable, entrepreneurial orientation. The hypothesis results

revealed that entrepreneurial orientation affect the relationship between firm level factors and performance.

Some factories were found to be performing better than others due to application of one or more dimensions of the entrepreneurial orientation. Cooperatives affiliated to Kipkelion Union and Othaya Farmers had taken a proactive and a risky step of committing members' finances by constructing coffee mills. Most factories were found to be risk averse and could not dare take crop advances from commercial institutions like banks or the Commodities Development Fund. Others took up huge financing from the institutions to finance farm inputs which made them produce high quality coffee volumes thus performing better. Some factories like Tekangu had devised innovative ways of segregating and processing coffee from non-compliant farmers separately. This improved the quality of the coffee produced hence improving their performance. Another innovative practice was the use of water to grade the coffee cherry before its acceptance at the wet processing factories.

Coffee factories need to embrace proactiveness, innovativeness, be risk takers and allow their management and staff some autonomy to help achieve higher performance. It was discovered that a good number of factories lacked autonomy and depended on annual general meetings to make operational decisions which led to delayed decision making and hence compromising effectiveness and efficiency in service delivery to the members.

5.3 Conclusions of the study

Based on the research findings the study concluded that level of coffee production, quality of coffee, diversification and entry into nontraditional markets had a positive and significant effect on performance of coffee cooperative societies in Kenya. However, level of integration along the coffee value chain had a positive and insignificant effect on performance of cooperative societies. Entrepreneurial orientation mediates the relationship between firm level factors and performance.

Production level is the most important factor in a coffee cooperatives society as it influences its performance most. This is evident from the beta value of 2.62 in the overall regression equation. This is followed by quality with a beta value of 1.04. Cooperatives with the tendency of behaving entrepreneurially will perform better than those who don't. Cooperatives need to engage in non-traditional markets like the direct markets or certified coffee markets. Diversification to non-coffee businesses makes a cooperative society perform better.

5.4 Recommendations of the study

The coffee cooperative societies should work hard so as to improve the quantity of coffee they produce as this will boost their performance. There is evident indication that the coffee production level is the strongest factor in the determination of performance of a coffee cooperative. The performance of a coffee cooperative and the production level have a strong correlation. There was also correlation beteen performance of a coffee cooperative and quality of coffee meaning cooperatives should endevour to improve the quality of coffee to boost the cooperative's performance.

It is important for the coffee cooperative societies to diversify. Diversification may be through internally generated expansion or through mergers and acquisitions. Firms diversify to maximize growth, create barriers for others not to enter and also due to the relatedness of the firms. Diversification will therefore help cooperative firms to boost their performance.

The study found that engagement in non-traditional markets improves financial performance of a firm. The correlation coefficient between the performance of a cooperative and engagement in non-traditional markets is quite high. The cooperatives should, therefore explore the certified coffee markets, domestic markets, direct markets to improve their performance. The entrepreneurial orientation of the cooperatives also has a strong mediating effect on the performance. The cooperatives should therefore be proactive, innovative, aggressive, of reasonable autonomy and be risk takers as orientation to these dimensions was found to improve a cooperatives performance.

5.5 Areas for Further Research

The study sought to establish firm level factors which influence the performance of coffee cooperative societies in Kenya. This study focused on coffee cooperative societies only. Other studies could consider other non- coffee cooperative societies for the purpose of making a comparison of the findings with those in this study.

In addition, the study was conducted in Kenya and thus other studies can focus on performance of coffee cooperative societies in other countries in Africa.

The study was carried out at the coffee factory level. The same could be done at household level. It is necessary for research to be done to probe the level of intergration that would cause a significant relationship beteen performance of a coffee cooperative and the level of intergration.

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APPENDICES

Appendix 1: Introduction Letter

Date: ……..

Dear Respondent,

RESEARCH DATA COLLECTION

I am a Doctor of Philosophy (PhD) candidate at Dedan Kimathi University of Technology. As part of the requirement for the award of the degree, I am expected to undertake a research study. I am seeking your participation in my study entitled "Firm level Factors influencing the performance of coffee cooperative societies in Kenya and the mediating role of entrepreneurial orientation".

The attached questionnaire will be used to gather relevant information to address the research objectives. Kindly respond to my questions and assist me get information from your institution.

Please note this is academic research and the information provided will be treated in strict confidence. Strict ethical principles will be observed to ensure confidentiality and the study outcomes and reports will not include reference to any individuals.

Your assistance is highly appreciated.

Yours faithfully,

Irungu Maina,

Doctoral Candidate, Dedan Kimathi University of Technology.

Appendix II: Questionnaire

This questionnaire is divided into seven sections that should take only a few moments of your time to complete. Please respond by ticking the appropriate box or filling in your answers in the blank spaces provided. This is an academic exercise and all information collected from respondents will be treated with a strict confidentiality.

Thank you very much for your cooperation

Section a: Demographic Information

1. Name of the Factory……Society……Date:……
2. Gender of respondent

Male ☐

Female ☐

3. How old are you? (Years)

Less than 30: ☐

31-40: ☐

41-50: ☐

Above 50: ☐

4. What is your marital status?

Single ☐

Divorced ☐

Separated ☐

Married ☐

5. What is your level of education?

Primary ☐

Secondary ☐

College ☐

University ☐

6. How long have you worked in this factory?

less than 1 year ☐

2 to 5 years ☐

6 to 10 years ☐

Above 10 years ☐

7. How old is your coffee factory?

1-5 years ☐

6--10 years ☐

11--15 years ☐

16 -20 years ☐

Over 20 years ☐

Section B: Level of Coffee Production on The Performance of Coffee Cooperative Societies in Kenya

8. a) In your opinion does level of coffee production affect the performance of coffee cooperative societies in Kenya.

Yes ( ) No ( )

b) If yes in question 8 (a) above, indicate to what extent does level of coffee production affect the performance of coffee cooperative societies in Kenya?

To a very great extent ( ) To a great extent ( ) Moderate Extent ( )

Low Extent ( ) No Extent ( )

9. How much coffee has your factory produced in the past 3 years?

Year	Kgs of cherry
2016/17	
2015/16	
2014/15	

10. How much buni has your factory produced in the past 3 years?

Year	Kgs
2016/17	
2015/16	
2014/15	

11. How much clean coffee has your factory produced in the past 3 years?

Year	Kgs
2016/17	

2015/16	
2014/15	

12.Using a scale of 1=Strongly Disagree to 5=Strongly Agree, rate the following statements: Instruction: please tick [√]

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
This factory is a high producer of coffee					
Many members participate actively in coffee production.					
The factory has incentives for members who produce a lot of cherry					
Our farmers do not have any limitation to produce lots of coffee					
Our management supports high production of coffee					

Section C: Quality of Coffee on The Performance of Coffee Cooperative Societies in Kenya

13.a)In your opinion does quality of coffee affect the performance of coffee cooperative societies in Kenya.

Yes ( ) No ( )

b) If yes in the question 13 (a) above, indicate to what extent does quality of coffee affect the performance of coffee cooperative societies in Kenya?

To a very great extent ( ) To a great extent ( ) Moderate Extent ( )

Low Extent ( ) No Extent ( )

14. Do you spend money specifically for quality improvement Yes ( ) No ( )

15. If yes how much

Year	Amount
2016/17	
2015/16	
2014/15	

16. What quantity (in Kgs) of coffee was in the following classes/categories?

Year	Class 1 and 3	Class 4 -5	Class 6 - 8	Class 9 - 10
2016/17				
2015/16				

2014/15				

17. What was the grades distribution for your coffee in kgs

Year	AA	AB	C	TT	PB	E	T
2016/17							
2015/16							
2014/15							
Year	UG1	UG2	UG3	UG4	HE	UG	OTHER
2016/17							
2015/16							
2014/15							

Explain this grades distribution performance;

18.Using a scale of 1=Strongly Disagree to 5=Strongly Agree, rate the following statements: Instruction: please tick [√] only one option on the scale of 1-5

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Our factory has invested heavily on training of farmers on production of quality coffee					
Our factory has invested heavily on training of workers on production of quality coffee					
The grade of coffee is affected by the changes in weather which affects performance our coffee factory					
There are regular self-inspection and quality audits excises in the					

factory					
Certification helps us produce higher quality coffee					
Lack of access to farm inputs leads to poor quality coffee					
Over-fermentation of coffee is a major problem in this factory					
Management is actively involved in quality improvement					
Malpractices at the milling compromises out quality					

Section D: Diversification to Non-Coffee Businesses on the Performance of Coffee Cooperative Societies in Kenya

19. a) In your opinion does diversification to non-coffee business affect the performance of coffee cooperative societies in Kenya.

Yes ( ) No ( )

b)If yes in the question 18 (a) above, indicate to what extent does diversification to non-coffee business affect the performance of coffee cooperative societies in Kenya?

To a very great extent ( ) To a great extent ( ) Moderate Extent ( )

Low Extent ( ) No Extent ( )

20. Which products have you introduced in the last 3 years?

Year	Products
2016/17	
2015/16	
2014/15	

21. Which products would you like to introduce?

22. What bars you from introducing the products?

23. Indicate the revenue from diversification

Year	Product	Revenue
2016/17		
2015/16		
2014/15		

24.Using a scale of 1=Strongly Disagree to 5=Strongly Agree, rate the following statements. Instruction: please tick [√]

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Diversification to non-coffee businesses would improve/has improved the performance of our factory					
The diversification strategies in the factory would help/has helped cope with competition					
Risk has been/would be minimal due to diversification					
Farmers have benefited/would benefit from diversification					
Others					

Section E: Level of Integration along The Coffee Value Chain on The Performance of Coffee Cooperative Societies in Kenya

25. a) In your opinion does level of integration along the coffee value chain affect the performance of coffee cooperative societies in Kenya.

Yes ( ) No ( )

b) If yes in the question 21(a) above, indicate to what extent does level of integration along the coffee value chain affect the performance of coffee cooperative societies in Kenya?

To a very great extent ( ) To a great extent ( ) Moderate Extent ( )

Low Extent ( ) No Extent ( )

26. State the revenue realized as a result of the following in 2016/2017;

Source	Cash (KShs)
Coffee farming activities	
Coffee milling activities	
Coffee trading	
Coffee roasting and packaging	
Others	
Total	

27. Income from Integration activities

Year	Integration activity	Income
2016/17		
2015/16		
2014/15		

Explain:

28.Using a scale of 1=Strongly Disagree to 5=Strongly Agree, rate the following statements. Instruction: please tick [√] only one option on the scale of 1-5

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Engaging in farming activities would improve the performance of the factory					
Engaging in coffee milling would improve performance of the factory					
Engaging in coffee roasting and packaging would improve performance of the e factory					
Engaging in farm inputs supply would improve performance of the factory					
Engaging in marketing activities would improve performance of the					

factory					
Others integration businesses					

Section F: Entry into Non-Traditional Markets on The Performance of Coffee Cooperative Societies in Kenya

29. a) In your opinion does entry into non-traditional markets affect the performance of coffee cooperative societies in Kenya.

Yes ( ) No ( )

b) If yes in the question 27(a) above, indicate to what extent does entry into non-traditional markets affect the performance of coffee cooperative societies in Kenya?

To a very great extent () To a great extent ( ) Moderate Extent ( )

Low Extent ( ) No Extent ( )

30. Which new markets have you entered in the last 3 years?

Year	Markets e.g. direct sale, Fair-trade etc.
2016	
2015	
2014	

Explain:

31. What quantity of coffee have you sold in non-traditional coffee markets in the last 3 years?

Year	Quantity (kgs)
2016/17	
2015/16	
2014/15	

Specify the markets

Year	Income from non-traditional markets			
	Auction	Certified (Specify per label)	Direct	Others (specify)
2016				
2015				
2014				

32.On a scale of l=Strongly Disagree to 5=Strongly agree" rate the following statements: Instruction: please tick [√]

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Marketing of coffee needs to be improved					
There has been increase in new markets					
Lack of information leads to lack of alternative markets					
Over-regulation bars us from getting into non-auction coffee markets					
Specify any other factor					

Section G: Role of entrepreneurial orientation on the performance of coffee cooperative societies in Kenya

33. a) In your opinion, does entrepreneurial orientation affect the performance of coffee cooperative societies in Kenya.

Yes () No ()

b) If Yes in the question above; to what extent does entrepreneurial orientation affect the performance of coffee cooperative societies in Kenya

Very Great extent () Great Extent () Moderate Extent ()

Low Extent () No effect ()

34.On a scale of 1=Strongly Disagree to 5=Strongly agree" rate the following statements: Instruction: please tick [√]

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	1	2	3	4	5
My factory is proactive in business practices					
My factory anticipates changes in the industry before they occur					
My factory encourages use of latest coffee production methods and processes					
My factory is the market leader in the introduction of new					

products/services/technology/process					
My factory has a unit/person for monitoring opportunities in the market					
This factory has the best machinery/technology in the area					
Our factory management are good in risk taking					
My factory commits large resources on new projects with uncertain outcome					
My factory takes loans for projects					
My factory takes business risks					
My factory does not shy away from funding new methods and processes even if they have not been tested in the market and could be risky					
My factory has introduced new products in the last 3 years					
My factory management is creative businesswise					

My factory has a research and development section					
My factory has adequate resources for R & D					
My factory is able to convert ideas into products and processes					
My factory is able to convert ideas into wealth					
My factory supports employees ideas/creativity and innovativeness					
There is stiff competition in the business					
Our factory is able to outshine our competitors					
Our factory is the best in the area					
Our factory makes independent decisions in the industry					
There is no interference in the business					
Our teams have independence in the job					

Individuals have independence in the job					

35. On a scale of 1 – 100% how do you rate your factory's level of;

Year	Pro-activeness	Innovativeness	Risk taking	Autonomy	Competitive aggressiveness
2016/17					
2015/16					
2014/15					

Section H: Performance of Coffee Cooperative Societies in Kenya

36. Kindly indicate the number of members in your factory?

Year	No. of Members	Active members
2016/17		
2015/16		

2014/15		

Explain

37.Kindly indicate the amount the factory have used on community projects in the last 3 years?

Year	Amount
2016/17	
2015/16	
2014/15	

Explain

38.How much financing did you get from banks and other financial sources?

Year	Amount
2016/17	
2015/16	

2014/15	

Explain

39. How much income did you get from all factory businesses in the last 3 years?

YEAR	2014/15	2015/16	2016/17
Income to the factory			
KShs per kilo of clean coffee to the factory			
Rate paid to the grower in KShs per kilo of cherry			
Rate paid to grower in KShs per kilo of buni			

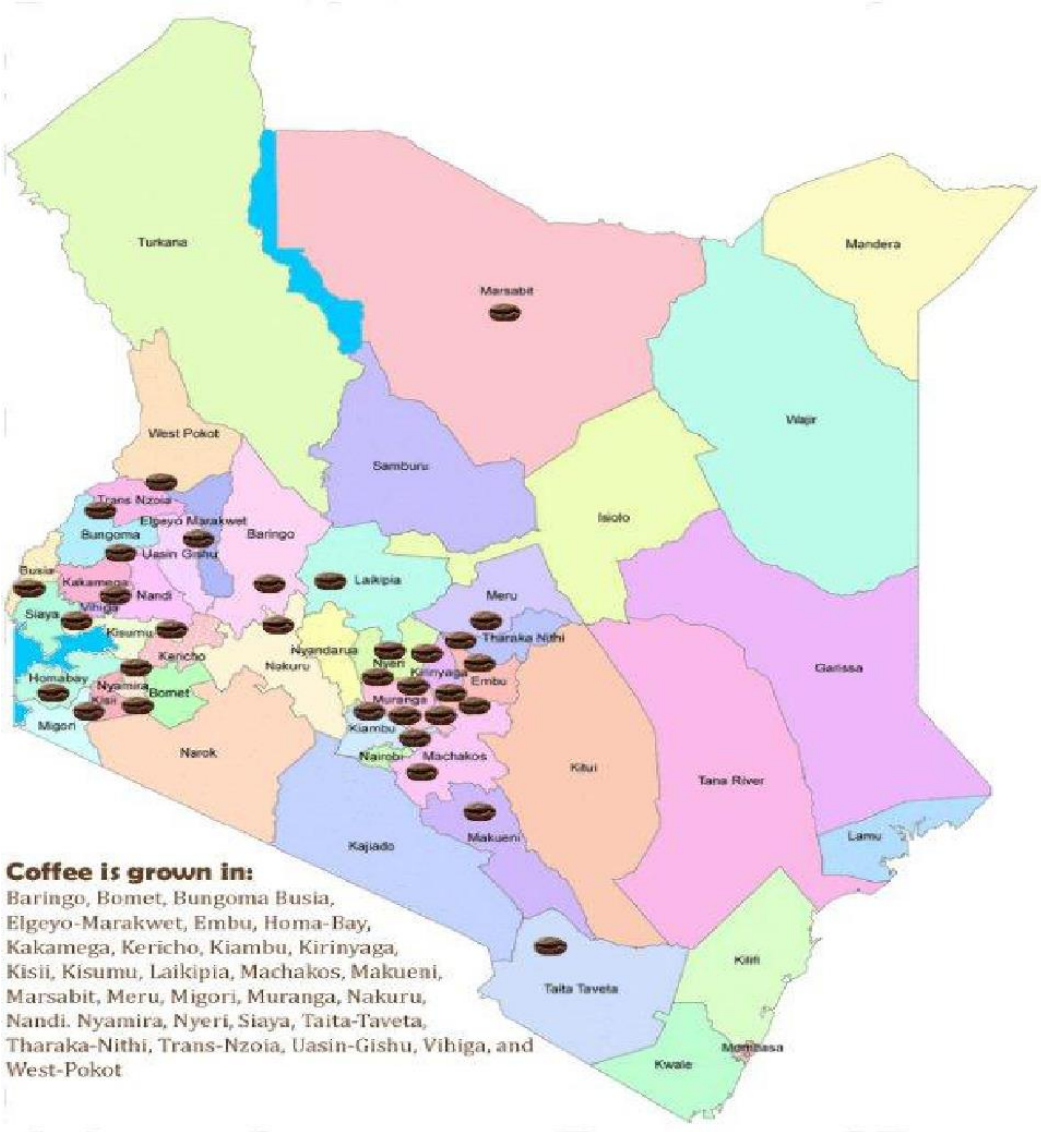
Appendix III: Kenya Coffee Regions and their Factories

S/No.	SUB-REGION	COFFEE DIRECTORATE CODE	FACTORIES
1	KIAMBU	XAA	103
2	MURANGA	XAB	136
3	NYERI	XAC	101
4	KIRINYAGA	XAD	91
5	EMBU	XBD	81
6	MERU	XBA	126
7	THARAKA	XBC	74
8	MACHAKOS/MAKUENI	XBE	64
9	TAITA TAVETA	XGA	6
10	NAKURU	XCA	8
11	BARINGO	XCD	19

12	TRANSZOIA/KEIYO/MARAKWET	XCI	41
13	BUNGOMA	XDA	45
14	KAKAMEGA	XDB	15
15	MIGORI/HOMABAY	XEB	14
16	KISII/NYAMIRA	XEA	63
17	KERICHO	XCE	43
18	NANDI HILLS	XCF	22
	TOTAL		1052

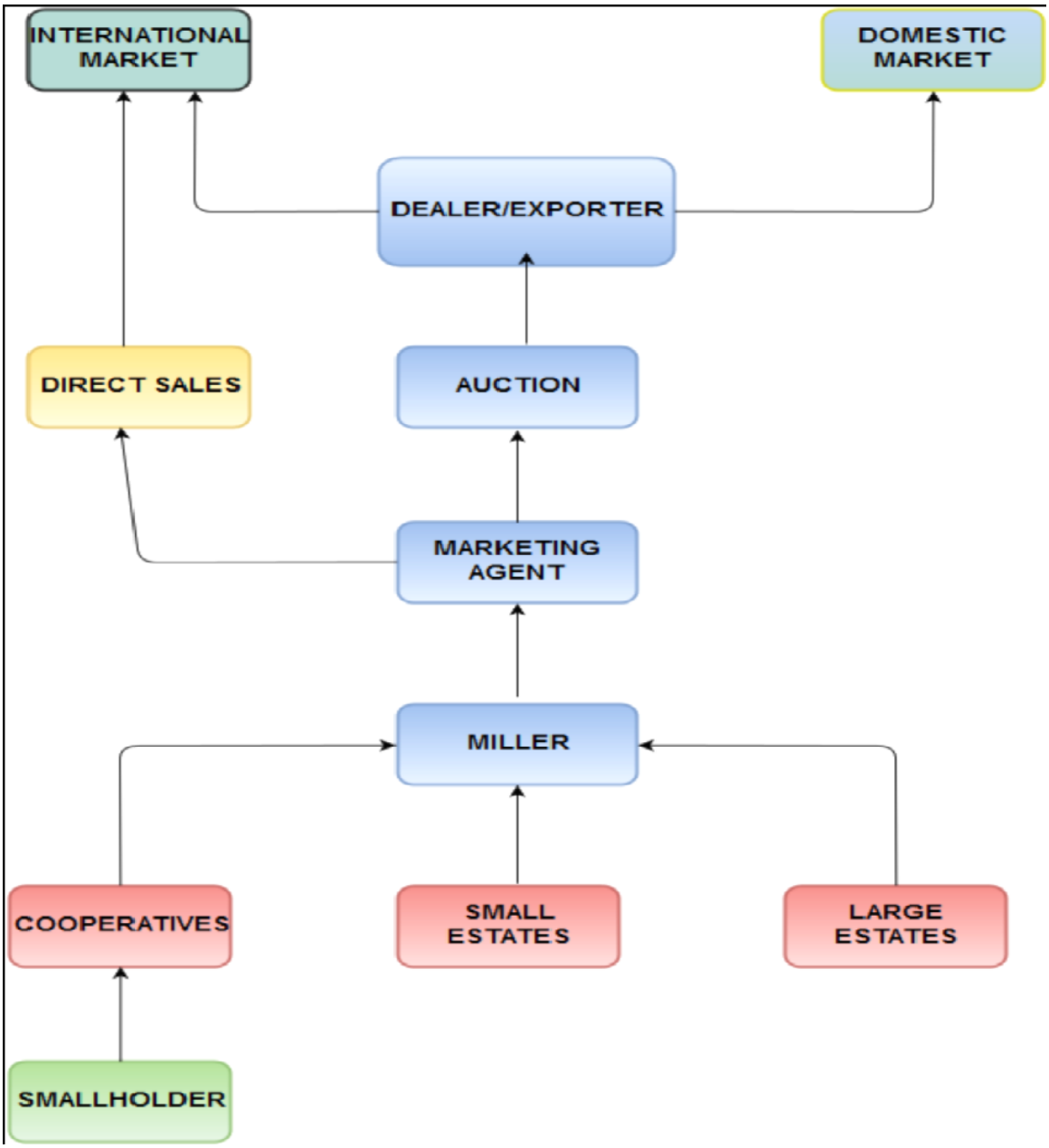
Source: Coffee Directorate (2016)

Appendix IV: Coffee Growing Map



Source: Google www.google.co.ke Kenya + coffee + map

Appendix V: Kenya Coffee Value Chain



Source: Nyoro and Karanja (2002).

Apendix VI: Coffee Export Quotas

EXPORTER	QUOTA[1]
Brazil	18,000,000
Columbia	6,011,280
Costarica	950,000
Cuba	200,000
Dominican republic	425,000
Ecuador	552,000
El Savador	1,429,500
Guatemala	1,344,500
Haiti	420,000
Mexico	1,509,000
Nicaragua	419,000
Panama	26,000
Peru	580,000
Venezuela	475,000
Cameroon	762,795
Central African Republic	150,000
Congo (Brazaville)	11,000
Benin	37,224
Gabon	18,000
Ivory Coast	2,324,278
Malagasy republic	828,828
Togo	170,000
Kenya	516,835
Uganda	1,887,737
Tanzania	435,458
Portugal	2,188,737
Congo	700,000
Ethiopia	850,000
India	360,000
Indonesia	1,176,000
Nigeria	18,000
Rwanda and Burundi	18,000
Sierra Leone	65,000
Trinidad	44,000
Yemen	77,000
TOTAL	**45,587,172**

Source:ICO (2010)

[1]*Basic Export Quotas (60-kilogram Bags, 1962-65)*