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Competitiveness in the Cash Crop Sector: The Case of the Cameroonian Cocoa Industry Value Chain

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Since independence, the cocoa industry of Cameroon has gone through various phases suffering from deregulation of the industry, globalisation, trade liberalisation, natural disasters etc. This paper aims at analysing the competitive performance of a very tradeable global commodity and the main export crop of Cameroon from 1961 to 2013 through the application of a step-wise analytical framework adapted from ISMEA, (1999); Esterhuizen, (2006); Van Rooyen and Esterhuizen (2012) accommodating aspects of agri-value chain analysis.

This conventional analysis was expanded to include value chain comparisons between various value-adding processes in the Cameroonian cocoa value chain as well as consensus vs. variations in opinions of different actors within the cocoa industry regarding the factors influencing the industry's competitive performance from the application of the Porter Diamond model. Information from chain actors through the cocoa executive survey (CES) was used to further expand the framework and analyse the relationship between the various factors affecting the industry's performance i.e. identify factors which are interrelated in influencing the industry and those that show a degree of independence. Such information is viewed as facilitative for strategic planning purposes. Results revealed that three Porter determinants positively influence the industry's performance while two were constraining implying that the Cameroon cocoa industry, while performing positively, can strive to increase competitiveness considerably by applying selected industry-based strategies.

Keywords: Cameroonian cocoa industry, competitive performance, relative trade advantage (RTA), cocoa executive survey (CES), Porter Diamond.

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1. Introduction

After a long period of neglect, agriculture is presumed to play a vital role in spear-heading economic growth and development in the African continent. This realisation has prompted the prioritisation of agriculture by many African governments and from a growing revenue base; they have increased the proportion of their national budgets going to this vital sector (Ngongi, 2016). Although Africa enjoys a comparative advantage in agriculture and many African exporters have gained access to new markets and boosted their exports, unless their business environment and competitiveness are improved, their products will yield lower values in the world market. There is therefore the need to improve the agricultural competitiveness, along the full value chain, in order to achieve and sustain

growth (Webber & Labaste, 2010). Agribusiness can help in catalysing the economic transformation of a country through the creation of industries in the agricultural sector (World Bank, 2013a; Wiggins et al, 2015; Van Rooyen, 2014).

This paper focused on measuring competitive performance and identifying the issues that constrain and promote the competitive performance of the Cameroonian cocoa industry building on contemporary frameworks and methods of analysis, applied to the agricultural sector and introduces refinements by adding value-chain analysis and statistical analysis to the study. The study attempted to answer the following questions:

- How can competitiveness be defined within the context of the Cameroonian cocoa industry?
- What data and tools can be used to measure competitiveness and, how competitive is the cocoa industry of Cameroon in a global context and with other industries?
- How to determine the factors that determine the competitive performance of the Cameroonian cocoa industry?
- How can the cocoa industry of Cameroon improve on and sustain its competitiveness?

This paper is organised as follows; section two presents a brief description of the Cameroonian cocoa industry while section 3 will elucidate on the method and analytical framework used. The competitiveness status of the Cameroonian cocoa industry will be addressed in section 4 while section 5 will discuss in detail the factors that influence the industry's competitive performance and section 6 will be the conclusion.

2. The Cameroonian Cocoa Industry at a Glance

Cocoa is one of the main cash crops and exports of the country and was introduced in Cameroon by the Spanish in the sixteenth century. The strong chocolate flavour, acceptable level of acidity, good bean size and high butter content meets desired quality for both domestic and international consumers making Cameroonian cocoa characteristically distinct from that of other countries (Gilbert & Tollens, 2002). Cocoa from Cameroon is the most sought after cocoa brand in the international market (Uba, 1999). Cocoa occupies about 450 000 ha (37%) of the total cultivated area in Cameroon with average farm size of about 5 hectares. The South West province is the highest cocoa producing region in the country (CTA, 2012). There has been a significant increase in both quantity produced and area harvested from 75 000 tons and 380 000 ha in 1961 to 209 000 tons and 670 000 ha in 2013 with an average yield of 4 104 tons in 2013 (FAO, 2016). Cocoa makes up a great share of the country's agricultural export accounting for approximately 90% of the income of rural communities involved in cocoa production.

Despite the vital role played by the cocoa industry in the economy of Cameroon, the sector is still highly under-performing plagued by low productivity, low quality, low prices etc. The government and external partners such as the international cocoa and coffee organisation (ICCO) and the International Institute for Tropical Agriculture (IRAD) have implemented various projects in an attempt to improve on the performance of the industry and ensure that rising global demand and stringent quality in the international market are met. Some of these projects include: Improvement of cocoa marketing and trade in liberalizing cocoa producing countries project. This project was initiated and supervised by ICCO but executed by the United Nations Office for Project Services (UNOPS) in Cameroon, Nigeria and Cote d'Ivoire and aimed at improving the functioning of the cocoa supply chain in these countries and ensure that local producers fully participate in the physical trading of cocoa hence reducing price and trade risks (ICCO, 2007).

The sustainable Tree Crop Program (STCP) was another main project implemented in the cocoa industry. The aim was to ensure that cocoa production achieved its full economic potential and that tree crop farming systems are environmentally sustainable in West and central Africa by means maintaining low cost of production (KIT, 2010). The Farmers' Field School program (FFS) was the main tool used in this program through which farmers were trained on integrated crop and pest management (IPM) for controlling the black pod disease (BPD) as well as quality improvement. By 2009, about 3 200 farmers had been trained through the FFS with about 9 000 more benefiting indirectly through the dissemination of information among farmers. 242 fascinators, 12 cooperatives and two cocoa related organisations also received training (IITA, 2009).

The ageing population of cocoa farmers prompted the implementation of the "New Generation" project in 2012 by the Interprofessional Council for Cocoa and Coffee (CCIC) in partnership with the Ministry of Agriculture and rural development. This project aimed at rejuvenating the cocoa producing population, engaging youths in the production of cocoa, creating employment in rural areas, as well as professionalising cocoa production to achieve improved cocoa production and quality, As of 2014 about 600 youths had been trained and approximately 900 ha of cocoa farms had been created (Maledy, 2014).

Cocoa produced in Cameroon is sold both in the international and domestic market the industry is however highly export oriented. In 2013, approximately 203 905 tons was produced however, only 32 700 tons or 15% was processed locally and the rest 85% exported in raw form. The low domestic processing prompted the government to put in place plans to create new processing units and double the domestic processing capacity to 30% (Reuters Africa, 2016). The Cameroonian export market for cocoa is concentrated in a few countries with the European Union (EU) being the main destination. This tends to increase dependency of the few exporters and should they impose any major changes in their markets the Cameroonian cocoa industry will be highly and adversely affected. The Netherlands

is the highest importer of Cameroonian cocoa followed by Belgium, Germany, Italy and Spain (ITC, 2016). In 2013, Cameroon exported 179 933 tons of cocoa valued at 3.8 million US\$ and accounting for 6.7% of the world's total cocoa exports making it the fifth largest exporter of cocoa in the world and the fourth in Africa (FAO.2017).

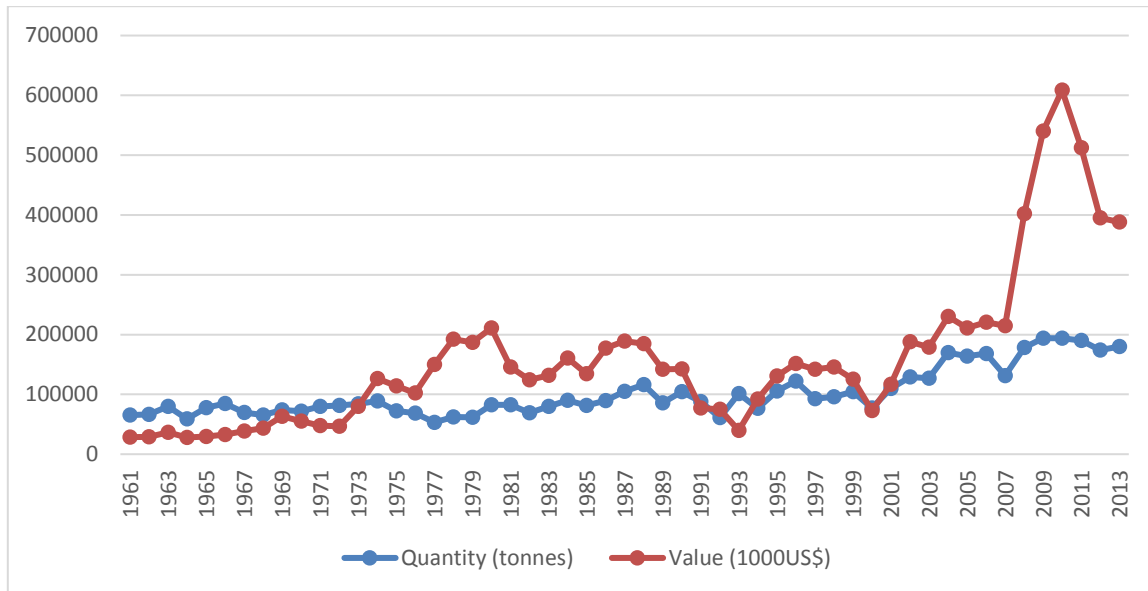


Figure 1: Quantity and value of the cocoa exported from Cameroon
Source: FAO (2017)

Figure 1 above illustrates that exports of cocoa beans have increased steadily from 1992 (61181tons) to 179 933 tons in 2013 (FAO, 2017). Although trade legislations particularly the economic partnership agreement (EPA) permits free trade between the EU and Cameroon, the EU however recently tightened its laws on cocoa importation and 2013, about 2 000 tons of Cameroonian cocoa exports were rejected because of the high smoke content from drying the cocoa in ovens and high chemical content of the cocoa due to cocoa being dried directly on tarred roads (Business in Cameroon [BIC], 2015).To avoid such situations in future, the government resorted to free distribution of tarpaulins to farmers and provided ovens for drying in the South West region usually plagued by heavy rains (Business In Cameroon, 2015).

3. Methodology and Framework of Analysis

A comprehensive analysis of the competitive performance of the Cameroonian cocoa industry entails a chronological method of analysis adapted from ISMEA (1999); Esterhuizen (2006); Van Rooyen et al. (2011); Jafta (2014); Boonzaaier (2015) and Angala (2015) consisting of defining competitiveness, measuring competitiveness of the industry using the appropriate tools of measurement, identifying the major factors responsible for such performance, analysing the determinants of competitiveness and

then using information from the analysis to make informed propositions to improve the industry's performance. Certain innovations and extensions were however introduced to the conventional approach in this study.

Firstly, this study adopted a value chain approach to competitiveness, i.e. it did not focus solely on one production sector or the industry as a whole but extended the analysis to include major value-added activities for the measurement of competitive performance. Secondly, opinion assessments of two major cluster groupings **Cluster 1 or cocoa agribusiness**- role players dealing with cocoa in its raw state; cocoa beans and i.e. producers, exporters and those who provide direct support to production activities e.g. input and service providers and/or advisors. **Cluster 2/cocoa processors** represents actors involved in the transformation of cocoa beans into semi-finished and finished products i.e. manufacturers of chocolate and related products.. Thirdly, an enquiry will be made to analyse whether the determinants of the Porter Diamond model are interrelated or independent within the context of the Cameroonian cocoa industry of Cameroon. If they are interrelated, they need to be dealt with as such in strategy and planning processes. This test involves carrying out statistical analysis involving p-values. Determinants or factors with a p-value lower than 0.05 indicate interdependence or interrelationship between them whereas those with a p-value above 0.05 show a strong level of independence.

3.1 Defining Competitiveness (Step 1)

The extensive literature regarding competitiveness and the complexity of the concept has resulted in various definitions of competitiveness. Competitiveness can be considered as relative and multi-dimensional with the meaning and implication of the concept constantly changing over time and context. Competitiveness can be assessed from country, industry and firm levels (Ajitabh & Momaya, 2004). The first step to analysing the competitive performance of the cocoa industry of Cameroon therefore involves identifying a suitable definition of competitiveness as it applies to the Cameroonian cocoa industry.

In this paper competitiveness is defined as the ability of the cocoa industry of Cameroon to successfully trade its products in both domestic and international markets on a sustainable basis and attract scarce resources such as land, labour, technology, management talents and capital from other competing economic activities while earning at least the opportunity costs of returns on resources employed (Freebairn, 1986).

Competitive performance is thus viewed as the ability of the Cameroonian cocoa industry to sustain trade against its competitors. The economic sustainability of the cocoa industry is found to be dependent on its trade performance where more than 80% of cocoa produced is exported. This

definition caters for the practice that the major value of cocoa is earned in the international market and sets the frame for a comprehensive measurement and analysis of the competitive performance of the industry.

3.2 Value Chains and Value Adding in Agriculture

Through trade liberalisation and rising globalisation many new actors have entered into the global market prompting industries to design strategies to be more competitive (Zereyesus, 2003). Trade and foreign direct investment (FDI) have made nations more inter dependent forming a global value chain (Gereffi, Humphrey and Kaplinsky, 2001). The global value chain provides a production system which links various actors (firms, workers and consumers) around the world creating an environment where (developing) countries, firms, workers and consumers can integrate into the global economy (Gereffi & Fernandez-Stark, 2011). A value chain orientation linked to an industry/firm focus therefore remains important in today's global economy and will strongly enhance competitive performance.

The importance of effective value adding through effective value chains in the development of agro-industries and consequently expansion of the agricultural sector cannot be over emphasised (Van Rooyen, Esterhuizen & Doyer, 2009 and World Bank, 2013). Through innovative value adding, value chains are able to increase and maintain competitiveness (African Development Bank [ADB], 2012). Value chain analysis (VCA) has received growing interest recently and has been applied to a number of industries such as the agricultural, garment and electronics industries (Gereffi, Humphrey and Kaplinsky 2001; Webber and Labaste, 2007; Van Rooyen, 2014). The VCA concept has been used to formulate and implement competitiveness strategies (World Bank, 2007; Webber & Labaste, 2010).

Kaplinsky, Morris & Readman (2002) define value chain as a full range of value-adding activities required to bring a product from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), to the delivery of final consumers and final disposal after use. Their approach tries to understand how activities are performed along the chain and how the value is created and shared among chain members. This definition points out the importance of information flow in achieving value chain competitiveness. Information sharing is an important factor enabling cooperation within an integrated value chain.

VCA was introduced in this paper due to the importance of value adding of information flows and value-adding processes for a coordinated approach between different functions based on market preferences and the necessary smoothing of processes as captured by the Porter Diamond (Webber and Labaste, 2007). In order to do such an analysis, the RTAs of different value-adding activities in a value chain was measured; enquiries about the differences or consensus of views on competitiveness

between different players in the chain was made and such differences and consensus were accommodated in strategic proposals to enhance competitiveness of the industry

3.3 Measuring Competitiveness (Step 2)

The growth and survival of a firm or industry depends on its ability to compete successfully in the business environment in which it operates. To measure how competitive an industry or country is, at industry/sector level, it is necessary to determine how successful the industry or country is when compared with others producing the same goods in question. It is also important to analyse an industry's ability to compete with as well as attract and secure scarce resources from other industries. The technique used to measure the competitiveness of the cocoa industry of Cameroon in this paper is the Relative Trade Advantage (RTA) of Vollrath (1991); an extension of the revealed comparative advantage RCA of Balassa (1965).

Relative Trade Advantage (RTA) calculations

The RTA attempts to describe a country's share of the world market on one commodity relative to its share of all traded goods taking into account both imports and exports. This measure is superior to the RCA, and takes into account both imports and exports. It is calculated as the difference between relative export advantage (RXA) (Balassa index), and relative import advantage (RMA).

The RTA index is expressed as:

$$\begin{aligned}
 (1) \quad RTA_{ij} &= RXA_{ij} - RMA_{ij} \quad \text{-----} 1 \\
 (2) \quad RXA_{ij} &= \left(\frac{X_{ij}}{\sum_{k, k \neq i} X_{kj}} \right) \left(\frac{\sum_{k, k \neq i} X_{k1}}{\sum_{k, k \neq j} X_{k1}} \right) \text{-----} 2 \\
 (3) \quad RMA_{ij} &= \left(\frac{M_{ij}}{\sum_{k, k \neq i} M_{kj}} \right) \left(\frac{\sum_{k, k \neq i} M_{k1}}{\sum_{k, k \neq j} M_{k1}} \right) \text{-----} 3
 \end{aligned}$$

Where X = exports, M = imports, subscripts *i* and *k* denote the product categories, and *j* and 1 denote the country categories. The numerator in equations 2 and 3 equals a country's export value (imports) of a particular product category relative to the export value (imports) of this product from all countries except for the country in consideration. The denominator reveals the exports (imports) of all products except for the commodity in consideration from the respective country as a percentage of all other countries' exports (imports) of all other products. RTA values > 0 imply competitive advantage while RTA < 0 indicates competitive disadvantage and RTA = 0 means marginally competitive. The higher the value, the more competitive the country is and the lower the value, the less competitive. These

boundaries are consistent with theoretical interpretation and appropriate for comparison of competitiveness between countries (Bojnec and Fertő, 2014).

3.4 Determining the Key Success and Constraining Factors of the Industry

The RTA measurement established a quantitative trend of the past and present competitiveness status of the industry. It was vital identify and understand the various success and constraining factors of competitiveness in order to establish measures through which the industry. The qualitative method developed by Michael Porter (1990) (Porter's Diamond) to analyse competitiveness was adapted derive the determinants of competitive performance in cocoa industry. Porter identified six major determinants; four major and two exogenous which he described as the 'building blocks' of competitiveness for any given industry. These determinants interact and make up a system "diamond" that differs from place to place reason why some firms (or industries) succeed in a particular location where others do not. The interaction or interdependence of the determinants is such that weaknesses in any one are complemented by the strengths in the other (Porter, 1990). The interrelationship between these determinants and factors will be tested within the Cameroonian cocoa industry to determine if the industry is consistent with the views of Porter.

Executive opinions from various actors along the cocoa value chain about the factors that influence the competitive performance of the industry was obtained by means of questionnaires interviews- *the Cocoa Executive Survey (CES)* backed-up with telephonic discussions with various experts in the industry who are involved in strategic decision-making.

The World Competitiveness Yearbook (IMD, 2005) used a similar process of combining quantitative data and RTA with qualitative analysis and opinion survey data to analyse competitiveness. Both measures provide different but complementary views on the issue of competitiveness, and will contribute to the establishment of a comprehensive statement and better understanding of the competitiveness of the cocoa industry of Cameroon.

4. Competitiveness Status of the Cameroonian Cocoa Industry

4.1 Data

To obtain RTA measurements of the competitiveness of the cocoa industry of Cameroon in comparison with other cocoa producing countries, trade data was sourced from two well established trade databases; the International Trade Centre (ITC, 2016) available (<http://www.trademap.org>) and the Food and Agricultural Organisation (FAO, 2016) available on (<http://www.fao.org>). The ITC

provides trade data for about 5300 products from the year 2001 to date while the FAO provides data for only agricultural products from as far as 1961 to 2016.

4.2 Results and Discussions

4.2.1 The Cocoa Industry Competitive Performance (Cocoa Competitiveness Index CCI)

Table 1 and 2 show the trends in the RTA values of the competitiveness performance of the Cameroonian cocoa industry based on data from FAOSTAT (FAO, 2016) and Trademap (ITC, 2016) respectively. These data sets represent the agriculture based competitiveness index and the multi-sector based competitiveness index respectively. Results reveal a positive trend in competitiveness of the cocoa industry with all figures having values above zero and ranging from 10-50 for the agriculture based competitiveness (agricultural FAO data base) and from 46 to as high as 204 for the multi-sector based competitiveness (ITC data base)

Table 1: RTA calculations for Cameroon cocoa industry (FAO)

Years	1961	1962	1963	1964	1965	1966	1967	1968	1968	1970	1971	1972
Cam cocoa (FAO)	33.78	37.28	41.83	28.98	31.68	30.93	31.83	32.38	41.25	29.95	33.11	35.13
Years	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Cam cocoa (FAO)	39.67	39.67	40.75	25.76	20.35	25.48	24.88	26.90	30.83	27.58	24.60	24.46
Years	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Cam cocoa (FAO)	16.85	16.07	26.78	29.71	16.11	17.86	16.37	13.44	10.90	12.34	14.07	14.30
Years	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cam cocoa (FAO)	22.14	27.16	17.39	14.90	18.85	27.76	20.44	20.15	21.20	24.04	21.91	40.16
Year	2009	2010	2011	2012	2013							
	49.77	49.40	37.69	29.77	28.13							

Source: Author's own calculations based on data from FAO (2016)

Table 2 RTA calculations for the Cameroon cocoa industry (ITC)

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Cam cocoa (FAO)	46.72	64.99	50.28	55.34	54.70	41.28	33.93	134.94	204.22	91.10	169.61	54.23	52.01	57.27	94.81

Source: Author's own calculations based on data from ITC (2016)

Competitive (RTA > 1), marginal competitive (1 > RTA > -1), not competitive (RTA < -1).

The ITC values in Table 2 are different because cocoa was compared with an economy- wide range of export products (5 300) other than just agricultural exports, as in the FAO (400 agricultural product lines). ITC database describes a more accurate picture of competitive performance as a wider opportunity cost base is accommodated. The higher RTA values from the ITC, as compared to the FAO, are consistent with the findings of Boonzaaier (2015) whose results showed higher RTA competitiveness values for the ITC compared to the FAO for the South African stone fruit industry.

The sustained and high competitiveness values can be attributed to Cameroon being a strong player in the global market, with a large proportion of the total cocoa exports in the global market - ranking it the fifth largest exporter. The fluctuating nature of performance – lowest at RTA = 10.9 in 1993 (FAO); highest at RTA= 49.77 in 2009 (FAO) and 204.77 (ITC,)

4.2.2 Trends in the Competitive Performance of the Cocoa Industry

Trend analysis indicate that the industry exhibits positive competitive advantage although the trend of competitiveness is unstable and tends to fluctuate due to varying quality of Cameroonian cocoa, inter alia many new entrants in to the Cameroon market and a lack of quality control regulations. Four phases of competitiveness were identified as depicted in figure 1.

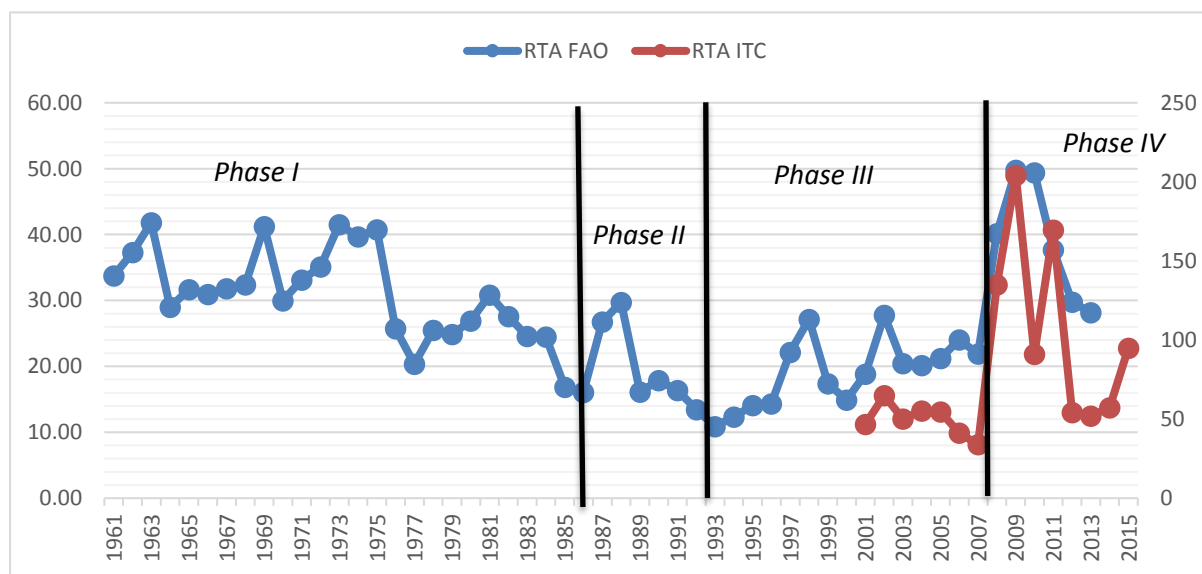


Figure1 : Phases of competitiveness of the Cameroonian cocoa industry

Source: Author’s own construction with data from FAO (2016) and ITC (2016)

Phase I - Centrally regulated period (Post-colonial period - 1961 to 1986): A positive albeit fluctuating and gradually declining competitive performance was experienced during this phase. It marked the post-colonial period and independence of the country when the government took active control of the agricultural sector. A series of five-year development plans as instruments to promote

nation building and economic development were implemented during this phase which ran from 1960-1965, 1966-1971, 1971-1976, 1976-1981 and 1981-1986 respectively (Ndongko, 1974; Amin, 2013; National Human development report, 2013). The economy typically promoted export and industrial crops during this period to earn foreign exchange earnings and contribute to the improvement of rural living conditions. Agricultural production and exports increased during this phase and the economy performed well with agriculture playing a pivotal role from 1961 to the early 1970s making the country highly dependent on agricultural exports of which cocoa topped the list. The state entirely controlled and managed the sector through the distribution of marketing inputs and the creation of agricultural marketing and funding agencies such as the National Product Marketing Board (NPMB), National Fund for Rural Development (FONADER) and the Development Mission for Food Products (MIDEVIV) (National Human development report, 2013). The advent of crude oil exploitation in the early 1970s saw a drop in cocoa competitiveness. The fall was however significant between 1975 and 1977 due to the fuel and dollar crisis. Competitiveness index generally witnessed a drop during this first phase from 33.78 in 1961 to an index of 16.07 in 1986 for RTA (FAO).

Phase II - Economic crises period (1987- 1993): this marked the beginning of the economic crisis period and cocoa market liberalisation. Cameroon experienced an economic recession in 1985 leading to a decline in export earnings from major agricultural crops like cocoa and coffee. The competitive performance of the cocoa industry shows a pronounced decline to a low RTA value of 10.9 after an initial high of 29.7 in 1988. The agricultural sector growth did not only slow down during this period but was highly variable. The economy experienced a drastic reduction in GDP by 6.3% per annum. The sudden drop in competitiveness during this period resulted from the low prices of export crops like cocoa in the international market, distorted agricultural and macro-economic policies, the over-priced US dollar to which exports are tied and corruption to name a few. The consequence of this was the failure of the agricultural credit policy and the collapse of FONADER and a decline in cocoa output at a rate of 1.13%. The structural adjustment loans (SALs) of the International Monetary Fund and the World Bank were introduced to curb these challenges. These policies encouraged the disengagement of the government as the main actor in the cocoa sector, reduction in government and the liberalisation of the agricultural sector through reduction of non-tariff barriers, privatisation and deregulation of prices. Despite the efforts undertaken by the government to strengthen the agricultural sector, production potential remained underutilized. It was therefore necessary for the government to embark on other policies geared towards competitiveness requirements and adapt to external shocks on commodities; thus the implementation of the New Agricultural Policy (Madeley, 1987; Bamou & Masters, 2007; Debrew & Battisti, 2008; Achancho, 2006).

Phase III - Recovering period; the new Agricultural Policy (1994- 2007): The new agricultural policy was introduced during this phase and focused on deregulation and privatization measures to improve

the efficiency of resource allocation, finding more efficient management practices and the privatisation of parastatals. It intended to modernise production equipment, promote and diversify export, develop agricultural product processing and balance supply chains. It encouraged the formation of professional organisations such as the Interprofessional Council for Cocoa and Coffee (CICC) which is an important partner in the development of the cocoa sector, the implementation of new approaches to agricultural extension that make use of research, extension and other agricultural stakeholders and the development of decentralized micro finance systems which could provide funding to the farmers in the rural areas. The overall effect of this policy coined with the 1994 devaluation of the national currency (francs CFA) resulted in increased competitiveness in the domestic sector as well as substantial growth recovery in the cocoa, coffee, rubber and banana sectors. Although increased competitiveness and recovery growth of some sectors such as the cocoa sector was witnessed, the results were below expectations for most food products due to internal market malfunctions that affected the domestic products' competitiveness.

Phase IV - Increased global competition and fluctuating markets (2008 onwards): various projects have been undertaken in the cocoa sector to increase production and overall competitiveness in an ever increasing competitive global market, especially since 2013. The rejection of about 2 000 tons of cocoa beans by the EU and the adverse weather conditions characterised by a prolonged dry season resulted in reduced competitiveness and a drop in cocoa exports in the global market in 2012-2013.

4.2.3 Measuring Competitiveness in the Cameroonian Cocoa Value Chain

This paper is concerned with the competitiveness of the Cameroonian cocoa value chain. RTA measurements were done for the different cocoa value adding processes to determine their levels of competitiveness and identify which of them is more competitive. The results illustrated in figure 2 below reveal that cocoa beans have been the most competitive while chocolate and related products is the least competitive of the value adding processes being uncompetitive for most of the years except the periods 1968 and 1970-1981 during which it was marginally competitive. The low level of competitiveness of the latter is due partly to the low manufacturing capacity and “chocolate making” skills of the country. Cocoa butter is less competitive particularly due to the low butter content of cocoa from Cameroon making it easy to blend with beans from other countries.

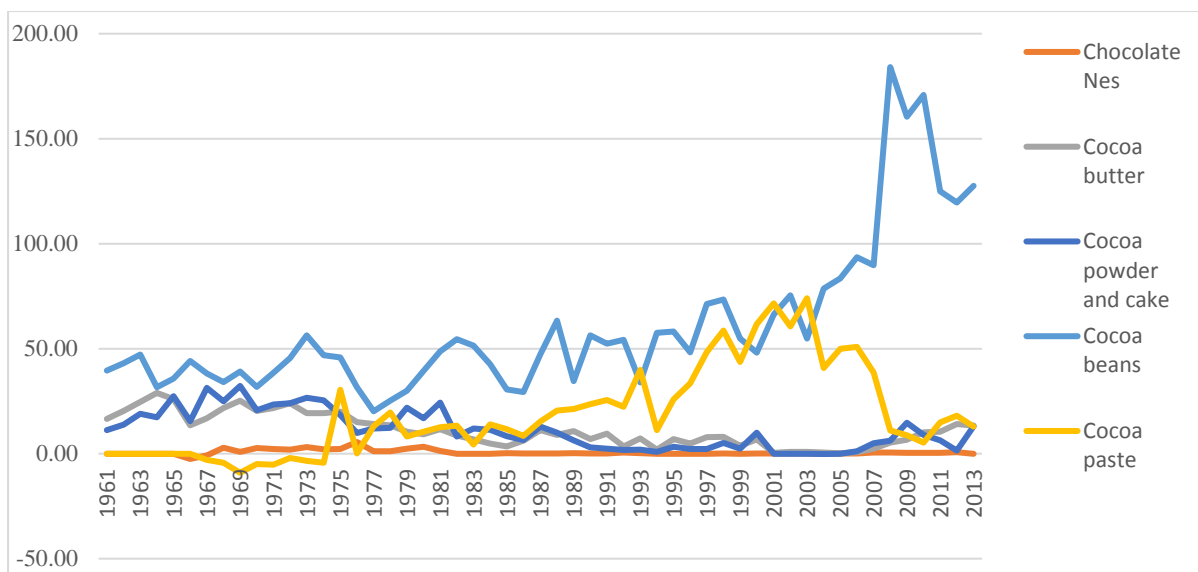


Figure 2: RTA for various value-adding processes

Source: Own calculations from FAO (2016)

The low performance of the chocolate production sector negatively impacts the performance of the Cameroon cocoa industry and will need some improvement for such domestic value adding to be performed in a competitive manner. Strategies geared towards improving the competitiveness of the chocolate value adding processes could lead to an increase in local chocolate trade and thus the overall improvement in the industry's competitiveness.

4.2.4 Comparison of Cameroonian Competitive Performance with other Cocoa Producing Countries.

The RTA technique is the ratio between exports and imports of a particular product of a country to the export and imports of that same product in the world market, comparisons were made between Cameroon and some other cocoa producing countries-benchmarking countries to establish Cameroon's competitiveness position in the international market for cocoa. ITC data was used as this give a more comprehensive picture, in particular as different countries have different economic structures, i.e. when not all competitors are agricultural led economies.

Cote d'Ivoire and Ghana are the two largest producers of cocoa in the world and Cameroon's major competitors. Just like Cameroon, most of the major cocoa producing countries have experienced fluctuations in their performance as shown in figure 3 below. Ghana for example being the largest producer of cocoa in the world has experienced declined over the years since the mid-1960s reaching its lowest in 1983 and then increasing again from the mid-1980s. This decline in production over the years can be attributed to decreasing areas under cultivation and low yields due to the incidence of pests and diseases. The challenging environment in which the Ghanaian cocoa industry operates and factors relating to climate change, social insecurities and economic instability (price shocks) also have

a negative impact on the functioning of the cocoa industry and production levels Monastyrnaya et al. (2016). The general trend shows an increasingly competitive environment since 2013.

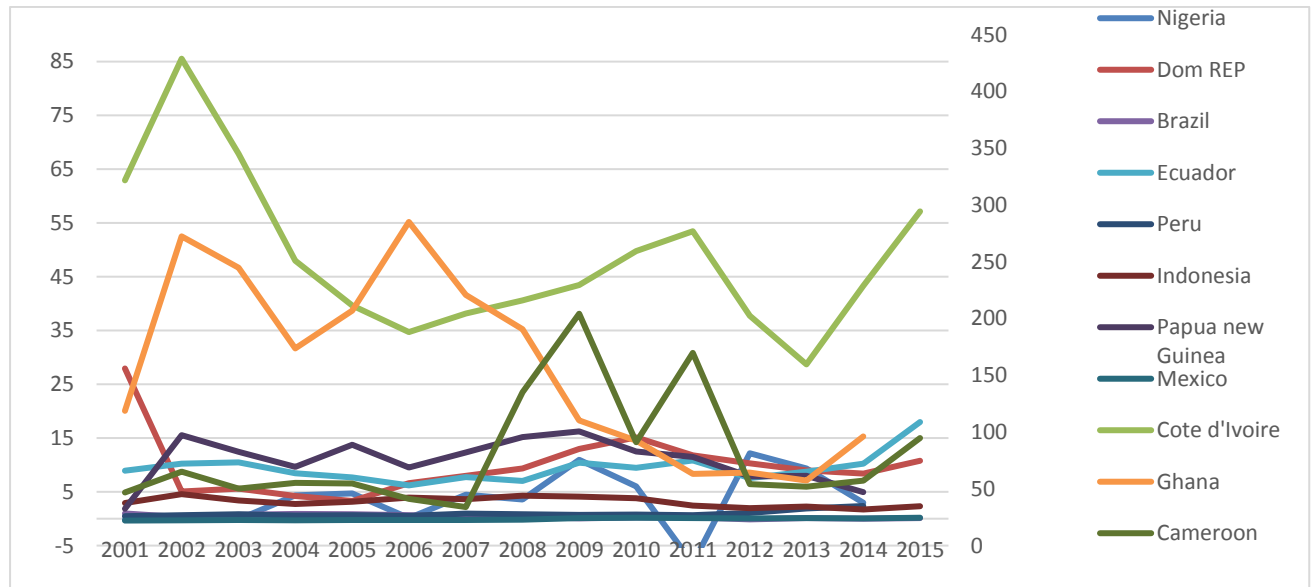


Figure 3: Comparison of Cameroon with other major cocoa producing countries
 Right axis indicates RTA values for Cameroon, Cote d'Ivoire and Ghana; the rest on the left axis
 Source: Own calculations from ITC (2016) data

5. Analysing the competitive performance of the Cameroonian cocoa industry

5.1 Cocoa Executive Survey (step 3)

The above analysis on competitiveness relation to trade values reveal that the cocoa industry of Cameroon is performing at a high, sustained but fluctuating level of competitiveness and can aspire to improve its performance. Identifying the factors responsible for such competitive performance was done by means of the cocoa executive survey (CES). The CES focused at the industry level whereby views and opinions of various chain actors and experts were requested to give their views and perceptions on industry performance by identifying and systematically rating the impact of various factors on a scale ranging from most constraining (zero) to most enhancing (five). Sixty-five usable responses from a sample size of 150 were used for the analysis. Key industry stakeholders – producers, consultants, exporters, processors and service providers and advisors participated in the survey. 72 factors were identified to influence the competitive performance of the Cameroonian cocoa industry.

A bench-marking rank of 2.5 was considered, where factors ranked above 2.5 were considered enhancing while those ranking below 2.5 were constraining.

5.2 Factors influencing the Competitive Performance of the Cocoa Industry

Results from the survey revealed that 55.6% of the factors identified were constraining while 44.4% were enhancing. This indicates that stakeholders in general do not view the environment as enhancing despite the relatively high competitive performance measurement for the cocoa industry. The opinions of the various stakeholders in the value chain were further considered through a cluster analysis.

Cluster 1 and Cluster 2 (refer to section 3 pp 5). The **General Industry** refers to the responses of all the stakeholders irrespective of their value chain positions. The most critical factors identified by the chain actors as influencing the competitiveness of the Cameroonian cocoa industry are presented in table 3.

Table 3: Top ten constraining and enhancing factors of competitiveness

Top 10 enhancing factors	Impact rating	Top 10 constraining factors	Impact rating
Competitiveness in the international market	4.5	Transaction cost	1.1
Size of the international market	4.1	Obtaining short-term credit	1.4
Entry of new local competitors	4.0	Presence of private funded research	1.5
Location's suitability for cocoa	3.8	Price/exchange rate fluctuations	1.6
Competency of extension workers	3.7	General infrastructure	1.6
Local market competition	3.6	Impact of corruption on competitiveness	1.7
Cameroon agricultural policy	3.5	Obtaining long-term credit	1.7
Availability of government-funded research	3.5	Impact of international events on competitiveness	1.7
International cocoa quality	3.3	Impact of climate	1.8
Impact of seasonality	3.3	Adaptability of local consumers to new products	1.8

Source: Own calculations from SPSS software (2016); CES (2016)

*Rating scores out of 5 Impact ratings

*(1=Most constraining; ...; 2.5=Neutral; ...; 5=Most enhancing)

Factors with the most positive influence on the competitive performance of the industry are: international market competitiveness,

- International market size
- Entry of new local competitors,
- Location's suitability for cocoa production
- Competency of extension workers

- Cameroon's agricultural policy
- Presence of government funded research institutions
- International cocoa quality
- Impact of seasonality.

The firm and industry can handle most of the enhancing factors with the exception of the size of the international market and standards for international cocoa quality. To maintain and improve on the competitive performance of the industry, it is vital that these factors be regularly monitored and promoted within the industry's control.

At the cluster level, five enhancing factors were enhancing to both clusters while the other five were particular to the individual clusters

The major constraining factors to the success of the industry include

- transaction cost,
- obtaining short-term credit,
- presence of privately funded research institutions,
- price and exchange rate fluctuations,
- general infrastructure, corruption,
- obtaining long-term credit,
- impact of international events, climate impact
- Adaptability of local consumers to new products and processes.

These factors can generally not be handled by a single firm but are manageable through industry action. There is therefore the need for increased coordination and collaboration at the inter-industry as well as industry-government level.

On the constraining side, there is a low level of alignment with only three factors similar to both clusters. The similar constraining and enhancing factors between the clusters have slightly different ratings indicating a medium level of alignment along the cocoa value chain and opportunities for improved collaboration between the actors. Improvement of the competitive performance of the general industry will require the development of strong alignment in the value chain. This concurs with the views of Webber & Labaste (2010) that gaining new markets without improving the business environment and competitiveness will result in low-value products.

5.3 Determinants of Competitiveness (the Porter's Diamond analysis) –step 4

This step involves clustering/grouping the 72 factors into six major determinants of competitiveness of the application of the Porter Diamond model (Porter, 1990; 1998). A mean score for all the factors under the major determinants was obtained. The six main determinants of competitiveness according

to the Porter diamond framework are all appropriate to determine the underlying forces driving competitiveness in the trade orientated cocoa industry:

- *Factor conditions*– this refers to the industry’s natural endowment of factors of production necessary to compete in a given industry. These factors which can either be inherited e.g. climate, unskilled labour or created (advanced factors) i.e. skilled labour, or they can be generalised or specialised; infrastructure.
- *Demand conditions*– the prevailing domestic conditions necessary to sustain competitiveness such as domestic demand composition, size and sophistication of domestic market.
- *Related and supporting industries*: the presence or absence in the nation of supplier industries and related industries that is internationally competitive.
- *Firm strategy, structure and rivalry*: the condition in the nation governing how companies are created, organised and managed and the nature of domestic rivalry.
- *The role of government*: The role of government is best view in terms of its influence on the four determinants of competitiveness rather than as a separate determinant. Government plays an important role, if not the most important role in international competitiveness. Government can influence each of the above determinants either positively or negatively
- *The role of chance*: Chance events are occurrences that have little to do with circumstances in a nation and are often outside the power of firms or industry (and often the national government) to influence

5.3.1 Findings

Four of the determinants were observed to enhance the competitive performance of the industry; having scores > 2.5. Firm strategy, structure and rivalry is the only determinant with a score higher than three (3) thus the most enhancing determinant. Related and supporting industries, government support and market conditions registered scores between 2.5 and 2.9. Production factor conditions (CES=2.28) and chance factors (CES =2.22) had the least positive effect on the industry’s performance. This implies that the cocoa industry of Cameroon is operating in a “mixed” supportive environment generally enhancing competitive performance.

An analysis of the factors within the Porter diamond determinants

The above analysis gives a general view of the determinants influencing the industry’s current performance. A clearer and more accurate picture of the industry’s current state of affairs requires detailed analysis of all the 72 factors that affect the industry’s performance.

Production factor conditions are basic to the production process throughout the value chain. The CES identified twenty-three production factors and stakeholders’ ratings revealed that 30.4% of the production factors were enhancing while the rest were constraining to the industry’s competitive

performance. The location's suitability for cocoa operations was identified as the most enhancing factor of competitiveness rating 3.8. Availability of local labour (3.2); and the quality of work performed by skilled labour (3.1) were the next two most enhancing factors of competitiveness. Transaction costs (1.1), ability for cocoa operators to obtain short-term credit (1.4) and the general weak state of infrastructure (1.6) which in turn increases costs substantially and especially the road/transportation network were the most critical factors that hindered the performance of the industry.

Under the demand and market factor determinant, five of the eight identified factors were enhancing while the other three were constraining to the industry's performance. The size of the international market (4.1), the quality of Cameroon cocoa in the international market (3.31) and seasonality of Cameroonian cocoa (3.3) are the three most enhancing factors of competitiveness under this determinant. The most constraining factors of competitiveness on the other hand include the ability of farmers and consumers to adapt to new products received the lowest rating by the stakeholders (1.7). Access to new markets was the second most constraining factor and received a rating of 2.08 while local market growth was considered the third most constraining factor rating 2.3.

Twelve factors were identified under the related and supporting industries determinant three of which were enhancing while the rest were constraining to competitiveness at the industry level. The competency of extension officers (3.7), influence of telecommunication services(3.46) and the presence of government funded research institutions(3.2) were the only enhancing factors to competitiveness. On the constraining side, lack of presence of private funded research institutions was identified as the most constraining factor and received a CES rating of 1.5. The impact of financial services was identified as the second most constraining factor and is in conjunction with access to short- and long-term capital identified under the production factor conditions. The availability of reliable transport rated 2.06 in CES was the third most constraining factor.

Firm strategy, structure and rivalry determinant had the most positive/enhancing effect on the performance of the industry. Nine factors were identified under this determinant eight of which were enhancing. The factor with the most enhancing effect was international market competition rating 4.6. Market competition refers to an industry's ability to compete in the international market. The entry of local competitors into the market (4.2) and local market competition (3.06) were the two other most enhancing factors. The flow of information from primary input supplies was the only factor observed to be marginally constraining at the industry level (2.49) and in cluster 1 (2.45) but was however seen to enhance competitiveness for cluster 2 (3.5).

The government plays a vital role in the Cameroonian cocoa industry through activities ranging from support; primarily for production, provision of extension and training services and export support, including standardization and certification services. The influence of the agricultural policy of Cameroon was perceived as the most enhancing factor under the government policy and support

determinant rating 3.5 while obeying regulatory standards (3.3) was the second most enhancing factors respectively. On the constraining side, perceived corruption and political opportunism had a strong (negative) impact on competitiveness (CES 1.7). Stakeholders also expressed their grievances towards the trustworthiness of politicians (CES 1.9) and the taxation system of Cameroon (2) as two other critical factors that hinder the competitive performance of the cocoa industry.

The chance or opportunity determinant had the least positive influence on the industry’s performance. Economic growth and development and the ability of the industry to utilise adverse weather conditions to its advantage were perceived as the only two factors under this determinant that influence competitiveness in a positive way receiving ratings of 3.17 and 2.55 respectively. Price and exchange rate fluctuations (1.60), the impact of international events (1.74) and current price and exchange rate (1.80) were considered the most negative factors to the competitive performance of the industry. The relatively low scores in the chance factor determinant reflect a constraining and uncertain environment in which the Cameroon cocoa industry operates and needs to be considered at the strategic planning phase.

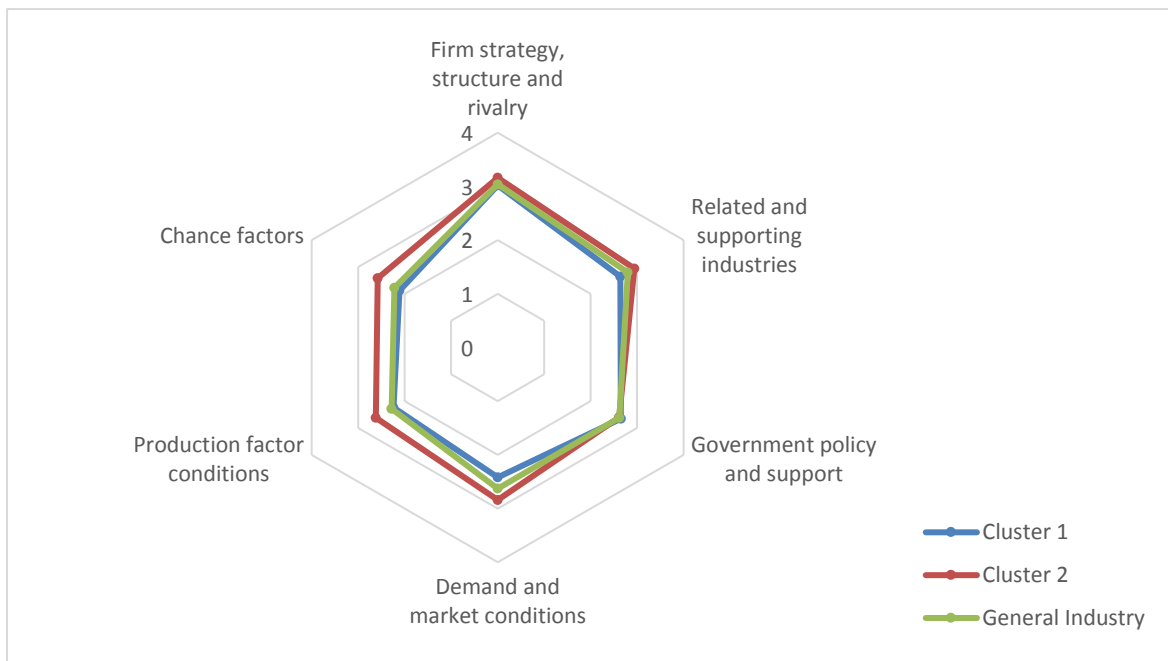


Figure 4: Major determinants of competitive performance of the Cameroonian cocoa industry and respective clusters.

Source: CES (2016)

Analysing the relationship between the Porter diamond determinants revealed that some of the determinants were observed to operate in a coordinated or interrelated manner in influencing the industry’s performance while others were more independent.

The determinants related and supporting industries and firm strategy, structure and rivalry for example were observed to be independent of each other in influencing the industry's performance. This may imply that supply chain is less efficient with no relationship between firm level strategies and those affecting supporting industries i.e. that these two value chain aspects operate in isolation while the one actually requires the other. There is restricted alignment in the cocoa value chain. Improvement of the performance will require a higher degree of alignment and coordination in the value chain. Chance factor and production conditions determinants were also observed to be independent of each other. This means that a chance factor such as exchange rate fluctuations does not directly affect production activity decisions in the short run, confirming the long-term nature of cocoa production being linked to fixed investments and capital infrastructure with relatively limited short-run influences from fluctuating interest rates, exchange rates and related occurrences.

Interrelationships were observed between some of the determinants e.g. chance factors and demand and market conditions; chance and government support; production conditions and demand and market conditions; government support and related and supporting industries. This implies that any efforts to change the impact of a particular determinant must be related to a possible influence of related determinants i.e. network interrelatedness. From this analysis, it is clear that an integrated strategy, both at value chain and networking levels is required in the Cameroon cocoa industry.

6. Conclusion

Cameroon is the fifth largest producer of cocoa in the world and the third largest in Africa. The prominent position enjoyed in the world market and the important role played by cocoa in the country's economy prompted an analysis to investigate the competitive performance of the industry. The application of the five-step analytical framework was used to determine the competitive performance of the industry. Competitiveness was defined appropriately relative to the cocoa industry of Cameroon. Results established that the cocoa industry of Cameroon highly competitive in the international market but fluctuating. Comparisons of RTA ratings of the different value adding processes in the cocoa chain reveal that chocolate and related products are the least competitive in the chain. Improvement in their performance will therefore lead to an overall improvement in industry competitiveness.

Through the CES, the various factors influencing the competitive performance of the industry were identified and grouped under the major Porter Diamond determinants. Four of the six major determinants had enhancing influences on the performance of the industry. The findings validate the hypothesis that the competitive performance of the Cameroonian cocoa industry was not influenced by only one, dominant factor but rather a set of factors related to demand conditions, rival industries and exchange rate fluctuations.

Value-chain analysis revealed that although the ratings of the stakeholders operating in the primary production of cocoa and those involved in manufacturing and exporting sectors showed similar patterns in their ratings hence consensus on relevant factors and determinants, operators on the production level generally gave lower ratings than their counterparts. This means that stakeholders in the manufacturing cluster were more positive about the industry's performance. Such perception can be related to their position of more direct exposure to final markets, while agribusiness cluster operators are more exposed to production risks.

From the analyses and findings of the research, some recommendations were made for further studies and include market diversification, comprehensive value chain analysis and the expansion of the study scope.

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