

Determinants of Competitiveness in the South African Citrus Fruit Industry

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Abstract

This paper analyses the determinants of competitiveness in the South African citrus fruit industry. It uses Michael Porter's competitive diamond framework to determine and analyse the factors influencing the performance and competitive success of the domestic citrus fruit industry. A structured questionnaire was used to collect both qualitative and quantitative data of expert views and opinions from several key industry stakeholders. The paper identified the availability of skilled employees, quality of unskilled labour, cost of doing business in the industry, services from financial institution, electricity supply, land reform and some other government policies such as trade policy, labour policy, BEE policy and tax system as the major determinants impeding the competitive success of the domestic industry. The list also included the current climatic conditions, high incidences of HIV/AIDS and crime, economic stability and the cost of technology and infrastructure in the industry. Despite the challenges mentioned above, the quality of skilled labour, general level of development and quality of infrastructure and technology in the industry, quality of soils, the availability of scientific research institutions and the collaboration of the industry with these institutions, availability and quality of local suppliers of primary inputs, and market information flow were found to have a positive influence on the competitive success of the industry.

Keywords: citrus fruit industry, competitive success, Porter's competitive diamond model

1. Introduction

The South African citrus fruit producers and processors are facing increasing competition in domestic and international markets. With the domestic industry largely deregulated, citrus fruit farmers and processors have to position themselves to be competitive in the global market within a less controlled and so-called free market global trading environment. This is even more important in the light of the fact that South Africa's foreign competitors have high levels of government subsidies and protection measures, putting the domestic producers and processors at a definite disadvantage. The current trends relating to the trade liberalisation, advances in information technology, consumer preferences, changing regulatory and business environments and improved logistics are also exerting pressure on the domestic industry to become more competitive. In light of the above, this study intends to investigate the determinants of competitiveness in the citrus fruit industry. The primary objective is, therefore, to investigate the determinants of competitiveness of the South African citrus fruit industry. The rest of the paper is organised as follows: section 2 reviews the domestic industry at a glance. It is followed by section 3 which discusses briefly the method and data used in the analysis. Section 4 applies the Porter's methodology to give the empirical determinants of factors affecting the competitiveness of the domestic industry. Finally, conclusion and recommendations to improve and sustain the competitiveness in the industry are proposed.

1.1 The South African Citrus Fruit Industry at a Glance

The citrus fruit industry is an important contributor to the South African economy. In terms of gross value, it is the third largest horticultural industry after the deciduous fruits and vegetables industries. During the 2011/12 production season, it contributed just over R7.7 billion (4.7 percent) to the total gross value of South African agricultural production (DAFF, 2014). The industry is a significant foreign currency earner and this contributes considerably to the country's GDP. Export of citrus fruit is an important component of the agricultural exports which contributes, on average, around 27 percent of the total agricultural exports. Though there has been some

significant reduction in employment since the deregulation of the whole fruit sector in 1996, the citrus fruit industry is still a significant employer especially during peak periods like harvesting. It is labour intensive and employs approximately 100,000 permanent farm workers, with large number of workers in picking and packing houses. The figure for seasonal farm workers is unknown as the organisation of farm workers has been proven extremely difficult in South Africa (Mather, 1999). An unspecified number of people are also employed throughout the entire supply chain services, such as transport, port handling and related services. It is, therefore, estimated that over a million households depend on the citrus fruit industry (DAFF, 2011).

The industry is characterised by distinct heterogeneity of the citrus fruit producers, ranging from large, highly commercial growers to resource poorer small-scale growers. This fragmentation results in a clear market segmentation (export market, supermarkets, local retailers, and local markets) along the farm size groups. It is estimated that there are around 2,200 small farmers that supply the local market. Production of citrus fruits in South Africa is confined to specific climatic regions. The most active citrus fruits production areas are Limpopo (contributing 39.3 percent of the total area planted to citrus in South Africa), Eastern Cape (23.1 percent share), Mpumalanga (15.1 percent) and Western Cape (14.8 percent share). Smaller portions are also grown in the KwaZulu-Natal and Northern Cape Province. Mpumalanga, Limpopo and KwaZulu-Natal climates are warmer and better suited to the cultivation of grapefruit and Valencia oranges. The Western Cape and Eastern Cape provinces, on the other hand, are considered to be cooler citrus growing areas and production is focused on Navel oranges, lemons and soft citrus fruits. Figure 1 below illustrates the distribution of the total citrus fruit production among different market segments. The largest portion is normally destined for the export market with over two-thirds of the production, followed by the processing segment (22 percent) of the industry. The local market takes, on average, a small share of only 7 percent of total production. Compared to other citrus fruit, most citrus fruits destined to processing industries are oranges (65 percent), which are converted into orange juice and can be presented in different forms such as frozen, concentrate and freshly- squeezed. They are followed by grapefruits, which account for 20 percent of the total citrus fruits destined for the processing industry.

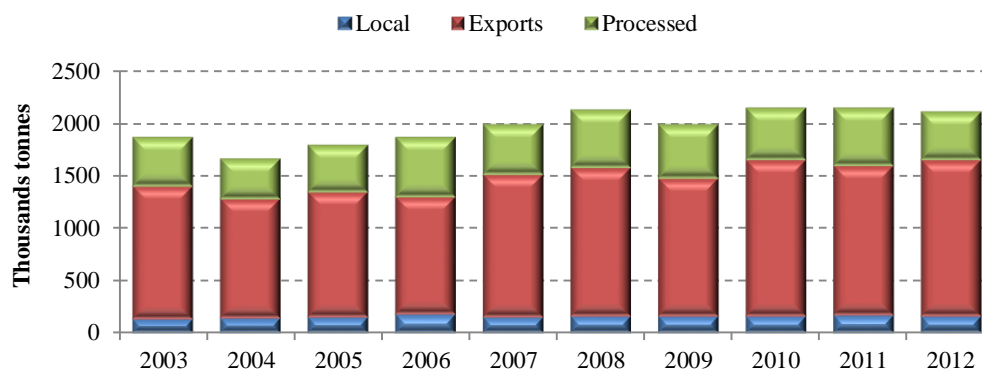


Figure 1. Distribution of South African orange production

Source: Own calculations based on CGA database (2013).

2. Methods

2.1 Methods

This study made use of the Porter's (1990) competitive diamond methodology to gather key success factors and the constraints impacting on the competitive success of the domestic citrus fruit industry. This model allows one to identify and analyse the structure of the industry and to point out its strengths and weaknesses. It is based on the perceptions of industry leaders on issues influencing the competitiveness. It evaluates the competitiveness of all different players on the value chain as the sample is drawn from different stakeholders, such as farmers, processors, industry labour union and industry associations. Determinants of competitiveness were identified by using survey on the views and opinions of these stakeholders. This model has been used broadly by several researchers to analyse the competitive success of numerous agricultural sub-sectors in South Africa (Edwards & Schoer, 2001; Esterhuizen & Van Rooyen, 1999; Esterhuizen et al., 2000; Esterhuizen et al., 2001; Valentine & Kransnit, 2000; Mashabela, 2007; Van Rooyen et al., 2011; Ndou & Obi, 2011). The analysis from Ndou and Obi

(2011) who also looked at the determinants of competitiveness in the citrus fruit industry established that the foreign market support systems, non-tariff technical barriers to trade (TBT), trade specifications, cost of production, access to scientific research, problems of citrus diseases, worker skills, literacy and the availability of skilled employees are among the major factors negatively affecting the competitiveness of the domestic industry, more especially the smallholder producers. Porter (1998) argues that it is not so much comparative advantage, factor proportions or technologies that determine what countries are more competitive in certain industries compared to other countries, but the presence or absence of particular attributes in individual countries that influence the industry's development. Figure 2 below illustrates Porter (1990)'s determinants of competitive advantage. Competitiveness lies in six broad criteria or attributes that shape the environment in which firms or industries compete. These are:

- Factor conditions

Factor conditions are advantageous factors of production in certain countries that give industries a competitive edge over their competitors. These are created factors of production, such as skilled labour (literacy levels of workers and quality of labour), infrastructure (e.g. communication system and transportation infrastructure), technology (e.g. scientific research and availability of technology) and levels of production costs (e.g. prices of diesel, labour, machinery and pesticides) necessary to compete in a given industry. The fact that the country has good non-key factors, such as unskilled labour and raw materials, does not generate sustained competitive advantage, as these can be obtained by any industry. However, specialised key factors, such as skilled labour, capital and infrastructure lead to competitive advantage since these factors are more difficult to duplicate.

- Demand conditions

These include domestic demand composition, demand size and internationalisation of the domestic demand. They are important factors in helping to create the competitive success. For example, the sophisticated domestic market can pressurise the company or industry to sell superior products. The fact that markets demand high quality products and close proximity enables companies or industries to better understand the needs and wishes of its customers.

- Related and supporting industries

This involves the presence or absence of the domestic suppliers and related industries that are internationally competitive. Porter (1990) argues that a set of strong related and supporting industries is important to the competitiveness of firms or industries. When local supporting industries and suppliers are competitive, local companies or industries are potentially likely to be more cost efficient, thus resulting in them becoming competitive as well. The related and supporting industries can include research institutions, financial institutions, transportation companies, electricity suppliers, agricultural inputs and packaging companies.

- Firm strategy, structure and rivalry

These involve culture, structure, managerial skills, pricing strategy, buyers and suppliers' market power, threats of new industry and substitutes. These are conditions governing how companies or industries are created, organised and managed, and the nature of the domestic rivalry. If the competitiveness is very strong in the domestic market, the industry may develop skills that can be used as competitive advantage internationally.

- Government support and policy

Government plays an important role in the international competitive success. It can influence each of the above determinants either positively or negatively through its policies (such as trade policy, land reform policy, labour policy, environment policy, financial and tax policy) and operational capacity (e.g. funding and subsidies). Porter (1990) argues that government, as a determinant of competitiveness, must be viewed apart from the above four determinants.

- Role of chance

These are factors that happen beyond the power of the industry and often the national government. They are events that have little to do with circumstances in the country and are often largely outside the power of companies and often the national government to influence. They can either harm or benefit the industry's competitive position. Such events include wars, political decisions by foreign governments, large increases in demand, shifts in world financial markets and exchange rates, discontinuity of technology or major technological breakthroughs or inventions, crime and diseases like HIV/AIDS.

A 7 point likert scale was used to indicate the degree to which each of the determinant factors affected the competitive success or performance of the industry. Scores ranging between 0 and 7 against each determinant

factor were awarded based on simple arithmetic means calculated from the responses of the industry's stakeholders sampled with a higher score (7) indicating a more enhancing factor, and similarly a lower score (1) denoting the more constraining a factor is for the competitiveness of the industry.

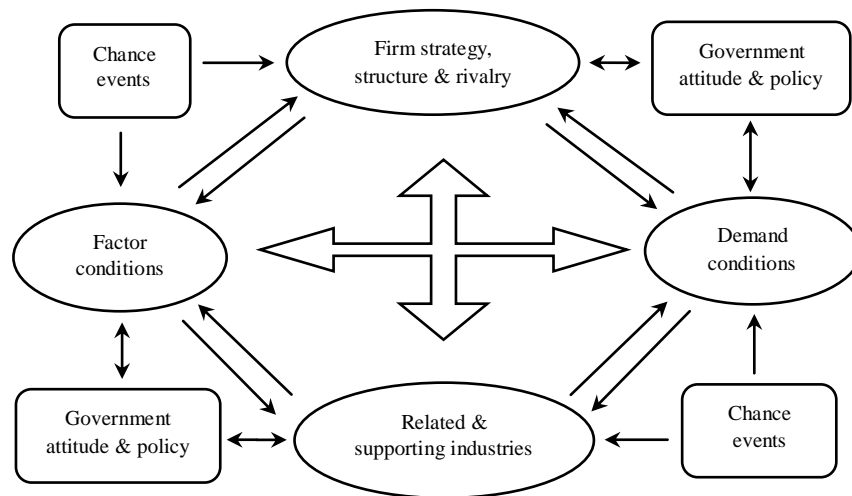


Figure 2. Porter's diamond of competitive advantage

Source: Porter (1990).

2.2 Data Used

The study made use of both primary and secondary data. The primary data was collected from several industry stakeholders, including producers, processors and industry associations, by the use of structured questionnaires, conducting in-depth interviews, and in some cases it was collected telephonically. The respondents were asked to fill in the questionnaire, which was developed using Porter's model, to answer questions related to the competitiveness of the domestic industry. Stratified random sampling of available and willing industry stakeholders was undertaken in the main citrus fruit producing areas of Mpumalanga, Limpopo, KwaZulu-Natal, Eastern Cape and Western Cape provinces.

A total of eighty (sample size) questionnaires were sent to different organisations, including producers, processors, industry experts and industry's associations. Only thirty two questionnaires were returned, representing an acceptable response rate of 40 percent. This sample size was representative enough to draw somehow precise findings and conclusions on the study. Excel spread-sheet programme was developed for capturing of data from different respondents.

3. Results and Discussion

This section provides the empirical determination of factors affecting the competitiveness of the South African citrus fruit industry using the Porter's methodology. Each of the determinants was analysed separately. The main features are discussed below:

3.1 Factor Conditions

3.1.1 Labour Conditions

The general perception expressed by respondents on labour conditions and the average ratings of respondents' perception are presented in Tables 1a and 1b below. The results suggest that the availability of skilled labour is a key challenge facing the industry while unskilled labour is available in abundance. It is not surprising that there is abundance of unskilled labour because South Africa is characterised by high levels of unemployment. At the same time, unskilled economic refugees are pouring in from neighbouring countries looking for a better life in South Africa. Majority of respondents concurred that it is easy to obtain unskilled labour in the industry, with around 43.8 percent of the respondents agreeing wholeheartedly that it is easy to obtain unskilled labour in South Africa. This perception was confirmed by an average rating of 6.2, which strongly indicates that unskilled labour is easy to obtain in the industry.

Although the industry has a shortage of skilled labour, a large number of respondents believe that the quality of

skilled labour is of high standard and amongst the best in the world. About 21.9 percent of the respondents agree wholeheartedly that the quality of skilled labour in the industry is amongst the best in the world, while 9.4 percent were indifferent as to whether the quality of skilled labour is amongst the best in the world or is not of a very high quality. The average rating on this variable was 4.4, an indication that the quality of skilled labour positively impacts the competitive success of the industry.

The cost of unskilled labour was viewed to be a constraint to the industry's competitive success with an average score of 2.6. In theory, high supply of unskilled labour would make this affordable. However, majority of respondents (34.4 percent) agree wholeheartedly that unskilled labour in the industry is too costly. This is probably due to the labour laws such as minimum wages that have been set for all sectors of the economy, including the agriculture sector and its downstream industries such as the agro-processing sector.

Table 1a. Percentage ratings of the perceptions on labour conditions

Labour conditions	Agree wholeheartedly with left-hand side	Largely agree with left-hand side	Agree somewhat with left-hand side	Indifferent between the two answers	Agree somewhat with right-hand side	Largely agree with right-hand side	Agree wholeheartedly with right-hand side
Availability of skilled labour in the industry	40.6%	34.4%	9.4%	3.1%	0.0%	9.4%	3.1%
Quality of skilled labour in the industry	12.5%	21.9%	12.5%	9.4%	6.3%	15.6%	21.9%
Cost of skilled labour in the industry	28.1%	25.0%	12.5%	3.1%	6.3%	9.4%	15.6%
Availability of unskilled labour in the industry	0.0%	6.3%	6.3%	0.0%	18.8%	25.0%	43.8%
Quality of unskilled labour in the industry	34.4%	28.1%	15.6%	3.1%	9.4%	6.3%	3.1%
Cost of unskilled labour in the industry	34.4%	31.3%	21.9%	0.0%	0.0%	3.1%	9.4%

Source: Own calculations based on the survey.

Table 1b. Labour conditions ratings

Labour conditions	Average rating according to the Porter determinants
Availability of skilled labour in the industry	2.4
Quality of skilled labour in the industry	4.4
Cost of skilled labour in the industry	3.5
Availability of unskilled labour in the industry	6.2
Quality of unskilled labour in the industry	2.7
Cost of unskilled labour in the industry	2.6

Source: Own calculations based on the survey.

3.1.2 Cost of Doing Business

Cost of doing business is an important dimension of the factor conditions shaping the competitive success of the industry. Countries with low costs of doing business are considered to be business friendly and are likely to attract investors and to have industries that have a better chance of being and becoming profitable and competitive.

South Africa has one of the easy business environments in the world. This is highlighted by its high ranking in the 2014 World Bank's Ease of Doing Business report. According to this report, South Africa ranks 41st position out of 189 countries for its business environment with respect to the general ease of doing business. Despite this, about 25 percent of the respondents agree wholeheartedly that the cost of doing business in the industry is

extremely high, while another 25 percent largely agree and 34.4 percent agree somewhat that the cost of doing business is extremely high. An average rating of 2.9 for this determinant factor illustrates that the cost of doing business was viewed by many to be high and a constraint to the industry's competitive success. This indicates that a large part of industry stakeholders are gravely concerned about this phenomenon.

The industry requires an acceptable standard of infrastructure such as roads, telecommunications, water supply and port facilities for efficient and proper functioning of their businesses. Over three quarters of the respondents consider the state of general infrastructure in the industry to be well developed, efficient and amongst the best in the world. This determinant factor recorded an average rating of 5.5, an indication that it positively affects the competitive success of the industry. However, most respondents expressed concerns regarding the cost of using the infrastructure. A total 21.9 percent of the respondents agree wholeheartedly that the cost of infrastructure is extremely high in the industry. With an average rating of 3, the respondents rated the cost of using the infrastructure as a constraint to the industry's competitive success. The challenge facing the industry is, therefore, not the state of general infrastructure but rather the cost of using it.

Table 2a. Percentage ratings of the perceptions on cost of doing business and state of infrastructure

Cost of doing business and state of infrastructure	Agree wholeheartedly with left-hand side	Largely agree with left-hand side	Agree somewhat with left-hand side	Indifferent between the two answers	Agree somewhat with right-hand side	Largely agree with right-hand side	Agree wholeheartedly with right-hand side
Cost of doing business in the industry	25.0%	25.0%	34.4%	0.0%	3.1%	9.4%	3.1%
Level of development of general infrastructure in the industry	6.3%	3.1%	9.4%	6.3%	21.9%	34.4%	18.8%
Cost of using infrastructure in the industry	21.9%	25.0%	34.4%	0.0%	9.4%	6.3%	3.1%

Source: Own calculations based on the survey.

Table 2b. Cost of doing business and state of infrastructure ratings

Cost of doing business and state of infrastructure	Average rating according to the Porter determinants
Cost of doing business in the industry	2.9
Level of development of general infrastructure in the industry	5.5
Cost of using infrastructure in the industry	3.0

Source: Own calculations based on the survey.

3.1.3 Technology

Tables 3a and 3b below provide the perception of respondents and average rating of two variables, namely the quality of technology and the cost of quality technology for the citrus fruit industry. These variables average ratings were 5.8 and 3.1, respectively. The average rate of quality of technology indicates that this factor condition is an enhancement to the industry's competitive success. A quarter of the respondents agree wholeheartedly that the quality of technology is amongst the best in the world, whilst 37.5 percent largely agree and 15.6 percent agree somewhat that the quality of technology is amongst the best in the world. However, the high cost of acquiring technology is a cause for concern though, as indicated by an average rating of 3.1.

Table 3a. Percentage ratings of the perceptions on technology in the industry

Technology in the industry	Agree wholeheartedly with left-hand side	Largely agree with left-hand side	Agree somewhat with left-hand side	Indifferent between the two answers	Agree somewhat with right-hand side	Largely agree with right-hand side	Agree wholeheartedly with right-hand side
Quality of technology for the industry	0.0%	6.3%	9.4%	6.3%	15.6%	37.5%	25.0%
The cost of quality technology for the industry	21.9%	25.0%	31.3%	0.0%	12.5%	6.3%	3.1%

Source: Own calculations based on the survey.

Table 3b. Technology in the industry

Technology in the industry	Average rating according to the Porter determinants
Quality of technology for the industry	5.8
The cost of quality technology for the industry	3.1

Source: Own calculations based on survey.

3.1.4 Natural Resources

The availability and accessibility of natural resources such as water, soils and rainfall play a critical role in the competitiveness of agricultural industries. Water is one of the key production inputs. South Africa is considered to be a water scarce country and, if the current rate of water usage continues, demand is likely to exceed supply at some point in the near future. Respondents' perception on the availability of water was generally very positive. A total of 18.8 percent of the respondents agree wholeheartedly that the availability of water for the industry is favourable, while just under one-third largely agree and a quarter agree somewhat that the availability of water for the industry is favourable. An average rating of 5.3 is a good indication that the availability of water enhances the competitive success of the industry, as viewed by respondents. However, the new challenge facing the domestic agricultural sector as a whole is water quality which is fast deteriorating and placing the competitiveness of the sector at risk.

Whilst majority of the respondents perceived water to be readily available, they were concerned about the climatic conditions, with a total of 28.1 percent agreeing wholeheartedly that the climatic conditions are adverse and are a constraint to the industry' competitive success. Climatic and rainfall patterns received an average rating of 2.9 and 3.1, respectively, indicating that they are viewed by many to be constraint to the industry's competitive success.

Table 4a. Percentage ratings of the perceptions on state of natural resources

State of natural resources	Agree wholeheartedly with left-hand side	Largely agree with left-hand side	Agree somewhat with left-hand side	Indifferent between the two answers	Agree somewhat with right-hand side	Largely agree with right-hand side	Agree wholeheartedly with right-hand side
Availability of water	6.3%	12.5%	6.3%	0.0%	25.0%	31.3%	18.8%
Climatic conditions	28.1%	25.0%	28.1%	0.0%	9.4%	6.3%	3.1%
Quality of soils	28.1%	25.0%	28.1%	0.0%	9.4%	6.3%	3.1%
Rainfall patterns	25.0%	25.0%	21.9%	6.3%	12.5%	6.3%	3.1%

Source: Own calculations based on the survey.

Table 4b. State of natural resources

State of natural resources	Average rating according to the Porter determinants
Availability of water	5.3
Climatic conditions	2.9
Quality of soils	6.0
Rainfall patterns	3.1

Source: Own calculations based on survey.

3.2 Demand Conditions

Tables 5a and 5b below provide the perception of the respondents and average rating of five demand conditions variables. The local market average rating of 3.2 indicates that this is detraction to the industry's competitive success. It is not surprising that most of the respondents indicated that the growth of the local market is so slow for the investment in new technology that is necessary for the competitive success of the industry. A total of 15.6 percent of the respondents agree wholeheartedly that the local market size in terms of obtaining the economies of scale is too small, whilst over a quarter largely agree and just over one-third agree somewhat that the local market size in term of obtaining the economies of scale is too small.

Table 5a. Percentage ratings of the perceptions on the demand conditions

Demand conditions	Agree wholeheartedly with left-hand side	Largely agree with left-hand side	Agree somewhat with left-hand side	Indifferent between the two answers	Agree somewhat with right-hand side	Largely agree with right-hand side	Agree wholeheartedly with right-hand side
Local market size in terms of obtaining economies of scale	15.6%	28.1%	34.4%	0.0%	9.4%	6.3%	6.3%
Local buyers adoption of new products, technologies and processes	6.3%	12.5%	9.4%	6.3%	28.1%	15.6%	21.9%
Growth of the local market in terms of investment in new technology	25.0%	25.0%	34.4%	0.0%	6.3%	6.3%	3.1%
Internationalisation of local buyers	12.5%	18.8%	12.5%	0.0%	21.9%	15.6%	18.8%
Local customers demand for environmentally friendly products	6.3%	15.6%	15.6%	3.1%	15.6%	25.0%	18.8%

Source: Own calculations based on the survey.

Table 5b. The demand conditions

Demand conditions	Average rating according to the Porter determinants
Local market size in terms of obtaining economies of scale	3.2
Local buyers adoption of new products, technologies and processes	5.0
Growth of the local market in terms of investment in new technology	2.9
Internationalisation of local buyers	4.5
Local customers demand for environmentally friendly products	4.9

Source: Own calculations based on survey.

3.3 Related and Supporting Industries

Like any other industry, the citrus fruit industry is largely dependent on ESKOM for electricity supply. The recent increases in the prices of electricity by ESKOM had a negative impact on the industry's competitiveness. It is not surprising to see the average rating for this determinant been 3, an indication that the electricity supply is a constraint to the industry's competitive success. A total of 21.9 percent of the respondents agree wholeheartedly that the electricity supply constrains the industry's competitive success; whilst 28.1 percent largely agree and 31.3 percent agree somewhat that the electricity supply constrains the industry's competitiveness.

Another important related industry is the telecommunication. Telecommunication costs are apparently very high in South Africa. Therefore, it does not come as a surprise to see the majority of respondents (a total of 25 percent) agreeing wholeheartedly that the telecommunication firms are a constraint to the industry's competitive success. This determinant factor recorded an average rating 3.3, implying this is a constraint to the industry's competitive success.

The citrus fruit farming requires capital investment and therefore is dependent on access to credit for, amongst other things, equipment and machinery. Access to finance is one of the cornerstones for the existence of any business that requires capital investment. Despite the availability of the sophisticated banking system in South Africa, praised as being of international standards, financial institutions' average rating of 2.9 generally shows that this determinant factor is a constraint to the industry's competitive success. Hence, it is not astonishing to see most respondents viewing access to credit extremely difficult. These results support Ndou (2012) argument that the business environmental challenges that uniquely influence the performance of the small and emerging citrus fruit farmers include the accessibility to support programmes from the government and other role players, credit policies of various financial institutions and the use of title deeds as the form of collateral.

Fresh citrus fruits are highly perishable and, therefore, require fast mode of transport for the movement of fruits from the farm to the market, more especially for the export market. Considering the high costs of road transport, it is interesting to discover that the availability of transport received a rating of 3.8, with a total 12.5 percent of the respondents agreeing wholeheartedly that transport is not readily available to transport the citrus fruits. Transport charges are still considered as too high in the entire agricultural sector. The influence of research institutions in the industry is significant. The two organisations, namely the CGA and Citrus Research International (CRI), are more of an axil upon which the competitiveness and the performance of the industry revolve around. This may be due to the fact that they are the citrus farmer representative organisation.

Table 6a. Percentage ratings of the perceptions on related and supporting industries

Related and supporting industries	Agree wholeheartedly with left-hand side	Largely agree with left-hand side	Agree somewhat with left-hand side	Indifferent between the two answers	Agree somewhat with right-hand side	Largely agree with right-hand side	Agree wholeheartedly with right-hand side
Financial services in South Africa	34.4%	25.0%	18.8%	0.0%	9.4%	6.3%	6.3%
Obtaining credit for your company	28.1%	31.3%	21.9%	0.0%	9.4%	6.3%	3.1%
Scientific research institutions	0.0%	3.1%	3.1%	0.0%	28.1%	31.3%	34.4%
Industry's collaboration with scientific research institutions in their R&D activity	3.1%	6.3%	6.3%	0.0%	21.9%	34.4%	28.1%
Electricity supply impact on competitiveness	21.9%	28.1%	31.3%	0.0%	6.3%	9.4%	3.1%
Telecommunication firm's impact on competitiveness	25.0%	21.9%	21.9%	0.0%	15.6%	12.5%	3.1%
Availability of local suppliers of primary inputs	0.0%	3.1%	6.3%	0.0%	31.3%	37.5%	21.9%
The quality of local suppliers of your industry primary inputs	0.0%	6.3%	0.0%	0.0%	28.1%	34.4%	31.3%
The sustainability of local suppliers of your industry primary inputs	0.0%	6.3%	6.3%	0.0%	25.0%	28.1%	34.4%
Availability of storage facilities	15.6%	18.8%	21.9%	3.1%	9.4%	15.6%	15.6%
The cost of using storage facilities	15.6%	25.0%	21.9%	0.0%	6.3%	15.6%	15.6%
Availability of transport	12.5%	28.1%	25.0%	3.1%	6.3%	9.4%	15.6%

Source: Own calculations based on the survey.

Table 6b: Related and supporting industries

Related and supporting industries	Average rating according to the Porter determinants
Financial services in South Africa	2.9
Obtaining credit for your company	2.8
Scientific research institutions	6.2
Industry's collaboration with scientific research institutions in their R&D activity	5.8
Electricity supply impact on competitiveness	3.0
Telecommunication firms' impact on competitiveness	3.3
Availability of local suppliers of primary inputs	6.0
The quality of local suppliers of your industry primary input	6.2
The sustainability of local suppliers of your industry primary inputs	6.0
Availability of storage facilities	4.1
The cost of using storage facilities	3.9
Availability of transport	3.8

Sources: Own calculations based on survey.

3.4 Firm Strategy, Structure and Rivalry

The industry's competitive success can be influenced by how best and fast information flows from the end-user to the manufacturer or the producer and how best producers respond to it. Well-informed product development processes are based on, amongst other critical factors, the flow of information from the end-user back to the producer. An average rating of 6.1 on the flow of information from the customers to the companies indicates a very fortunate situation for the industry as it is considered to be very good. This is the same case with the flow of information from the primary suppliers to the producers.

The citrus fruit industry is export driven, with around 71 percent of its products being exported, making the local market very insignificant looking at the total picture of the industry. The domestic rivalry in the industry is very intense and according to the average rating (5.6) for this determinant factor, this enhances the competitive success of the industry. This is so because intense domestic rivalry creates pressure on companies to improve and innovate. It pushes companies to improve quality and services and to create new products and processes, which are required for competitive success. A total of 28.1 percent of respondents agree wholeheartedly that competition in the local market is very intense, whilst 21.9 percent largely agree and 31.3 percent agree somewhat that competition is very intense.

The citrus fruit industry requires huge capital investments. In the country that is characterised by low levels of access to credit, and difficulty in accessing credit being one of the key barriers to entry, it is not surprising that entry to the local market by new competitors almost never occur. A total of 9.4 percent of the respondents agree wholeheartedly that entry of new competitors almost never occurs in the local market; whilst over one-third largely agree and an overwhelming 37.5 percent agree somewhat that entry of new competitors almost never occurs in the local market.

Table 7a. Percentage ratings of the perceptions on the competitiveness impact of firm strategy, structure and rivalry

Firm strategy, structure and rivalry on competitiveness	Agree wholeheartedly with left-hand side	Largely agree with left-hand side	Agree somewhat with left-hand side	Indifferent between the two answers	Agree somewhat with right-hand side	Largely agree with right-hand side	Agree wholeheartedly with right-hand side
Industry's expenditure on R&D	0.0%	6.3%	3.1%	0.0%	28.1%	28.1%	34.4%
The information flow from primary suppliers to your company	0.0%	6.3%	6.3%	0.0%	25.0%	34.4%	28.1%
The flow of information from customers to your company	3.1%	0.0%	6.3%	0.0%	28.1%	31.3%	31.3%
Competition in the local market	3.1%	9.4%	6.3%	0.0%	31.3%	21.9%	28.1%
Entry of new competitors	9.4%	34.4%	37.5%	0.0%	9.4%	6.3%	3.1%
Competition in international market	9.4%	9.4%	12.5%	0.0%	21.9%	25.0%	21.9%

Source: Own calculations based on the survey.

Table 7b. The impact of firm strategy, structure and rivalry on competitiveness

Firms strategy, structure and rivalry	Average rating according to the Porter determinants
Industry`s expenditure on R&D	6.1
The information flow from primary suppliers to your company	6.0
The flow of information from customers to your company	6.1
Competition in the local market	5.6
Entry of new competitors	3.2
Competition in international market	5.1

Sources: Own calculations based on survey.

3.5 Government Attitude and Policies

Tables 8a and 8b below contain some of the policy areas on which the respondents have very strong views as they impact on their operations. The macro-economic policy is viewed to be sound, with an average rating of 4.5 indicating an enhancement to the industry's competitive success. Government influence has been deemed to have negative influence on the export performance of the industry. Although government has made an effort to liberalise trade and has several trade agreements with a couple of countries and/or regions, a total of 28.1 percent of respondents still believe strongly that the current trade policy is a constraint to the industry's competitive success. An average rate of 3.2 is an indication that South Africa's trade policy is still a constraint to the industry's competitive success. An average rate of 3.7 for administrative regulations is also a grave concern as this is perceived by the quarter of the respondents as strongly a burdensome for the industry competitive success.

Labour policy and land reform attracted very low ratings. Land reform has been the topical issue for years, and government has been heavily criticised for not meeting its set targets and making very little progress moving towards the set targets. Investments in land improvement and developments are negatively affected by slow progress in settling land claims, hence impacting negatively on the competitive success of the industry. The political uncertainty associated with the land redistribution impedes likely investments in the farms. This is supported by the low average rating of 2.9 for the land reform policy. An overwhelming 31.3 percent of respondents agree wholeheartedly that land reform is a constraint to the industry's competitive success. Business's view on the labour policy has been that it is not flexible and offers more protection to the workers and little protection to the business. This view is supported by an average rate of 2.6 on this determinant factor, which indicates that the labour policy is a constraint to industry's competitive success. A total of over one-third of the respondents agrees wholeheartedly that the labour policy is a constraint to the domestic citrus fruit industry. With an average rate of 3.2, the current tax system is also viewed as hindrance to business investment and risk taking, with around 21.9 percent of the respondents agreeing wholeheartedly that this negatively impacts the competitive success of the industry.

Broad-Based Black Economic Empowerment (BBBEE) is the key policy objective in South Africa aimed at addressing the past lack of access to resources by previously disadvantaged individuals such as Coloureds, Indians and Africans (Mantu, 2003). This instrument (Agri BEE) is broadly aimed at economically transforming the racially biased commercial agricultural sector (including its upstream input supply and downstream value addition industries), and making it more inclusive, representative of the demographics of South Africa and racially balanced. Notwithstanding its good intentions and being one of the cornerstones in building the prosperous and sustainable post-apartheid and non-racial South Africa, it is discouraging to see that a total of 15.6 percent of the respondents agree wholeheartedly that the BEE policy constraint the industry competitive success. Another 28.1 percent largely agree and an overwhelming 31.3 percent agree somewhat that this policy is a constraint to the industry competitive success. With an average rate of 3.3, this determinant factor clearly indicates it is a constraint to the industry competitive success.

Table 8a. Percentage ratings of the perceptions on the competitiveness impact of government attitude and policy

The impact of government attitude and policy on competitiveness	Agree wholeheartedly with left-hand side	Largely agree with left-hand side	Agree somewhat with left-hand side	Indifferent between the two answers	Agree somewhat with right-hand side	Largely agree with right-hand side	Agree wholeheartedly with right-hand side
South Africa's trade policy	28.1%	25.0%	18.8%	0.0%	9.4%	15.6%	3.1%
South Africa's land reform policy	31.3%	25.0%	21.9%	0.0%	9.4%	9.4%	3.1%
South Africa's labour policy	34.4%	28.1%	21.9%	0.0%	6.3%	6.3%	3.1%
South Africa's macro-economic policy	9.4%	18.8%	15.6%	0.0%	21.9%	18.8%	15.6%
South Africa's competition law	6.3%	6.3%	3.1%	3.1%	25.0%	31.3%	25.0%
South Africa's BEE policy	15.6%	28.1%	31.3%	0.0%	9.4%	9.4%	6.3%
Regulatory standards	9.4%	6.3%	12.5%	3.1%	28.1%	18.8%	21.9%
Administrative regulations	25.0%	21.9%	21.9%	0.0%	6.3%	12.5%	12.5%
The tax system	21.9%	28.1%	21.9%	3.1%	9.4%	9.4%	6.3%
Environmental regulations	9.4%	6.3%	6.3%	0.0%	21.9%	28.1%	28.1%
Complying with environmental standards	3.1%	9.4%	12.5%	0.0%	25.0%	25.0%	25.0%

Source: Own calculations based on the survey.

Table 8b. The impact of government attitude and policy on competitiveness

Government administration issues and policies	Average rating according to the Porter determinants
South Africa's trade policy	3.2
South Africa's land reform policy	2.9
South Africa's labour policy	2.6
South Africa's macro-economic policy	4.5
South Africa's competition law	5.6
South Africa's BEE policy	3.3
Regulatory standards	5.1
Administrative regulations	3.5
The tax system	3.2
Environmental regulations	5.5
Complying with environmental standard	5.4

Sources: Own calculations based on survey.

3.6 The Role of Chance

Table 9a presents the perceptions of the respondents while Table 9b indicates the average ratings of the impact of factors that are difficult for the industry to control. All aspects considered as chance events impact negatively on the industry's performance. The South African exchange rate has been very volatile but generally weak against other major trading currencies, particularly the US Dollar. Exchange rate average rate of 3.9 clearly indicates that this determinant factor constraints the industry's competitive success. A total of 21.9 percent of the respondents agree wholeheartedly that the current exchange rate is a constraint to the domestic citrus fruit industry's competitive success.

Blackmore (2003) argues that crime has a negative influence on the investor confidence. South Africa has been

unable to attract the quantities of foreign direct investment it requires to attain the growth rate to enable it to address the inequities of the past partly due to high rate of crime. This is supported by the average rate of 2.6, which clearly means that crime has a constraining effect on the industry's competitive success. A total of 28.1 percent of the respondents agree wholeheartedly that crime imposes significant costs to their companies, whilst 37.5 percent largely agree and 21.9 percent agree somewhat that crime is a concern to the industry competitive success.

According to the 2013 United Nations programme on HIV/AIDS, South Africa is among the countries with the largest number of people living with HIV/AIDS in the world. It has around 6.1 million people living with this pandemic. The impact of this pandemic on business includes lower productivity and increased absenteeism, higher employee benefit costs, loss of experience and vital skills, higher labour turnover rates, and higher recruitment and training costs. The high incidence of HIV/AIDS impacts negatively on the competitive success of the industry, as highlighted by an average rate of 2.8. An overwhelming 31.3 percent of respondents agree wholeheartedly that the HIV/AIDS pandemic imposes significant costs to their companies, and as a result it impacts negatively on the competitive success of the industry.

Table 9a. Percentage ratings of the perceptions on the competitiveness impact of chance factors

The impact of chance factors on competitiveness	Agree wholeheartedly with left-hand side	Largely agree with left-hand side	Agree somewhat with left-hand side	Indifferent between the two answers	Agree somewhat with right-hand side	Largely agree with right-hand side	Agree wholeheartedly with right-hand side
Impact of crime to the industry	28.1%	37.5%	21.9%	0.0%	6.3%	3.1%	3.1%
Impact of HIV/AIDS to the industry	31.3%	25.0%	28.1%	0.0%	6.3%	3.1%	6.3%
Economic stability	25.0%	21.9%	18.8%	0.0%	12.5%	12.5%	9.4%
Impact of exchange rate on the industry's competitiveness	21.9%	18.8%	15.6%	0.0%	15.6%	18.8%	9.4%

Source: Own calculations based on the survey.

Table 9b. Average ratings of the impact of chance factors on competitiveness

The impact of chance factors	Average rating according to the Porter determinants
Impact of crime to the industry	2.6
Impact of HIV/AIDS to the industry	2.8
Economic stability	3.5
Impact of exchange rate on the industry's competitiveness	3.9

Sources: Own calculations based on survey.

4. Conclusions and Recommendations

This paper analysed the determinants of competitiveness in the South African citrus fruit industry by applying the Porter's competitive diamond model. The analysis established several concerns that are regarded by many industry's stakeholders as hindrances to the competitive success of the industry. The study revealed that the availability of skilled employees, quality of unskilled labour, cost of doing business in the industry, services from financial institution, electricity supply, land reform and some other government policies such as trade policy, labour policy, BEE policy and tax system were the major determinant factors impeding the competitive success of the domestic industry. The list also included the current climatic conditions, high incidences of HIV/AIDS and crime, economic stability and the cost of technology and infrastructure.

Despite the challenges mentioned above, the quality of skilled labour, general level of development and the

quality of infrastructure and technology in the industry, quality of soils, availability of scientific research institutions and collaboration of the industry with these institutions, availability and quality of local suppliers of primary inputs and market information flow have a positive influence on the competitive success of the industry.

The critical aspects influencing the competitiveness, as rated by the respondents, need special attention for sustained performance of the industry. Government has to create the right investment climate and put in place policies that favour long-term benefits that might not be easily perceived. Government should play an important role in stabilising the local economic environment to support the degree to which the industry can improve its international image, translating into the growth and the competitive success in the export markets. The improvement of some external business environmental factors that impact negatively on the competitive success of the industry, such as the fiscal and trade policies, are in its hands, and therefore it should play a significant role in this regard. In addition, the industry also needs to invest in skills and knowledge among others.

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