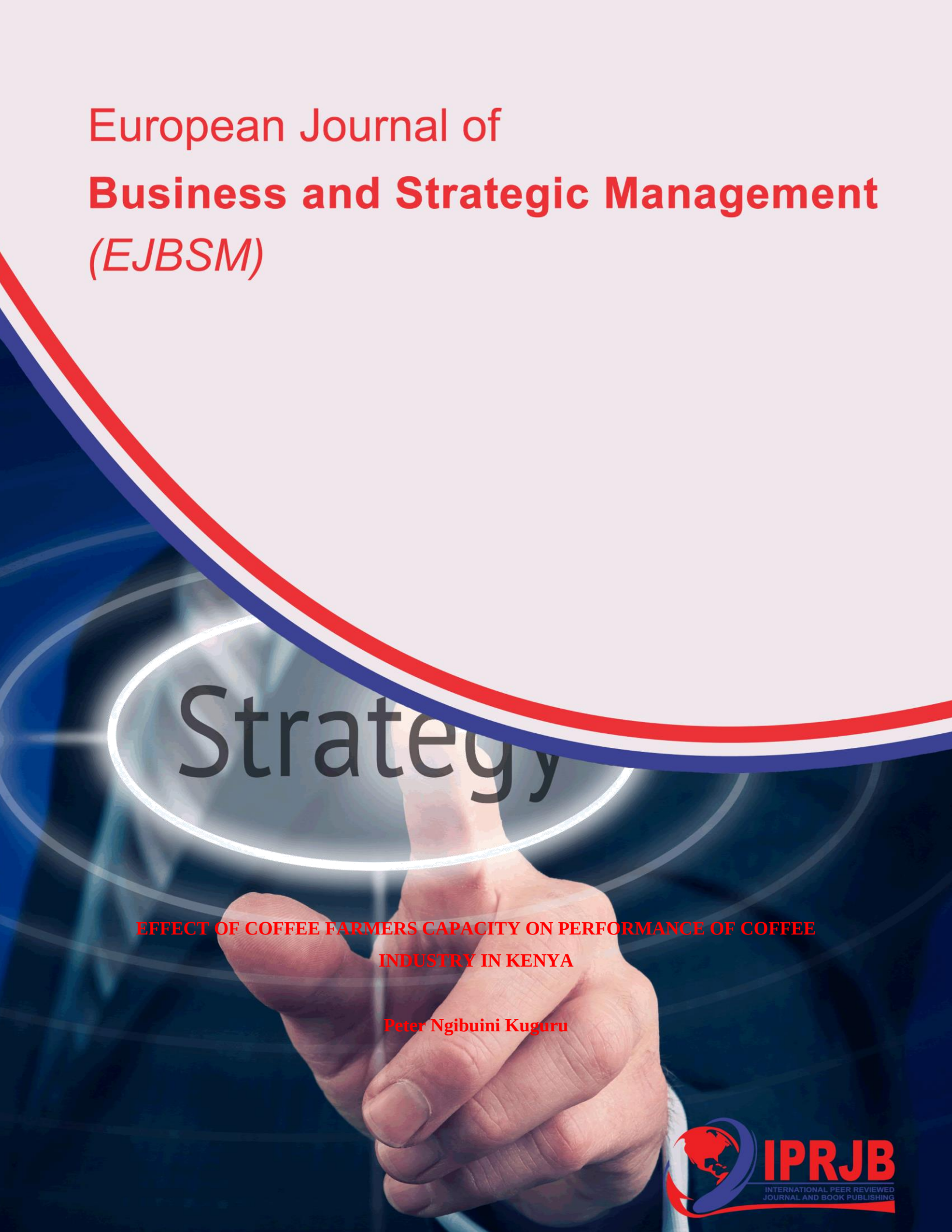
European Journal of
Business and Strategic Management
(EJBSM)



EFFECT OF COFFEE FARMERS CAPACITY ON PERFORMANCE OF COFFEE INDUSTRY IN KENYA

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IPRJB
INTERNATIONAL PEER REVIEWED JOURNAL AND BOOK PUBLISHING

European Journal of Business and Strategic Management
ISSN xxxx-xxxx (Paper) ISSN xxxx-xxxx (Online)
Vol.1, Issue 1 No.1, pp 39-50, 2016

www.iprjb.org

EFFECT OF COFFEE FARMERS CAPACITY ON PERFORMANCE OF COFFEE INDUSTRY IN KENYA

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ABSTRACT

Purpose: This study sought to determine the factors affecting the performance of the coffee industry in Kenya with a case study of Mathira Constituency. The study sought to find the existing linear relationship between the factors affecting the coffee industry and performance of the coffee industry. The factors that were considered included growers skills, growers level of education and level of technology awareness. The study was grounded on public interest theory of regulation, total quality management theory and Theory of Performance.

Methodology: Mixed mode research approach was used which consisted of the descriptive research design and correlation research design. Simple random sampling technique was used and the sample consisted of 385 respondents out of a population of 26,000 farmers. The study involved a primary data collection from the coffee farmers and the coffee cooperative society managers. The collected data was edited, coded, keyed in and analyzed using Statistical Package for Social Sciences (SPSS).

Results: Results showed that grower's capacity have significant effects on coffee industry performance in Kenya. The results show that majority of the respondents represented by 83.60% agreed and strongly agreed that limited grower's capacity in coffee industry has led to low performance of coffee industry in Kenya. In addition the results indicated that grower's capacity has a positive and significant relationship with coffee industry performance. Further the results indicated that an increase of 0.431 will result in a corresponding one unit increase in performance of coffee industry in Kenya.

Unique contribution to theory, practice and policy: This study recommended that farm inputs loans should be re-introduces, taxes on farm input harmonized, and the government should ensure that CBK is corruption free to pump new energy into the Kenya coffee industry.

***Key words*:** *Grower's capacity, Performance, Mathira Constituency, coffee industry*

1.0 INTRODUCTION

Coffee is increasingly becoming a part of Western culture; for many it has become a daily routine and coffee shops are now a common social meeting ground. Since coffee shops are springing up at every half block in one's local downtown, it may not be surprising that coffee has become the second largest traded commodity next to oil (Pendergrast, 2010). As the consumer steps up to the register and orders their four-dollar latte, it is most likely that they will not think of the more than 25 million people around the world that base their livelihoods on its production (Watson and Achinelli 2008). The producers of these coffee beans are often small-scale farmers who are reliant on faceless consumers, large corporations and an ebbing market for their income and resources. With coffee being one of the world's most traded markets, it is important for both consumers and producers to understand the impact the production of coffee is having on the farmers at a local level. In reality, as globalization expands so does the gap between coffee farmer and consumer. Even movements that seek to remove this veil, such as the Fair Trade organization, are perceived by the consumer to only be a more expensive pound of coffee with a different label. This paper will explore the impacts of coffee production on local producers by examining case studies in the growing regions. In addition, the research will also look at attempts, such as Fair Trade, to provide more stable lives for the farmers and more sustainable practices.

The condition of coffee farmers varies from region to region, but generally the farmers are at a disadvantage in global markets and often receive low prices for their products (Sick 2008). The farmers have to not only deal with the unpredictable force of Mother Nature, but also with the boom and bust cycles in commodity prices, limited economic resources and political control (Sick 2008). Often the analysis of the coffee market can be sweeping and focused on economic efficiency rather than the local impacts of market changes which often result in the marginalization of small-scale farmers, increased environmental degradation, and overall rural decline and poverty (Watson and Achinelli 2008). With market shifts, not only are the changes seen on an economic level, but the farmers' lives are also changed at the local level. Coffee farmers must consider the value of their crops since their access to education, healthcare, meals and their total livelihood relies on their crop's production.

Globally, coffee farmers now sell a pound of coffee for the market price of about one dollar, which can retail for around ten dollars (Gingrich and King, 2012). Although this price seems low, the market price for coffee has dropped even lower since the coffee crisis that began in 1989. Each region of coffee production has a unique history with coffee, some of which have been explored in the different case studies. There has also been a general and broad history consistent with the expansion and changes in the coffee market.

Today, coffee continues to be the most important crop in Brazil and the government continues to give incentives to small farmers to produce coffee. In a "município" of Minas Gerais, Rosário da Limeria, farmers are offered loans and services if they only produce coffee. As with the state in general, Rosário da Limeria promotes a monocrop model of high-yielding sun coffee and is not active in measures to sustain soil fertility (Watson and Achinelli 2008). As opposed to the structure of coffee production pre 1980's, the government has little involvement besides these incentives to grow coffee beans. Therefore, small-farmers and large scale producers both exist in the region with little restrictions. Thus, the contrast of life and effects of coffee production can be

seen between the poor farmers and those farmers with wealth and resources (Watson and Achinelli 2008).

Millions of coffee farmers and coffee trading enterprises lack sufficient credit. This is partly due to myriad challenges and considerable costs that formal lending institutions face serving rural, often isolated markets. It is also often perceived to be the case that the inability of coffee farmers and enterprises to manage risk contributes to keeping risk-averse lenders at bay. A better understanding of coffee sector risks is needed to respond with strategies, training, and tools that can help farmers and enterprises, mitigate their exposure to risk and strengthen their resilience against inevitable shocks. Such efforts might also assist in increasing the upstream flow of credit, catalyzing new productivity-enhancing investments, and contributing to more profitable and more sustainable livelihoods for coffee farmers (World Bank, 2015)

2.0 LITERATURE REVIEW

2.1 Theoretical Review

There are several theories that explain quality improvement. For instance, Scudder (2013) argues that Total Quality Management (TQM) is a quality improvement body of methodologies that are customer-based and service oriented. A popular TQM theory is Deming's theory of Total Quality Management .The theory rests upon fourteen points of management he identified, the system of profound knowledge, and the Shewart Cycle (Plan-Do-Check-Act). Deming's system of profound knowledge consists of the following four points: System Appreciation which explains an understanding of the way that the company's processes and systems work, Variation Knowledge which explains an understanding of the variation occurring and the causes of the variation, Knowledge Theory which explains the understanding of what can be known and Psychology Knowledge which examine the understanding of human nature. This theory is deemed relevant since it argues that any industry should have quality system in order to yield quality products which also apply to coffee industry in Kenya.

On the other hand, Crosby theory which emphasizes that quality is neither intangible nor immeasurable. It is a strategic imperative that can be quantified and put back to work to improve the bottom line. Acceptable quality or defect levels and traditional quality control measures represent evidence of failure rather than assurance of success. The emphasis, for Crosby, is on prevention, not inspection and cure. The goal is to meet requirements on time, first time and every time. He believes that the prime responsibility for poor quality lies with management, and that management sets the tone for the quality initiative from the top.

The theory of performance is also based on several axioms for effectiveness in improvement of performance. These include immersion, performer's mind-set and engagement in reflective practice (Sonnentag & Frese, 2001). Immersion into one's environment enables one to develop physically, intellectually and socially hence improving one's social relations, emotions, active learning, and knowledge alignment.

To ensure high level of performance the performer's mind-set is a very essential factor as it engages positive emotions towards the activity and enables the performer to consider failure as a stepping stone to achieving high level of performance. In this regard the farmer's mind-set is essential in decision making on whether to invest in coffee farming or divert to other avenues of

production for better profits (Bransford, Brown & Cocking, 2000). Reflective practice creates a platform for one to observe the current performance of an industry, examine the accomplishments, carry out an analysis of strengths, weaknesses, improvements and develop identity thus working for the improvement of the entity.

Elger (2014) in his rationale for performance theory indicates that human beings are able to accomplish extraordinary things in the universe. For example, humans can go to the moon and carry out other activities not because of their ease but because they are hard since the objective will be to measure and organize the individual's skills and energies. He refers to performance as a journey that is classified into levels in which the higher the level the higher the quality and level of effectiveness. The theory recognizes the characteristics of higher performance level to be capability and capacity of the activity, knowledge and skills level, cost effectiveness, quality of the product or the resultant factor and finally motivation and identity (Tomlinson et al, 2002).

2.2 Empirical Review

Songwlere (2010) conducted a study on effects of exports and export diversification on growth and the policy implications for post-crisis export strategies in India. The study used panel of 30 selected sub-Saharan African countries over the period 1995-2008, we estimate the impact of exports and export diversification on value added, labour productivity, and conditional and unconditional labour demand. The study found out that exports have a positive impact on value added, labour productivity, labour demand and the grower's capabilities to produce coffee of high quality. The study also found out that export diversification of products and markets increase value added and labour productivity, but not labour demand.

Mugweru, (2011), conducted a study on finding out the determinants of coffee production in the Kenyan economy he used a Nerlovian model to estimate supply response of coffee to these determinants and found out that there was appositive relationship between price and coffee 7 outputs, output and rainfall, output and hectare planted and coffee output and price of input. The recommendation was that the government had to intervene by addressing the credit constraints and other factors contributing to a negative change of the above mentioned determinants so the study give the current study a better understanding of the possible factor which might be a current problem hence contributing to the decline in coffee.

Wangari (2010) conducted a study on factors that contributes to the declining trend of coffee production in Kenya: the case in Nyeri County. The assessment was done using descriptive statistics where OLS model was used to analyze the factors which could be affecting coffee production. The study used primary data collected from the interviewed sample of 30 farmers. The result of the study found out that produce price, growers capacity, distance to market and visit by extension officers to be the major factors that had significant impact on coffee production. The study offered some recommendation on how the above mentioned factors could be addressed to enhance a reverse in the coffee production trend.

Karanja (1998) in his study mentioned that in an effort to enhance coffee production, major changes had been introduced into the way. Coffee planters were licensed. In 1996, the minimum acreage required for a farmer to be licensed as a coffee planter was reduced from 10 to 5 acres. That change had resulted in a doubling of the number of small estates (below 20 acres) from 630 in 1994 to over 1500 in 2000. Thus, the co-operatives continued to lose a sizeable number of

their well to-do members as that became licensed as planters. That had further lowered the capacity utilization of those coffee-pulping factories owned by co-operatives while creating an increasingly, important group of medium-sized coffee producers. The small estates like other estate farmers were able to process their coffee separately and therefore had more' incentives to improve on their coffee quality unlike smallholder farmers who had to pool their cherry at the co-operative factories.

2.3 Conceptual Framework

The hitches faced by coffee producers have contributed in the production of low quantity of coffee with relatively low quality. The trainings offered by the extension workers are inadequate with the effect on the knowledge levels of coffee farmers. This study will therefore examine the extent to which the type of skills possessed by the coffee farmers, their level of education and lack of modern technologies affect the performance of the coffee industry.

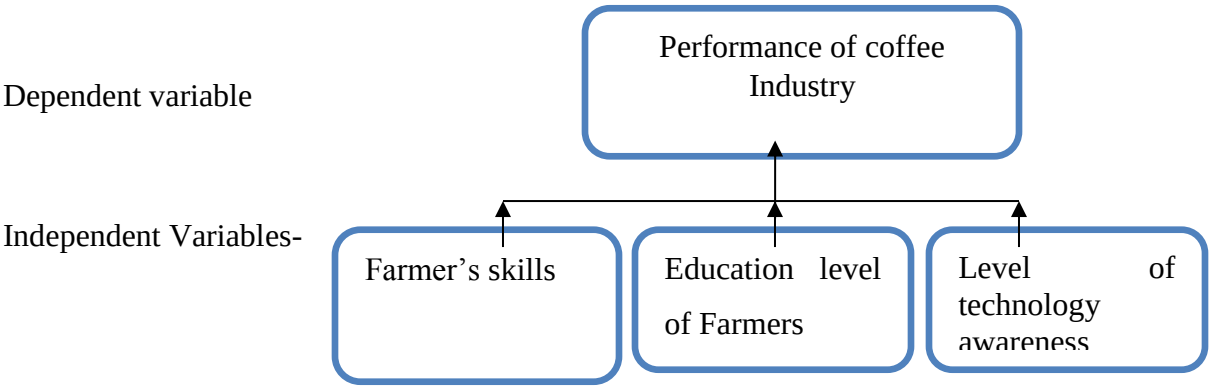

Figure 1: Proposed Conceptual model

3.0 METHODOLOGY

The study adopted a descriptive research design. Descriptive research design enhanced clear examination of the research topic and also facilitated data collection process by answering questions concerning the study as per the current status (Gravetter & Forzano, 2011). A descriptive survey entailed the collection of information by administering a questionnaire to a sample from the entire population of study. The study targeted the managers of coffee cooperative societies and coffee farmers in Mathira constituency. The study used primary data collected from a representative sample of the entire population via questionnaires which was used to solicit information as per the objectives of this study.

The target population in this study was 26, 000 coffee farmers inclusive of factory managers in Mathira constituency. Simple random sampling technique was used in this study. Primary data was of essence in this study as it allowed the researcher to address issues that are specific to their study. Primary data was collected from respondents via questionnaires. The questionnaires were administered to the coffee cooperative society managers, who are the project representatives, and

to the randomly selected members of the community by the researcher. The questionnaire comprised of the questions that intended to answer the questions formulated with reference to the objectives of the study and the research questions. The researcher furnished the respondents with an introductory letter issued by the university to instill confidence into the respondents. Piloting was carried out to assess the ability of research instruments in collecting viable and reliable data that corresponded to the objectives of the study.

The research yielded quantitative and qualitative data. The quantitative data was analysed using both descriptive statistics and correlations. Descriptive statistics helped to get the measures of central tendency and measures of dispersion which included the mean and standard deviation. The study used the quantitative method of data analysis. Data analysis played an important role in conversion of raw data into a form that can be subjected to statistical interpretation and presentation. The collected data was edited, coded, keyed in and analysed using Statistical Package for Social Sciences (SPSS). The researcher upheld ethical issues in the process of the study and gave respondents assurance that confidentiality was observed and data collected was to be used for research purposes only. The researcher obtained an informed consent from every respondent and all the relevant authorities were consulted. The researcher sought permission to collect all the necessary data required.

4.0 RESULTS AND DISCUSSIONS

This chapter comprises of data analysis, findings and interpretation. Results are presented in tables and diagrams. The analyzed data was arranged under themes that reflect the research objectives. The number of questionnaires that were administered was 385. A total of 385 questionnaires were properly filled and returned. This represented an overall successful response rate of 92.5% as shown on Table 1. According to Mugenda and Mugenda (2003) and also Kothari (2004) a response rate of 50% is adequate for a descriptive study. Babbie (2004) also asserted that return rates of 50% are acceptable to analyze and publish, 60% is good and 70% is very good.

Table 1: Response Rate

Response	Frequency	Percent
Returned	385	92.5%
Unreturned	31	7.5%
Total	416	100%

4.1 Demographic Characteristics

This section consists of information that describes basic characteristics such as age of respondents, level of education, size of land under coffee and years they have practiced agriculture.

Gender of the Respondents

The respondents were asked to indicate their gender. Majority of the respondents were male who were represented 55% of the sample while 45% were female. The figure below shows the results.

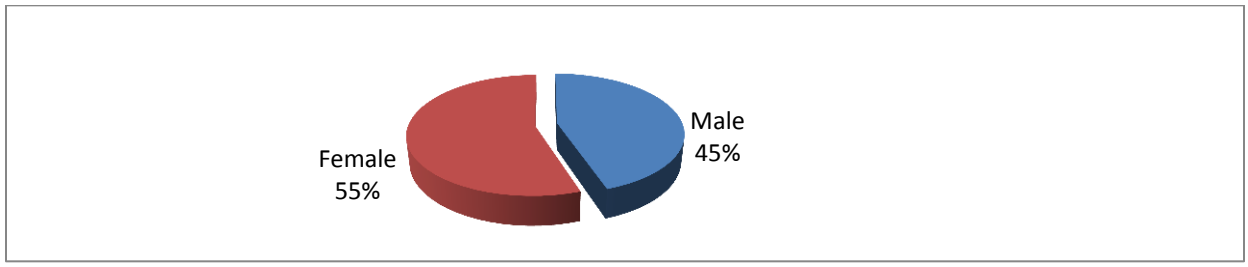

Figure 2: Gender of Respondents

Membership of Cooperative Society

The respondents were asked to indicate whether they were members of a cooperative society or not. Result in figure 3 shows that 96% of the respondents were members of cooperative societies while 4% were not members of the cooperative society as shown in the figure below.

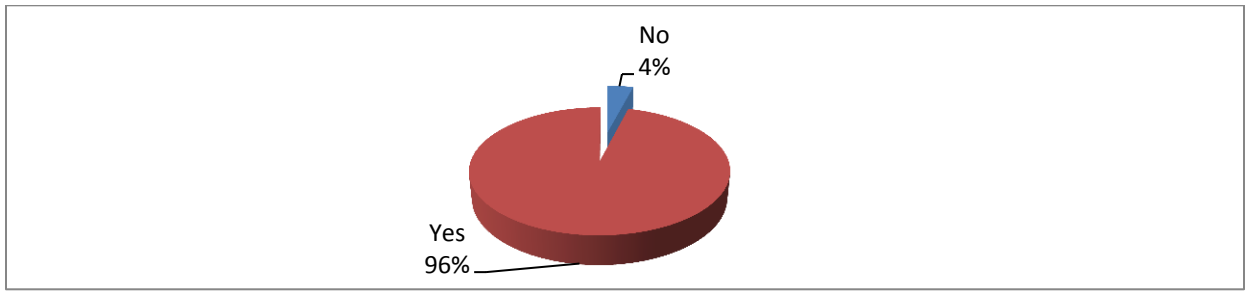

Figure 3: Members of Cooperative Society

Age of the Respondents

The respondents were asked to indicate their age bracket. Results in figure 4 shows that 60% of the respondents were over 50 years, 28% were between 41 to 50 years, 12% of the respondents were between 31 years to 40 years this indicate that those who were the majority were above 50 years.

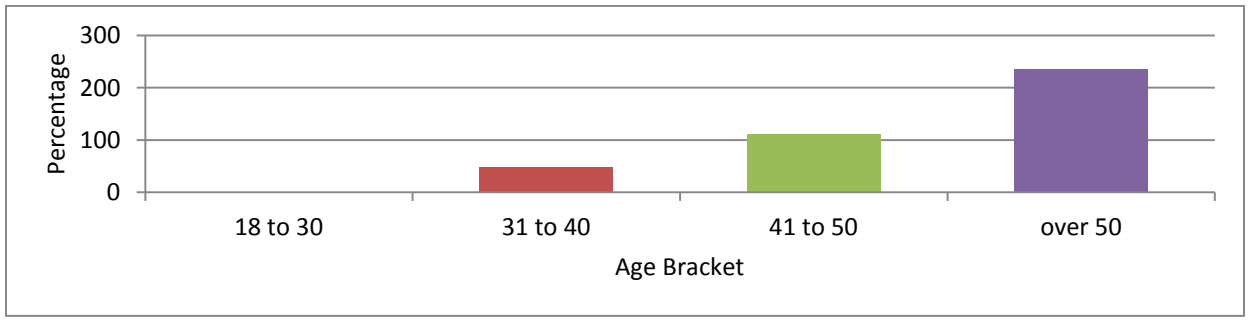

Figure 4: Age of the Respondents

Education Level of the Respondents

The respondents were asked to state their highest levels of education. Results in Figure 5 show that majority represented by 43% of the respondents had secondary qualifications, followed by

primary level with 34% of the respondents while 6% of the respondents were certificate level and 6% of the respondents were diploma level while 7% and 1% of the respondents had bachelor's degree and masters respectively. This implies that majority of the respondents have a secondary education level as shown in the figure 5 below.

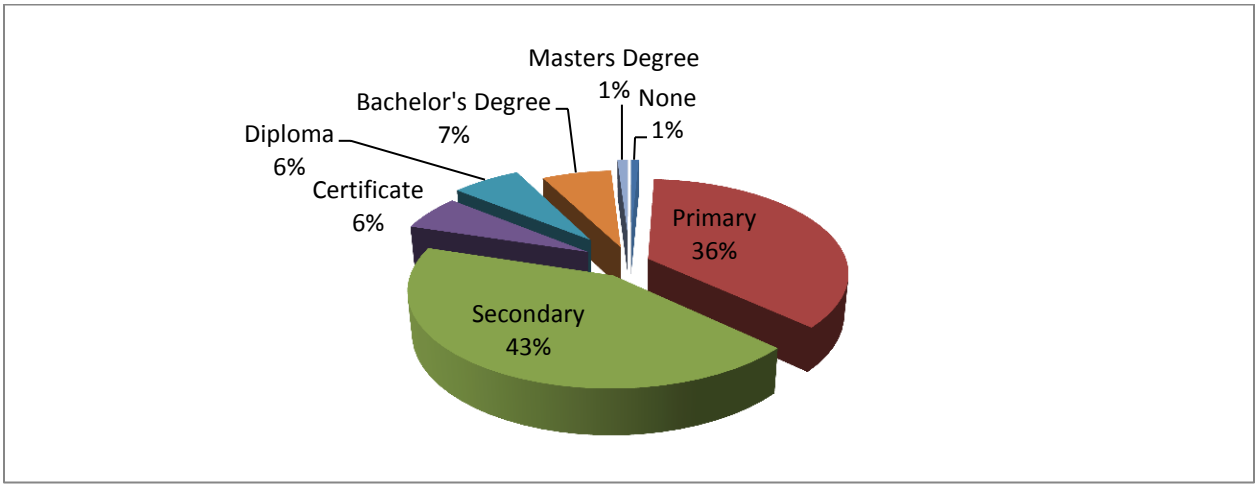

Figure 5: Level of Education

Monthly Income of Respondents

The respondents were asked to indicate their monthly income generated from coffee farming. Results in figure 6 show that 35% of the respondents earned below ksh. 2200 while 33% of the respondents earned income of over ksh. 6001 while 32% represented respondents who earned between ksh. 2201 to 6000 this implies that majority of the respondents generated an income of below 2200 from coffee farming as shown in the figure below.

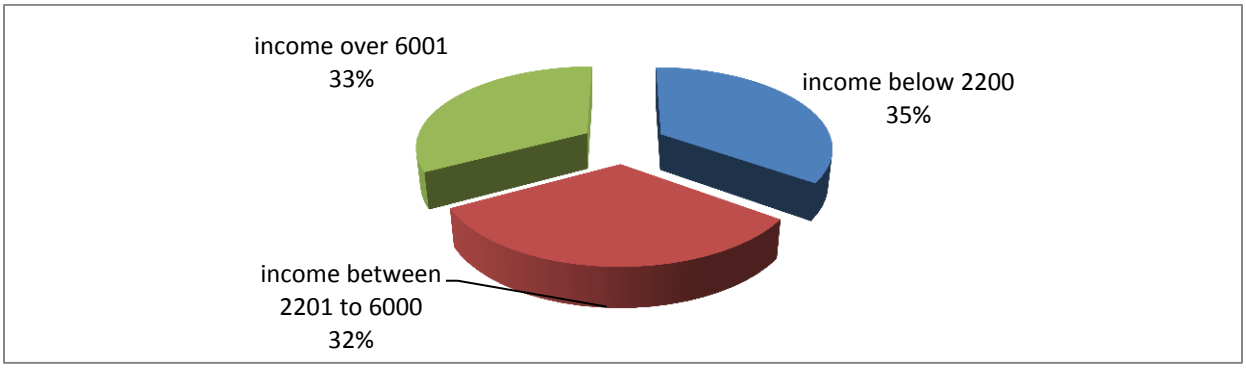

Figure 6: Income Generated from Coffee Farming

Income Come From Other Activities

The respondents were also asked to indicate the income they generated from other activities other than coffee farming. Results in figure 7 show that majority (74%) of the respondents were earning less than 10000 while 33% of the respondents earned income between 10001 and 30000 while 11% represented the respondents who earned over 30000 from other activities besides coffee farming.

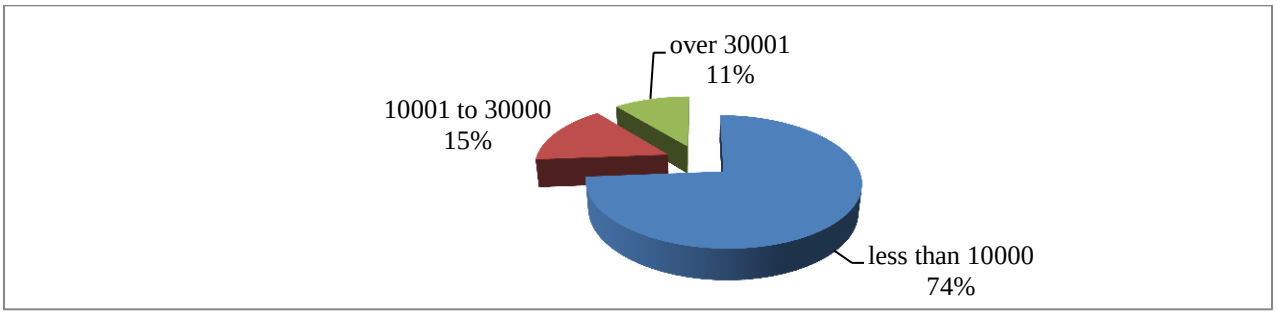

Figure 7: Income Generated from Other Activities

Land under Coffee

The respondents were asked to indicate the size of land under coffee. Results in figure 8 show that majority of the respondents represented by 93% had less than 4 acres under coffee while 1% of the respondents had between 4.1 and 10 acres of their land under coffee and finally 6% of the respondents had over 10 acres land under coffee. The study findings indicate that majority of the respondents were definitely not large scale coffee farmers as shown by the percentage of land under coffee. This can also be attributed to land fragmentation due to increase in population.

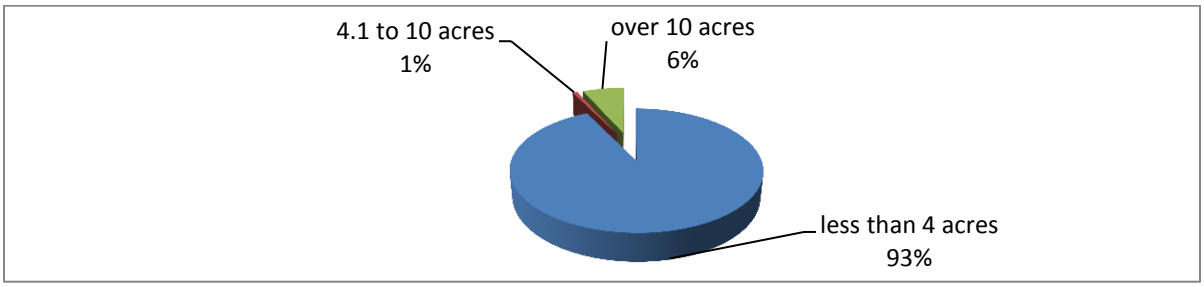

Figure 8: Land under Coffee

4.2 Grower's Capacity

The objective of the study was to establish the effect of grower's capacity on coffee industry performance in Kenya. The results presented in Table 2 below show that 66.10 % of the respondents agreed that majority of coffee farmers have little information on coffee farming hence leading a low performance of the sector in Kenya. Majority (47%) of the respondents also agreed that pesticides and other coffee disease control chemicals are unaffordable which contributes to low performance of coffee industry in Kenya. Majority of the respondents represented by 61.90% attributed low performance to high fertilizer prices making fertilizers out of reach of many coffee farmers. As to whether small land size led to low production of coffee which encouraged shift to other food crops and thus leading to low performance of coffee industry majority (48.00%) of the respondents agreed. Majority of the respondents represented by 50.90% also agreed that lack of enough funds prevented them from venturing into large scale coffee farming and this also had a negative impact on the coffee industry in Kenya. Using a five point scale likert, the overall mean of the responses was 4.04 which indicates that majority of the respondents agreed to the statement in the questionnaire. Additionally, the standard deviation of 0.753 indicates that the responses were varied. The results herein imply that grower's capacity influences the performance of coffee industry in Kenya.

Table 2: Grower's Capacity

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	STD DEV
Majority of the coffee farmers have little information/training on coffee farming thus leading to low performance	0.80%	3.50%	15.20%	66.1%	14.40%	3.9	0.70
The pesticides used for coffee diseases and pest control are unaffordable to most farmers and thus leading to low performance	0.00%	3.30%	13.40%	47.0%	36.40%	4.16	0.77
Fertilizer has become unaffordable owing to the high price vis a vis income gained from coffee and thus leading to low performance	0.00%	0.50%	7.80%	29.8%	61.90%	4.53	0.66
Small land size leads to low production of coffee and encourage shift to food crops and thus leading to low performance of coffee industry	0.00%	14.60%	25.00%	48.0%	12.40%	3.58	0.88
Financial constrains deter the small scale farmers from venturing into modern farming methods and thus leading to low performance	0.30%	1.30%	19.20%	50.8%	28.50%	4.06	0.74
Average						**4.04**	**0.75**

Correlation Results for Grower Capacity and Coffee Industry Performance

The results presented in the Table 3 shows that growers capacity and performance of coffee industry have positive and significant association (r=0.291, p=0.042).

Table 3: Correlation Results of Grower Capacity

	Statistics	Growers Capacity	Coffee Industry Performance
Growers Capacity	r-value	1	
	p-value		
	N	385	
coffee industry performance	r-value	.359**	1
	p-value	**0.000**	

N	385	385

Regression Results of Grower's Capacity and Performance of Coffee Industry

The results presented in table 4 present the fitness of model used in regression to explain the study phenomena. Grower's capacity was found to be satisfactory variable in explaining coffee industry performance. This is supported by coefficient of determination also known as the R square of 28.0%. This means that the above variable explained 28.0 % of the variations in the dependent variable which is performance of coffee industry in Kenya. This result further suggests that the model applied to link the relationship of the variables was satisfactory.

Table 4: Regression of Coefficients

	Performance of Coffee Industry
Parameter Estimate	Coefficient(P value)
Constant	1.692 (**0.001**)
Growers Capacity	0.431 (**0.000**)
R Squared	28.0
F statistic (ANOVA)	38.095 (**0.000**)

Results showed that grower's capacity have significant effects on coffee industry performance in Kenya. The results show that majority of the respondents represented by 83.60% agreed and strongly agreed that limited grower's capacity in coffee industry has led to low performance of coffee industry in Kenya. In addition the results indicated that grower's capacity has a positive and significant relationship with coffee industry performance. Further the results indicated that an increase of 0.431 will result in a corresponding one unit increase in performance of coffee industry in Kenya. This study finding is in line with that of Wangari (2010) and Karanja (1998) who found out that there was significant positive relationship between grower's capacity and performance of coffee industry in Kenya. Therefore efforts to revitalise performance of coffee industry should also be directed towards capacitating the farmers which will increase coffee production hence boosting the industry at large.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusions

Based on the findings above the study concluded that coffee industry performance requires a great deal of investment to raise the standards and maintain a vigorous industry. The grower's capacity was another limiting factor to expansion of coffee industry. The study therefore, concluded that lack of funds, knowledge in coffee farming and necessary farm inputs prevented full exploitation of coffee industry in Kenya.

5.2 Recommendations

The following recommendations based on the study findings are suggested to help boost performance of coffee industry in Kenya. The coffee industry players and the government need to harmonize the policies regulating coffee industry in order to achieve a robust industry. The

policies must be formulated with the benefits to farmers in mind and this will act as incentives to farmers to commit them to coffee farming.

Farm Inputs Loans should be re-introduces, taxes on farm input harmonized, and the government should ensure that CBK is corruption free to pump new energy into the coffee industry. In addition, CBK should be accountable in its transactions; exploitative middlemen should be rooted out of the industry to lay proper grounds for rejuvenation of coffee industry in Kenya.

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