

PRODUCTION CAPACITY & COMPETITIVE ADVANTAGES TOWARDS ORGANIZATIONAL PERFORMANCE OF SMALL SCALE COFFEE FARMERS IN KENYA.

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ABSTRACT

Certified coffees among which Fair Trade is the most prominent and dominant has been viewed as a strategic resource and sound contributor to the socio-economic stability of small scale coffee producers in the developing world. Coffee industry activities offers an income-generating alternative market strategy but with significant impact on the farming and enterprise performance, environment and community development. Though coffee farmers' organizational capabilities, resources and compliance to standards have become crucial to the industry stakeholders and commodity value chain, they have created barriers towards their competitiveness. In addition, coffee farmers improved production capacities including strategic resources management have often been mentioned as crucial in strengthening competitive advantages. The purpose of this quantitative research study was to examine the relationship between production capacities, competitive advantages and organizational performance of Kenya's coffee farmers. The study outcomes assist to identify a best practices model with an aim of building capacities toward global competitiveness. This is significant to the coffee industry, value chain stakeholders and economies of developing countries, such as Kenya in accessing markets, improving competitiveness and enhancing socio-economic livelihood of coffee farmers. One hundred East African coffee farmers and their cooperatives' managers all based in Kenya were surveyed. The study findings and conclusions present important recommendations to the academic community, researchers, industry, private sector organizations, public institutions and governments. Finally, some of the study outcomes translate into strategic resources management, improving private-public sector policy making and reforms, strengthening business competitiveness of coffee farmers and contributing to the frontiers of knowledge on organizational capacity and performance.

Keywords: Coffee Farmers, Kenya, Fair Trade

Introduction

In the wake of globalization of commerce due to rapid technological developments and changing food supply chain requirements, farmers and agri-producers from developing countries are confronted by a mix of challenges and opportunities that suggest strong organizational capacities are necessary for competitiveness (Deresky, 2011; Morgan, Katsikeas & Vorheis, 2012).

Organizational capacities refers to capabilities, policies, practices and resources that coffee farmers and their cooperatives must possess in order to overcome business environment challenges while pursuing the market opportunities (Gitu, 2012). The competitiveness of farmers and agri-producers especially coffee smallholders in Kenya requires resources and capabilities to achieve and maintain competitive

advantages at the international market (Chege, 2012; EAFCA, 2014).

According to the World Bank 2012 Trade Competitiveness Report, organizations from developing countries and recently emerging economies account for less than 2% of world trade in processed goods due partly to their inability to meet stringent high quality standards (Hagen, 2011). In this regard, some of the challenges in addressing these standards especially for Kenya's coffee farmers and their cooperatives include the need to improve organizational capacities; production capacities, governance structures and financial support as they seek market growth and competitiveness (Gitu, 2012). Additionally, some of the key organizational capacities that affect coffee farmers and cooperatives seeking competitive advantages are anchored around strong production capacities, strategic resource management, networking and supply chain capabilities (Chege, 2012; Kangethe, 2012; EAFCA, 2014).

Background

Despite the much hailed efforts of international trade associations, coffee farmers still face severe production capacity challenges as they seek competitive advantages. Those challenges include knowledge management, human resource development, use of research technology, quality coffee production, and value-addition processes (Gitu, 2012). According to East African Fine Coffee Association (EAFCA) (2014) report, lack of stable production capacity for the coffee farmer and cooperatives affects their vigor to develop competitive advantages and access to viable global markets.

According to Mureithi (2008) coffee is grown in the highland districts of Kenya including Central Province, Eastern Province, Rift Valley and Coast Province

being the major producing areas (Figure 1). The Mount Kenya region, Aberdare ranges, and Machakos areas account for 70% of the Coffee production with close to 45% of the population directly dependent on coffee earnings (Gitu, 2012). Kenya Coffee sector is composed of two categories of farms; the plantation sub-sector and the cooperative sub-sector with over a million smallholder coffee farmers (Mureithi, 2008).

Coffee and tea together are Kenya's largest foreign exchange earners contributing close to 35% of Gross Domestic Product (GDP) and the challenges to develop global trade competitiveness are contained in a Strategic Plan Report of 2008-2012 (Ministry of trade, Republic of Kenya, 2012). The performance of the coffee industry has had significant impact on all spheres of socio-economic development. On the upstream it has affected production capacity, farm suppliers, support agencies, and downstream transport and cooperatives sectors; on savings and investment intermediation; consumption of goods; and households' ability to pay for education, health and other necessary services (Mureithi, 2008). Among the world's largest traded commodities, coffee is produced in more than 60 developing countries, consumed mainly in developed countries and generates over US\$70 billion in retail sales each year (Coffee Exporters Guide, 2011; EAFCA, 2014). At least 14 countries depend on coffee for 10% or more of their export earnings. Consumer International Organization estimates that coffee growing provides a livelihood for 25 million people as well as 100 million people involved whether as farmers, processors, agents or retailers thus indicating the importance of developing coffee growers' supply chain and networking capacities. According to Ministry of Trade (GOK, 2012) Kenya's exports are concentrated in a narrow range of mostly semi-processed natural resource

products, like coffee and tea, that represent 35% of GDP even though they garner low prices in the international market. Therefore an enabling overall framework with effective policies, robust supporting agencies and other institutional reforms are necessary to enhance production capacity of Kenya's coffee farmers in seeking viable markets, gain competitive advantages and organizational performance (Gitu, 2012; EAFCA, 2014).

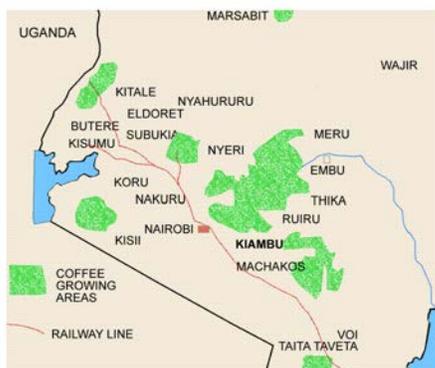


Figure 1: Coffee growing areas in Kenya adapted from Coffee Board of Kenya

Purpose of the study

The purpose of this study was to examine the relationship between production capacity and competitive advantages as they seek organizational performance in the context of small scale coffee farmers in Kenya. The results of the study may ultimately help to identify a best practice model on ways to strengthen coffee farmer production capacity and their competitive advantages in producing coffee that meets global market standards (Chege, 2012). Key areas of the production capacity of small scale coffee farmers in Kenya that have been the focus of limited empirical research include strategic management, production, marketing, financing, networking, and supply chain (Chege, 2012; Gitu, 2012). Consequently, increasing knowledge on ways to strengthen production capacity and competitive advantages is significant to Kenya's coffee

farmers in accessing market and organizational performance (Kangethe, 2012).

According to Gitu (2012) improving the participation of coffee farmers in their cooperative is one way of enhancing production capacities and recommends deeper research to understand other shortcomings that affect coffee farmers' competitiveness in seeking international markets. In this study, production capacity involves aspects of; governance, quality system, finance, marketing, supply chain and network capacities. Competitiveness involves the extent to which a farmer produces coffee that meets certification standards and quality requirements of global markets; and thus earns competitive market prices (Haque, 1995, Banajee, 2005). Competitiveness also includes productivity, export sales, income and profit considerations.

Chege (2012) cites several recommendations to improve the coffee sector production capacities including, new governance structures for cooperatives and millers, reforms for increased private-sector participation, networking among coffee stakeholders, coffee branding and value addition. In addition to network capabilities such as belonging to a producers' cooperative, developing and maintaining linkages and relationships with key stakeholders, financial institutions, trainers, market agents, foreign buyers and exporters, small scale coffee farmers can also improve their competitiveness through strengthening capacity in other key areas such as production, marketing, financing, supply chain, and governance (EAFCA, 2014). Therefore, this quantitative study helps to examine the relationships between production capacity and competitive advantages towards organizational

performance of small scale coffee farmers in Kenya.

The research study fills a significant knowledge gap to the academic community, researchers, industry stakeholders, business organizations, policy or decision makers and public since they may translate into strategic resource management and enhancing competitiveness (Sagheet et al., 2009; EAFCA, 2014). The research study ultimately provides results and recommendations that may offer potential solutions to intriguing business problems and contribute to the frontiers of knowledge and dissemination (Remenyi, 1998; Castillo, 2008). According to Heizer and Render (2009) core competencies are set of unique skills, talents, capabilities and or capacities that a firm attains for competitive advantage at the global level. According to DeKluyver and Pearce (2009) the most important and strategic resources of an organization are its human resource, knowledge capacities, reputation with customers, suppliers and financial institutions. Active participation of Kenya's coffee farmers in Cooperative leadership and strategic management are core organizational capacities that needs to be improved (Gitu, 2012; EAFCA, 2014).

The research study assists in identifying strategic management options for responding to higher standards and developing a best practices model for strengthening coffee production capacities, improving governance structures, networking and supply chain for coffee farmers seeking global markets and competitive advantages (Chege, 2012). According to Gitu (2012) providing training, financial resources and market information to coffee farmers and their cooperatives assists in enhancing their capacity for networking and supply chain activities. Muriethi (2008) notes coffee sector upgrading, value additions and improving

the production capacity of the coffee farmer and cooperative are significant recommendations as they seek global markets and competitive advantages, key to improving Kenya's coffee sector and economy.

Research Questions

The main leading research question guiding this research study was; What are the relationships between certified coffee organizational capacities and competitiveness of small scale coffee farmers in Kenya ? The five areas of coffee organizational capacities including coffee farmer capacity (production, financial and marketing) strategic management, networking, governance and supply chain will be operationalized and individual sub-questions developed.

Therefore the two research questions developed and derived are:

RQ1. What is the perception of small scale coffee farmers regarding their production capacity, competitive advantages and performance?

RQ2. To what extent is there a relationship between the perceived productive capacity of small scale coffee farmers and their competitive advantage and organizational performance?

Literature Review

The Kenyan community dependence on natural resources, and indeed on semi-processed agricultural produce like coffee and tea for Kenyan exports, traces its history back to 1884 scramble for Africa, led by European power nations. Africa as a continent had natural resources that could be transformed into raw materials and agri-products that European nations needed for industrial production and consumption in the developed world (Chege, 2012). For instance, Kenya would become producer and

exporter of coffee and tea, Ghana would export cocoa, and Ivory Coast would supply fruits, particularly banana and pineapple. Most African nations still mainly depend on natural resource-based and semi-processed agricultural produce for foreign exchange earnings (Chege, 2012).

Coffee seeds were introduced to mainland Kenya and Tanzania by the Holy Ghost Fathers of the French Catholic Church with Protestant Scottish missionaries experimenting the Mocha seedlings at their various stations in Kenya, including Kibwezi (1893) and Kikuyu (1922) (Mureithi, 2008). According to Chege (2012) for farmers to collectively lobby the government, they formed Planters Union of Kenya in 1917 which was instrumental in making Kenya move up the value chain and export semi processed coffee. The sharp declines in coffee production during the Great Depression saw the establishment of the CBK in 1934 to help stabilize the local coffee industry. The CBK was formed to regulate production and marketing of coffee upon enactment of the Coffee Act (1933). Additionally, the CBK was charged with the responsibility of promoting the coffee industry to give Kenyan Coffee an identity and distinct global market positioning in collaboration with coffee sector stakeholders.

According to Mureithi (2008) coffee is grown in the highland districts of Kenya including Central Province, Eastern Province, Rift Valley and Coast Province being the major producing areas (Figure 2). The Mount Kenya region, Aberdare ranges, and Machakos areas account for 70% of the Coffee production with close to 45% of the population directly dependent on coffee earnings (Gitu, 2012). Kenya Coffee sector is composed of two categories of farms; the plantation sub-sector with approximately 44% production and the cooperative sub-

sector with close to a million smallholder coffee farmers and 56% coffee output (Mureithi, 2008; USAID, 2010).

There are two major coffee species in the world: *Arabica* which accounts for 60-65% of global supply and *Robusta* which accounts for 35%, compared to only 25% some 20 years ago (Coffee Exporters Guide, ITC, 2011). Arabica is more expensive, but Robusta easier to produce, more resistant to diseases and can be grown at lower altitudes. Arabica is mostly produced in Latin America but large suppliers exist in Ethiopia, Kenya, India and Papua New Guinea. Robusta is produced primarily in Vietnam and Brazil. Coffee goes through a number of value chain stages from the coffee grower to the final consumer (Figure: 3): pre-season preparations, harvesting, preliminary processing, milling, exporting, importing, roasting, packaging, wholesaling and retailing (Consumer International, 2005).

Methodology

Over 100 prospective participants were randomly selected and approached from target population that includes over 100,000 coffee farmers and 100 cooperative organizations contacted based on prior and current information on Kenyan coffee sector using Minitab, a statistics software package. In addition Quantitative Analysis of data gathered from the questionnaire, was inputted into SPSS statistic package for further analysis. The tests carried out on SPSS include Chi-Square, Correlations and Principal Component Analysis. Descriptive analysis, included the use of mean, mode, median, standard deviations, regressions, graphs, charts, percentages frequency tables that helped to describe the correlations of the different independent variables.

Measures and Survey Instrument

Production capacity in this study is operationalized as a function of a farmer's perception regarding resources and capabilities as measured in each of the capacity factor in the conceptual framework of the study (see Figure 2) and also the measurement of each area of capacity in the measurement tool SFCAT. A seven-point scale running from 0 (Not Applicable) to 6 (Acceptable, Needs Maintaining) is used as measurement rating. Perceptions are a valid indicator as supported by several studies (Morgan et al. 2012; Gitu, 2012). Regarding the dependent variables in the conceptual framework of the study, "Competitive Advantage" and "Competitiveness" are operationalized, as shown in the SFCAT tool, based on the perceptions of respondents regarding their competitive advantage and competitiveness when compared to competitors (Gitu, 2012, Morgan et al., 2012). Data collected from the SFCAT measurement scale was used to conduct relevant statistical analysis.

Data Analysis

Factor analysis was applied to examine the content validity of the instrument and each of the variables measured using the SFCAT survey tool, prior to conducting statistical analysis to test the hypotheses in the study. Multivariate statistical analysis procedures was applied to test each of the following hypotheses

Ha1a: There is a relationship between coffee farmer capacity and competitiveness.

Ha1b: There is a relationship between strategic management capacity and competitiveness.

Ha1c: There is a relationship between networking capacity and competitiveness.

Ha1d: There is a relationship between governance capacity and competitiveness.

Ha1e: There is a relationship between supply chain capacity and competitiveness.

Data collected from the SFCAT measurement tool was used to conduct relevant statistical analysis such as regression analysis, factor-analysis, analysis of variance (ANOVA) required to examine the correlations among the independent and dependent variables pertaining to each of the five hypotheses in the study. Once respondents had returned their surveys, data entry was performed to prepare for the survey statistical data analysis. Incomplete survey responses were excluded from the analysis. Descriptive statistics includes among others using measures of central tendency (mean, mode and median), variability (range, standard deviations and variance), graphic representations (scatter, graphs, charts and percentages) and frequency distribution by tables, were used to examine the categorized independent variables (James, 2008; Garroway 2008).

Other relevant statistical analysis procedures were used. For example, the Principal component analysis (PCA) is a multivariate analysis method, used to extract dominant patterns in the Likert- scales like those found in the questionnaire (Abdi & Williams, 2010; Gitu, 2012). According to Hsiao et al. (2011) PCA is used to examine the dimensionality of measures with a correlation between a component and a variable estimating the information they share. Using PCA provides information on the inter-correlations of the most significant variables present in the Likert scale (Morgan et al., 2012). The SPSS statistical software was used to analyze the data. Data analytical techniques to generate descriptive statistics and correlation analysis will be used. The

descriptive statistics was used to analyze the distribution of the main variables of the study. Correlation coefficients are calculated to test the statistical hypothesis, as well as indicate the strength and direction of the relationship between two variables (Zheng, 2009; Christensen, 2011).

The hypotheses testing of the null hypothesis (denoted by H_0), was assumed to be correct but tested for rejection and alternative hypothesis (denoted by H_a) by default is false but hoped to be established (Cohen & West, 2003). The use of SPSS statistical software to run several statistical tests providing the correlation coefficients, regression, variance and probability value (p-value) had been documented (Hsiao et al., 2011; Zheng, 2009). If the p-value is less or equal to a predetermined level of significance, the null hypothesis would be rejected and the alternative hypothesis would be supported. Correlation coefficient closer to zero implies that there is no statistically significant correlation between two variables, while closer to +1.00 shows strong correlation and alternative hypothesis is supportable. Other descriptive statistics of mean, standard deviation, range and variance would assist to validate the data analysis method and provide basis for deductions.

Results

Summary of findings and results revealed that over the recent two decades Kenyan small scale coffee farmers and cooperatives societies have experienced a decline in production capacity severely affecting their competitive advantages. Quantitative results exhibited the demographic characteristics of small scale coffee farmers that are members of Cooperative Societies through the use of descriptive statistics. Most small scale coffee farmers were found to be producing a small amount of coffee on small plots of land averaging 1/2 acre and receiving little

income from coffee sales. The production capacity was also found to be particularly due to lack of quality training, cost of coffee inputs and appropriate production practices.

Comparing production capacity with a number of different competitive advantage characteristics revealed a significant correlation especially towards coffee price, delivery arrangements, consistent supply and even quality. The Factor analysis revealed a positive relationship between production capacity and competitive advantages towards organizational performance of the small scale coffee farmers. Similarly conducting a principal component analysis with resultant matrix highlighted that small scale coffee farmers and generally cooperative society members placed a lot of importance on coffee net income, profit margins and re-investment on coffee farm as well as their family livelihood, community development and coffee quality, productivity.

Conclusion And Recommendations

Overall productivity policy aimed at improving coffee productivity is needed to increase the volumes of premium coffee produced by small scale coffee farmers and their coffee cooperatives. Implementing this policy would require the involvement of stakeholders at the macro level of the coffee sector because of the high investment costs. The need for superior farm inputs, extension services and land use policies is evident. While small scale coffee farmers are willing and able to produce premium coffee, their coffee earnings should be assured by regulatory bodies. They consistently provide their labor and land to produce premium coffee if other essential support systems are in place. Agrochemicals such as fertilizers, pesticides and fungicides are costly and of substandard quality and hence Ministry of agriculture or Cooperative Development needs to better collaborate with the Ministry

of industrialization to provide superior agrochemicals at affordable prices so that farmers can effectively apply them to coffee production and increase capacity. Providing affordable agrochemicals may require government subsidy as most agrochemicals (or their components) are currently imported, thus farmers are forced to incur high transport costs. The government can combat high prices by providing incentives for domestic production of affordable agrochemicals.

The government can also provide farmers with micro-credit or other appropriate financing solutions to allow them to purchase agro-chemicals and other coffee inputs before coffee payments are realized. Extension services are also a requisite to improving coffee productivity and capacity. The government should increase its investment in research and development for coffee. The researcher notes that the

performance of Coffee Research of Kenya needs to be brought into higher significance especially towards the value-addition activities.

the results of this study showed that small-scale farmers in rural Kenya are willing to transform the current state of their production capacity and competitive advantages together with their coffee cooperative organizations. For this reason more research needs to be undertaken to enhance the organizational capacity of coffee cooperatives in Kenya. Even though the coffee industry is scared by macro-level policy changes that have affected the small-scale farmer, problem solving needs to be a grassroots approach. Therefore deeper research should continue to look at the how Kenya's small scale coffee farmers and their coffee cooperatives continue to survive and improve their organizational performance towards gaining global competitiveness

Certified Coffee Organizational Capacity and Competitiveness Study

Smallholder Coffee Farmer Capacity Assessment Tool	
Participants Initials (Optional):	
Age:	
Sex:	
Highest Educational Level:	
# of Household members:	
# of Part-time workers:	
# of Full time workers	
Coffee farm size / acreage:	
% of coffee farm to entire land:	
Other crops:	Yes / No

Livestock:	Yes / No
Name of Cooperative:	
Cooperative membership:	
Alternative markets:	Yes / No
If yes % of coffee sold:	
Coffee certification:	
Name of coffee miller:	
Date of Assessment:	
Rating Scale	
0	Not Applicable or sufficient information is not available to assess the element
1	Needs urgent attention
2	Needs major improvement
3	Needs improvement on a large scale
4	Needs improvement in limited aspects
5	Acceptable, room for some improvement
6	Acceptable, needs maintaining

Smallholder Coffee Farmer Capacity Assessment Tool	
Production Capacity: What is your perception regarding.....?	
1. Certification for implementing good agricultural practices	0 1 2 3 4 5 6
2. Coffee tasting skills	0 1 2 3 4 5 6
3. Pruning or pre-harvest skills	0 1 2 3 4 5 6
4. Training support by extension trainers	0 1 2 3 4 5 6
5. Participation in training	0 1 2 3 4 5 6
6. Use of new production inputs	0 1 2 3 4 5 6
7. Adoption of disease resistant variety	0 1 2 3 4 5 6
8. Access to planting materials	0 1 2 3 4 5 6
9. Cost of coffee production inputs	0 1 2 3 4 5 6
10. Availability of production equipment on the farm	0 1 2 3 4 5 6
11. Availability of processing equipment	0 1 2 3 4 5 6

12. Availability of productive workers	0	1	2	3	4	5	6
13. Post-harvest handling of coffee	0	1	2	3	4	5	6
14. Quality control coaching by experts	0	1	2	3	4	5	6
15. Application of appropriate fertilizers	0	1	2	3	4	5	6
16. Exposure to improved production practices	0	1	2	3	4	5	6
17. Use of new coffee research techniques	0	1	2	3	4	5	6

Smallholder Coffee Farmer Capacity Assessment Tool							
Competitive Advantage: What is your perception regarding.....?							
18. Quality attributes of coffee	0	1	2	3	4	5	6
19. Prices offered to buyers	0	1	2	3	4	5	6
20. Delivery arrangements to marketers	0	1	2	3	4	5	6
21. Consistent supply of coffee to buyers	0	1	2	3	4	5	6
Competitiveness: (Performance) What is your perception regarding.....?							
22. Coffee net income	0	1	2	3	4	5	6
23. Commitment of coffee payments from buyer	0	1	2	3	4	5	6
24. Re- invest of income in coffee farm	0	1	2	3	4	5	6
25. Farm Productivity	0	1	2	3	4	5	6
26. Profit margins from coffee sales	0	1	2	3	4	5	6
27. Overall earnings from coffee farm	0	1	2	3	4	5	6

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