An analysis of the factors impacting the competitive performance of the South African Wine industry value chain

by

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Declaration

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Abstract

The purpose of this study was to analyse the competitive performance of the South African wine industry and to compare the findings with the results obtained from similar previous studies in 2006 and 2011. The study followed the comprehensive Vollrath-Porter approach, following a five-step analytical method. Due to the sustained export orientation of the South African wine industry, the trade-based relative trade advantage (RTA) measure (Vollrath) and industry opinions through Porter's competitive diamond were used to measure competitive performance.

This study defined competitiveness as "the ability of the South African wine industry to sustain or grow business through trade for South African wine amidst a changing agricultural, political, social, environmental, governance, and production landscape and an unpredictable exchange rate, while consistently earning at least the opportunity cost of resources employed."

The annual competitive performance of the South African wine industry was calculated using the RTA formula and the International Trade Centre (ITC) and Food and Agriculture Organisation (FAO) datasets. The competitive performance of the industry from 2001 could be divided into two clear phases:

Phase 1: Fluctuating and increasing competitive performances (2001-2009); and

Phase 2: Fluctuating and decreasing competitive performances (2010-2017)

Despite being in a state of declining competitive performance, the South African wine industry remains competitive across the entire global arena. The average RTA for 2001-2017 was 5.83, with a peak of 7.15 in 2009 and a lowest point of 3.75 in 2012.

Industry insight and opinions into key influencing factors were collected through a two-stage Delphi process. In stage one, a Wine Executive Survey (WES) involved rating 121 factors as either enhancing or constraining competitive performance, rated on a Likert scale with 1 (constraining) and 5 (enhancing). The purpose of the WES was to establish an opinion benchmark for comparison with the empirical RTA measurement; and also to compare the current situation with the 2005 and 2008 WES results. The 2018 WES results – when analysed at value chain cluster level – revealed a high level of alignment between the clusters, which indicated a well-informed value chain. The survey also obtained opinions from different points in the wine industry value chain, from two clusters viz. agribusiness (including wine grape producers and agri-support services); and wine business (including cellars, intermediaries and wine trade).

The baseline results from the Wine Executive Surveys in 2005 and 2008 showed that the competitive space decreased substantially from 2005 to 2008. However, the results from the 2018 WES reveal that this competitive space has expanded again, recovering almost to its position in 2005. The 121 rated factors were grouped into the Porter Competitive Diamond – a six-determinant model which included 'production factors', 'demand factors', 'firm structure, strategy and rivalry', 'related and supporting industries', 'government factors' and 'chance factors'. The 'firm strategy, structure and rivalry' determinant received the highest overall determinant rating of 3.53/5 or 70.6% as most enhancing while 'government factors' received the lowest average rating of 2.19/5 or 43.8% as most constraining. These results were confirmed in a priority rating of the six determinants during the focus group session of the second phase Delphi.

The most enhancing factors across all Porter determinants were 'the competitiveness drive of the South African product market' – rated at 4.59/5 or 91.8% – followed by the 'importance of well-developed infrastructure' (4.52/5 or 90.4%) while the two most constraining factors were 'government consultation and interactions' (1.17/5 or 23.4%) and 'government financial support' (1.24/5 or 24.8%).

From an assessment across the value chain, bulk wine is the most competitive category, followed by bottled wine. The least competitive category was 'spirits obtained by distilling grape wine or grape marc', which was rated as uncompetitive.

The prevalence of a socio-economic theme was observed in some of the most constraining factors across all the Porter determinants. This resulted in a proposal that the Porter Competitive Diamond be expanded to accommodate a seventh 'socio-economic' determinant in order to highlight the impact of socio-economic/political transformation factors on the competitive space in the emerging South African environment. This new determinant, grouped from socio economic/political factors identified in the study, highlighted the overall constraining impact of these factors on competitive performance. The most enhancing factor was 'obtaining unskilled labour' and the most constraining was 'crime perceptions'. The addition of such a new determinant to the Porter Competitive Diamond needs to be explored further but mirrors Michael Porter's own view that economic objectives need to complement social objectives in a developing country environment (2007). Other aspects that need to be considered through future research include a refined process for identifying relevant factors, as well as linking these factors with the progress reported in existing socio-economic/political transformation interventions. This will improve the application of the Porter-Vollrath approach to improve the analysis of competitiveness in the South African agri-food business environment.

The results from this study were drafted into a set of strategic findings and recommendations that propose to address the most prevalent and achievable constraining influences on competitive performance. A key area for consideration by the industry is the negative association with government-related factors. The crux of the recommended approach is to re-engage with government in a collaborative approach to transformation while protecting the impact of factors that enhance competitive performance. Important key strategic areas for enhancing competitive performance include access to water, short-term finance solutions and a branded bulk wine packaging format.

Opsomming

Die doelwit van hierdie studie was om die mededingende prestasie van die Suid-Afrikaanse wynbedryf te analiseer en om die bevindings te vergelyk met die resultate van soortgelyke vorige studies in 2006 en 2011. Die studie het die omvattende Vollrath-Porter benadering gebruik, wat berus op ’n vyf-stap analitiese benadering wat die handelsgebaseerde relatiewe handelsvoordeel (relative trade advantage (RTA)) maatstaf (Vollrath) en bedryfsopinies verkry deur middel van Porter se mededingende diamant ingesluit het.

Hierdie studie definieer mededingendheid as “die vermoë van die Suid-Afrikaanse wynbedryf om besigheid te volhou of te laat groei deur handel in Suid-Afrikaanse wyn te midde van ’n veranderende landbou-, politiese, maatskaplike, omgewings-, bestuur en beheer- en produksielandskap en ’n onvoorspelbare wisselkoers, terwyl daar konsekwent ten minste die geleentheidskoste van hulpbronne verbruik, verdien word.”

Die jaarlikse mededingende voordeel van die Suid-Afrikaanse wynbedryf is bereken deur gebruik te maak van die RTA-formule en die datastelle van die International Trade Centre (ITC) en die Food and Agriculture Organization (FAO). Die mededingende prestasie van die bedryf sedert 2001 kon in twee duidelike fases verdeel word:

Fase 1: Wisselende en toenemende mededingende prestasie (2001-2009); en

Fase 2: Wisselende en afnemende mededingende prestasie (2010-2017)

Ten spyte daarvan dat dit in ’n toestand van afnemende mededingende prestasie is, bly die Suid-Afrikaanse wynbedryf mededingend regoor die globale arena. Die gemiddelde RTA vir 2001 tot 2017 was 5.83, met ’n piek van 7.15 in 2009 en ’n laagste punt van 3.75 in 2012.

Bedryfsinsigte en -opinies oor belangrike invloedryke faktore is in ’n twee-fase Delphi-proses versamel. In die eerste stadium is ’n Wine Executive Survey (WES) gebruik wat behels het dat 121 faktore beoordeel is as óf versterkend óf stremmende van mededingende prestasie, gemeet op ’n Likert-skaal van 1 (stremmend) tot 5 (versterkend). Die doel van die WES was om ’n opinie-maatstaf te bepaal wat met die empiriese RTA-meting vergelyk kon word; en ook om die huidige situasie met die resultate van die 2005 en 2008 WES-uitslae te vergelyk. Toe die 2018 WES-uitslae op die vlak van waardeketting- groepe vergelyk is, het dit ’n hoë vlak van belyning tussen die groepe getoon, wat dui op ’n goed-ingeligte waardeketting. Die opname het ook opinies vanaf verskillende punte in die waardeketting van die wynbedryf vanaf twee groepe bekom, naamlik agribesigheid (insluitend wyndruifprodusente en agri-ondersteuningsdienste); en wynbesigheid (insluitend kelders, tussengangers en die wynhandel).

Die basislyn-uitslae van die Wine Executive Surveys in 2005 en 2008 het getoon dat die mededingende ruimte noemenswaardig vanaf 2005 tot 2008 verminder het. Die resultate van die 2018 WES het egter gewys dat hierdie mededingende ruimte weer uitgebrei het en dat dit amper tot sy posisie in 2005 herstel het. Die 121 beoordeelde faktore is verdeel volgens Porter se mededingende diamant – ’n ses-determinant model wat insluit ‘produksiefaktore’, ‘vraagfaktore’, ‘firma-struktuur, -strategie en -wedywering’, ‘verwante en ondersteunende bedrywe’, ‘regeringsfaktore’ en ‘toevallige faktore’. Die ‘firma-struktuur, -strategie en -wedywering’ determinant het die hoogste algehele beoordeling gekry, van 3.53/5 of 70.6% – as die mees versterkend, terwyl ‘regeringsfaktore’ die laagste algehele beoordeling gekry het, van 2.19/5 of 43.8% – as

die mees stremmend. Hierdie resultate is by wyse van ’n prioriteitsbeoordeling van die ses determinante tydens die fokusgroepsessie in die tweede fase van die Delphi bevestig.

Die mees versterkende faktore oor al die Porter-determinante heen was ‘die mededingende dryfkrag van die Suid-Afrikaanse produkmark’ – gereken teen 4.59/5 of 91.8%, gevolg deur die ‘belangrikheid van goed ontwikkelde infrastruktuur’ (4.52/5 of 90.4%), terwyl die twee mees stremmende faktore ‘regeringskonsultasie en -interaksie’ (1.17/5 of 23.4%) en ‘finansiële ondersteuning van die regering’ (1.24/5 of 24.8%) was.

Vanuit ’n assessering van oor die waardeketting heen is grootmaat wyn die mees mededingende kategorie, gevolg deur gebotteleerde wyn. Die mins mededingende kategorie was ‘spiritus verkry deur druif wyn of druiwedoppe’, wat gereken is om nie mededingend te wees nie.

Die voorkoms van ’n sosio-ekonomiese tema is in sommige van die mees stremmende faktore oor al die determinante van die Porter-diamant waargeneem. Dit het gelei tot die voorstel dat Porter se mededingende diamant uitgebrei moet word om ’n sewende, ‘sosio-ekonomiese’ determinant in te sluit om die impak van sosio-ekonomiese/politiese transformasiefaktore op die mededingende ruimte in die opkomende Suid-Afrikaanse omgewing uit te lig. Hierdie nuwe determinant, wat bestaan uit sosio-ekonomiese/politiese faktore wat in die studie geïdentifiseer is, werp lig op die algehele stremmende impak van hierdie faktore op mededingende prestasie. Die mees versterkende faktor was ‘verkryging van ongeskoolde arbeid’ en die mees stremmende was ‘persepsies van misdaad’. Die byvoeding van só ’n nuwe determinant by Porter se mededingende diamant moet verder ondersoek word, maar weerspieël Michael Porter (2007) se persoonlike siening dat ekonomiese doelwitte sosiale doelwitte in ’n ontwikkelende land moet komplementeer. Ander aspekte wat ook in toekomstige navorsing oorweeg moet word, is ’n verfynde proses vir die identifisering van relevante faktore, sowel as die koppeling van hierdie faktore aan die vooruitgang wat in bestaande sosio-ekonomiese/politiese transformasie-ingrypings gerapporteer word. Dít sal die toepassing van die Porter-Vollrath benadering verbeter om die analise van mededingendheid in die Suid-Afrikaans agri-voedsel besigheidsomgewing te verbeter.

Die resultate van hierdie studie is saamgestel in ’n stel strategiese bevindinge en aanbevelings wat poog om die mees algemene en haalbare stremmende invloede op mededingende prestasie aan te spreek. ’n Sleutelgebied vir oorweging deur die bedryf is die negatiewe assosiasie met regeringsverwante faktore. Die kern van die voorgestelde benadering is om weer betrekkinge met die regering aan te gaan in ’n samewerkende benadering tot transformasie terwyl die impak van faktore wat mededingende prestasie verhoog, beskerm word. Belangrike kern strategiese gebiede vir die verhoging van mededingende prestasie sluit in toegang tot water, korttermyn finansiële oplossings en ’n verpakkingsformaat vir grootmaat wyn wat ’n handelsmerk het.

Dedications

This thesis is dedicated to my family, who encouraged me to challenge my limits and live in the fullness for which I was created.

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List of Abbreviations

ARC	Agricultural Research Council
BEE	Black Economic Empowerment
CF	Chance factors
DF	Demands factors
DRC	Domestic resources cost
EU	European Union
FAO	Food and Agriculture Organisation
FR	Firm structure, strategy and rivalry
GF	Government factors
HO model	Hecksher and Ohlin model
IPW	Integrated Production of Wine
ISMEA	Institut de Sciences Mathématiques et Economiques Appliquées
ISO	International Standards Organisation
ITC	International Trade Centre
PAM	Policy analysis matrix
PCA	Principal component analysis
PF	Production factors
PCR	Private cost ratio
RCA	Relative comparative advantage
RMP	Relative import penetration
RS	Related and supporting industries
RTA	Relative trade advantage
SA	South Africa
SADC	South African Development Community
SALBA	South African Liquor Brand Owners Association
SAWIS	South African Wine Industry Information and Systems
SCB	Social cost benefits
SH	Southern Hemisphere
UK	United Kingdom
UN	United Nations

USA	United States of America
USD	United States Dollars
WES	Wine Executive Survey
WIETA	Wine and Agricultural Ethical Trade Association
WIP	Wine industry strategic plan
WISE	Wine Industry Strategic Exercise
WOSA	Wines of South Africa

1 Introduction

1.1 Background

The South African wine industry dates from 1655, when Jan van Riebeeck first planted *Vitis vinifera* vineyards in Constantia (Estreicher, 2014). This moment shaped the South African wine industry, introducing wine production into local agriculture. The industry has grown to produce 1,118.3 million litres of wine from the 2017 harvest (SAWIS, 2017b). South African wine is traded in local and export markets, with 447.3 million litres consumed locally and 448.5 million litres (50.06%) exported in 2017 (SAWIS, 2017a; Vinpro, 2018a). In terms of value, South Africa's three largest export partners are the United Kingdom, Germany and the Netherlands (Wesgro, 2017). Through wine export, South Africa has risen to become a major competitor in the international wine market and is currently the eighth biggest wine-producing country on volume, comprising 4.1% of total global wine production in 2017 (SAWIS, 2017a). In comparison, the top three players in global wine production (on volume) are Italy (18.03%), France (17.31%) and Spain (13.55%) (Wesgro, 2017).

"Brand South Africa" plays an active role in promoting the South African wine industry (Brand South Africa, 2016), but the future prospects for this unique industry remain unknown. One of the keys lies with competitiveness, both at the industry and firm level. This study seeks to answer open questions such as: How competitive is the South African wine industry? What competitiveness trends are at play? What factors drive competitiveness in this industry, and how can they be strengthened? This study does not focus on the firm level; but will rather focus on competitiveness at the different points in the wine value chain.

The concept of competitiveness has evolved over time, with the current definition speaking to an industry's ability to maintain and strengthen its position as a preferential trade partner over a sustained period of time as a result of a competitive advantage (Smith, 1776; Ricardo, 1821; Freebairn, 1987; Porter, 1990; Cho and Moon, 2013).

The growth of South Africa as a global exporter of wine since deregulation of the industry in the 1900's has resulted in strong competition between producers in the local and global markets (SAWIS, 2017a). As an indication of the competition, the wine industry experienced a dramatic increase from 560 cellars in 2007 to 604 cellars in 2009, then a consolidation back to 546 cellars in 2017 (SAWIS, 2017a). This declining pattern corresponds with the area under vine decreasing from 101,957 hectares in 2007 to 94,545 hectares in 2017 (SAWIS, 2017b). While there were multiple factors at play, the decrease in competitive players in the market speaks to the inability of the South African wine industry to sustain its competitive performance at the level required by the size and value that the industry had grown to in 2009.

Since the movement towards freer global market trade in the 1990's, competitiveness has become an important component of country-, industry-, and firm-level strategies. In the agricultural environment, the Institut de Sciences Mathématiques et Economiques Appliquées (ISMEA) report (1999) on the impact of agricultural integration in the expanding competitiveness in European Union (EU) is a leading example of the above. Competitiveness was also included as one of the three core goals of the South Africa Agricultural Sector Plan in 2001, together with environmental sustainability and redistribution and transformation. This view was also captured in chapter 6 on rural and agricultural development in the current National Development Plan (National Planning Commission, 2011).

Competitiveness studies in the South African agricultural environment, since the 1990's, were influenced by the ISMEA method. Trends in the South African wine industry's performance and the forces that govern them have been investigated, for example using surveys conducted in 2005 and 2008 (Esterhuizen and Van Rooyen, 2006; van Rooyen, Esterhuizen and Stroebel, 2011). These studies also used Food and Agriculture Organisation (FAO) data to analyse trends from 1961 and showed a dramatic increase in competitive performance during the 1990's, corresponding to South Africa's move to a true democracy and the economic deregulation of the agricultural economy referred to above. This period is referred to as the "Madiba Magic" period by Van Rooyen et al. (2011). The 2011 study also indicated a positive – albeit a decrease – in competitive performance by the industry from 2006 onwards.

No comprehensive study update has been conducted on the wine industry in the ten years since van Rooyen, Esterhuizen and Stroebel (2011). A recent analysis in the Agri-Competitive Matrix report (Van Rooyen and Boonzaaier, 2017) rated competitiveness using the relative trade advantage (RTA) and relative comparative advantage (RCA) measurements and confirmed a sustained competitive, but declining trend since 2008. This study, however, did not consider the underlying factors for such a trend.

An industry's competitiveness and ability to trade (both export and import) on a sustained basis is related to aspects such as policy, resource endowments and climatic factors, evolving markets, the availability and strength of supporting industries, industry structure, and firm-level strategies (Webber and Labaste, 2011; Van Rooyen and Esterhuizen, 2012; Boonzaaier, 2015; Sibulali, 2018; Xolela, 2018). Changes in consumer preferences are particularly relevant to the food and beverage industry, and play a vital role in this context.

Van Rooyen, Esterhuizen and Stroebel (2011) identified the key market drivers for the South African wine industry, including the presence of healthy, local market competition and an efficient network of supporting industries. Exchange rate fluctuations and shifting market trends were also found to affect competitiveness. However, they did not consider the emerging trend of rising consumer awareness around health and making healthy lifestyle choices. This trend has affected buying patterns in Australia and China (Foxcroft, 2009) and could affect South African wine sales as either a driving or constraining factor.

This study aimed to provide an update on the previous studies and a current perspective of competitiveness within the South African wine industry value chain and to identify emerging influencing factors. The outcomes should provide usable information for key decision-makers to improve the positioning of the South African wine industry for future competitiveness.

1.2 Problem statement

The 2011 and 2017 studies (van Rooyen, Esterhuizen and Stroebel, 2011; Van Rooyen and Boonzaaier, 2017) of the South African wine industry reported a positive growth trend in its competitive performance from 1990 to 2006. Since then, the industry has experienced a concerning decline in competitive performance and capacity, shown in the decreasing number of wine cellars and area under vineyard (SAWIS, 2017a). Reports have indicated that the industry is becoming dependent on the government to create a supportive climate for growth through regulations and policy (Rendleman et al., 2016). Industry growth may have been hindered by a lack of trust between industry and government (as noted by van Rooyen, Esterhuizen and Stroebel, 2011). The establishment of the Wine Industry Council with the Wine Industry Strategic Plan (WIP) – based on the Wine Vision 2020 and the Wine Transformation Charter and Score Card during the 2000 decade (South

African Wine Industry Directory, 2003, 2007) – underline the need for closer collaboration between the wine industry and government and its agencies. Demand conditions also play a significant role in competitiveness, as factors influencing this environment are largely dependent on market forces and public opinions.

The exchange rate is important in global trade performance and the value of the South African rand has fluctuated since 2010, with the rand losing strength against major global currencies. The correlation between the decline in competitive performance of the South African wine industry and the global financial crisis suggests that the industry is strongly trade-oriented (Edey, 2009), and factors such as exchange rate fluctuations may thus play a major role. However, survey responses from wine executives collected in the 2006 and 2011 studies revealed a complex industry with many determining factors at play. These studies found that competitiveness was driven by a combination of factors, rather than by any one factor – such as policy or exchange rate levels – in isolation (Esterhuizen and Van Rooyen, 2006; van Rooyen, Esterhuizen and Stroebel, 2011; Van Rooyen and Esterhuizen, 2012). Although the 2006 (Esterhuizen and Van Rooyen, 2006) and 2011 (van Rooyen, Esterhuizen and Stroebel, 2011) studies provided historical insights into factors influencing the wine industry, it is important to understand the factors currently influencing and shaping the future of this industry. An updated investigation of the current competitive performance of the South African wine industry was thus appropriate to understand the relevant key enhancing and constraining factors and analyse current growth trends.

Studies over the past 10 years, some as recent as 2017, have indicated that the South African wine industry has lost momentum, after a period of high growth in competitive performance between 1990 and 2006. The industry is still performing competitively in the global arena, but on a declining basis.

The crux of the problem statement driving the study is: what is underlying this trend? This study will involve a comprehensive investigation into this competitive performance and the factors affecting it.

1.2.1 Research questions

The sections above suggested the following non-exhaustive list of research questions about the competitive performance of the South African wine industry, to be addressed in this research assignment.

- In light of the 2006 and 2011 studies, has trajectory of competitive performance shifted in the South African wine industry?
- What is the current competitiveness trend observed across the South African wine industry?
- Which key factors are driving or constraining the competitive performance of the industry?
- How do these key factors relate to one another, and which factor determinants exert the most influence on competitive performance?

Furthermore, the following research questions are addressed in order to assist with defining a set of strategic recommendations.

- Is there a clear relationship between competitive performance and the exchange rate?
- Is there a relationship between the South African government's actions and the wine industry's competitive performance?
- Which determinants and factors should be focused on over the next 12 months to raise the competitive performance of the South African wine industry?

- Is the emerging consumer health trend relevant to the competitive performance of the South African wine industry?
- Is there a relationship between factors with a socio-political focus and the impact of these factors on competitive performance?

1.3 Objective and sub-objectives

Based on the set of research questions in 1.2.1 the following objective was determined for this study:

“Analyse the competitive performance of the South African wine industry between 2001 and 2017.”

This leads to a set of sub-objectives that collectively contribute towards achieving the objective above.

- Determine the competitive performance of the South African wine industry between 2001 and 2017 through empirical measurements
- Identify the underlying factors impacting the competitive performance of the South African wine industry through an industry survey
- Align the qualitative results with the Porter diamond determinants

1.4 Hypothesis

The study hypothesis served as a guideline and provided direction for the analysis and interpretation in this body of research. The South African wine industry is highly trade-oriented. The competitive performance of the South African wine industry is thus related to the exchange rate between the South African rand and major international currencies. However, although the exchange rate is a factor of competitive performance, it is not its sole influencer. Therefore, it is hypothesised that:

“The industry’s competitive performance is the result of a complex interrelation of determining factors, each playing an enhancing or constraining role.”

1.5 Analytical framework and research methodology

This body of research includes a quantitative and qualitative analysis of the South African wine industry. The study was structured following the analytical framework outlined below.

Step 1: Define competitiveness in the context of the South African wine industry

Step 2: Measure the competitive status of the South African wine industry

Step 3: Identify key factors influencing the competitiveness of the South African wine industry through a Wine Executive Survey (WES)

Step 4: Establish the major clusters or determinants of factors of competitiveness

Step 5: Use the findings to propose a set of conclusions and recommendations to enhance the competitiveness of the South African wine industry

Although this framework served as a guide, key findings that emerged throughout the study were explored and expanded on so as to best understand the current and future driving and constraining determining factors of competitiveness.

1.6 Study importance

South Africa is one of the top ten wine-producing countries in the world. The wine industry is both historically and currently a competitive industry (Esterhuizen and Van Rooyen, 2006; van Rooyen, Esterhuizen and Stroebel, 2011). Despite a decline in competitiveness reported in 2011 (van Rooyen, Esterhuizen and Stroebel, 2011) and 2017 (Van Rooyen and Boonzaaier, 2017), the industry continues to perform competitively, placing it in a strong position to attract scarce resources and investment (Freebairn, 1987).

It was imperative that the declining trend in competitive performance be revisited to obtain relevant, recent data. By addressing factors that are driving this trend and leveraging factors to enhance industry competitiveness, this study offers key players information to make strategic decisions to re-position the industry for sustainable growth.

1.7 Study limitations

This study was confined to analysing the competitiveness of the South African wine industry with certain references to value chain positions following the proposed analytical framework. The wine industry's performance as a whole was analysed, without differentiating between red and white wine or between cultivars.

Competitive performance was analysed at the industry-level, comparing performance with global competitors. Firm-level competitiveness was not considered.

Historical data for the South African wine industry are available from 1961 to 2018. However, this study prioritised International Trade Centre (ITC) data as a source and focused on the timeframe 2001 to 2018, building on previous studies that used the FAO database.

This study was retrospective. Historical data and current opinions were used to generate growth trends and indicate current determining factors. A model to predict competitive performance was not created. However, the study findings have been consolidated into a set of strategic recommendations that can be used to guide industry-level decisions to improve the competitive performance of the industry.

1.8 Study outline

The five-step analytical approach was followed (Esterhuizen and Van Rooyen, 2006).

Chapter 1 has given a brief introduction to the study, including the problem statement, study hypothesis, and limitations of the research.

Chapter 2 outlines the evolution of competitiveness theory and how the definition of competitiveness has progressed from Adam Smith's *absolute advantage* in 1821 (Smith, 1776) to Michael Porter's new competitiveness theory based on *competitive advantage* in 1990 (Porter, 1990). This definition of competitiveness is related to the context of the South African wine industry.

The study that follows is shaped by Porter's definition of competitive advantage (Porter, 1990) and Vollrath's measurement of international competitiveness through the RTA (Vollrath, 1991). Chapter 3 describes the methods used to calculate empirical measures of competitive performance and the two-stage Delphi process used to identify key determining factors, beginning with a survey of wine executives, and then using a focus group to reach consensus.

Chapter 4 presents an overview of the South African wine industry, giving context to the production environment, outlining the export landscape, and exploring the industry's value chain today. Health as an influencing factor over wine consumption is introduced and the international impact of this trend is discussed.

Chapter 5 presents the qualitative and quantitative results and findings from the study.

Chapter 6 presents a synthesis of the results and concludes the study by revisiting the hypotheses in light of these results. The study outcomes are used to compile strategic recommendations to improve the competitive performance of the South African wine industry.

2 Literature Review

2.1 Competitiveness in agribusiness – theory and analysis

The cornerstone of successful business across all industry types is the ability to sustain profitable and competitive trade over both the short and long term. When examining economic success at any level, the defining factors affecting competitiveness must be identified and examined (Porter, 1990, 1998).

The study of competitiveness is driven by a need to understand an industry's positioning in comparison to its competitors and to provide insight into growth trends. Studying respondent opinions around market forces and business prospects can also suggest the constraining and enhancing factors across the value chain and measures to improve performances (Webber and Labaste, 2011).

In this chapter, competitiveness is defined and context to this definition given by exploring the evolution of competitiveness theory. Methods for analysing competitive performance within the agribusiness industry are discussed and the background to the methods used in this study is presented.

2.2 Evolution of competitiveness theory

Competitiveness theory has developed over the past 250 years. Its evolution is presented in Figure 2.1 and adaptations are explained below.

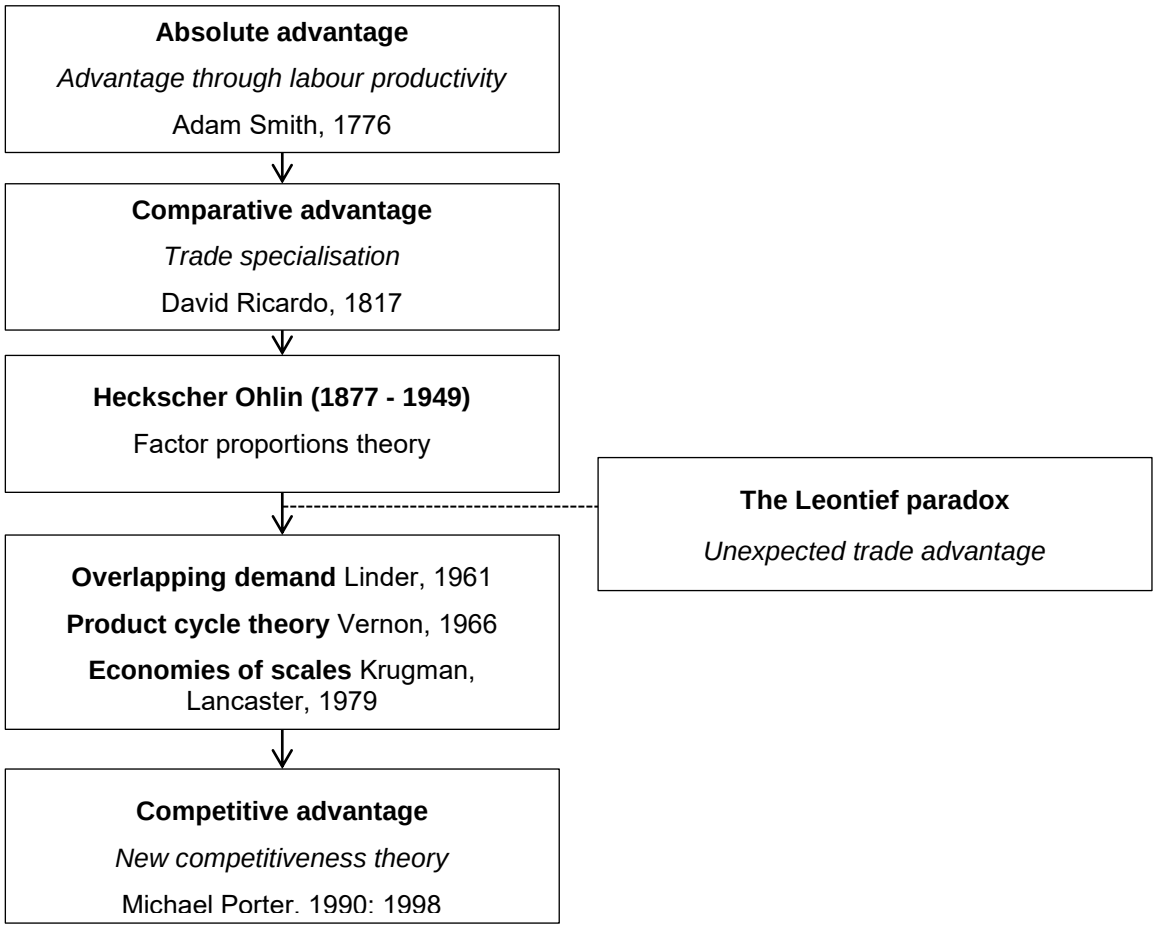

Figure 2.1 Evolution of competitiveness theory from Adam Smith to Michael Porter

Data source: (Esterhuizen and Van Rooyen, 2006; Cho and Moon, 2013; Angala, 2015)

2.2.1 Competitiveness through absolute advantage

The first step in the development of competitiveness theory is attributed to Adam Smith (Smith, 1776). Smith introduced the theory of *absolute advantage*, which he developed by comparing the labour burden of producing a given product in different countries (Cho and Moon, 2013). Coming out of an era that promoted mercantilism, Smith argued that competitiveness could be optimised if countries focused their industrial efforts on items for which they displayed an inherent productivity, in terms of labour and volume efficiency (Cho and Moon, 2013).

Smith's theory of absolute advantage (Smith, 1776) promoted specialisation based on national productivity strengths to maximise economic gain (Cho and Moon, 2013). This gain would place the country in the strongest position possible to import the products for which they were as productive, thereby leveraging the productivity of other countries (Cho and Moon, 2013). The theory of absolute advantage challenged the thinking at the time, as it required governments to support free trade by removing trade protection policies that could otherwise hamper the trade needed to maximise national advantage (Cho and Moon, 2013).

2.2.2 Competitiveness through comparative advantage

The theory of comparative advantage was developed by David Ricardo (Ricardo, 1821) to challenge the theory of absolute advantage (Smith, 1776). Ricardo asked what would result when there is inequality in labour productivity for the same products between trading countries (Cho and Moon, 2013). Some countries are capable of producing a range of products, all at different labour efficiencies (Cho and Moon, 2013). Less well-endowed countries may produce some of the same products as better-endowed countries, but less efficiently. They may therefore, struggle to trade or may be able to import the same product for less than they can produce it themselves (Cho and Moon, 2013). Ricardo's solution was to create a more equal trading potential through trade specialisation, while still optimising profit (Ricardo, 1821; Cho and Moon, 2013). The comparative advantage theory suggests that if one country can produce a given product more efficiently than a trading partner, it should optimise its economic gains by specialising in that product rather than spreading its labour across products with lesser efficiencies (Ricardo, 1821; Cho and Moon, 2013).

Ricardo used an analogy of wine and cloth production in Portugal and England to explain his theory (Ricardo, 1821; Cho and Moon, 2013). Say Portugal can produce wine with 80 men and cloth with 90 men, and England can produce the same products with 120 men and 100 men, respectively. Comparative advantage theory calls each country to produce and trade at its strength (Cho and Moon, 2013). Portugal should focus on its most efficient product, wine, leaving England to produce cloth, the product that it is most efficient at producing (Ricardo, 1821; Cho and Moon, 2013). Even though England is less efficient at cloth production than Portugal, both countries producing to their strengths results in maximum economic gain for each country. Their profit optimises each country's buying power in trade (Cho and Moon, 2013).

2.2.3 The role of factor endowments

While Ricardo's comparative advantage theory was based on labour productivity as a measure of national productivity, the reason for the productivity discrepancy between countries remained unexplained (Cho and Moon, 2013). Hecksher and Ohlin's (HO) model explained that a country's productivity in a specific product is proportional to that country's natural endowment in that factor (Cho and Moon, 2013). Factor endowment

assumes that the product is readily available and explains the ability to produce a high-quality product at scale, thereby improving efficiency (Cho and Moon, 2013).

Comparative advantage therefore creates production efficiency through specialised industry that leverages natural endowments.

2.2.4 The Leontief Paradox

In 1953, Leontief published findings that contradicted the rationale behind the HO model (Cho and Moon, 2013). He considered the production environment in the United States and noted that it was the most capital-rich country in the word (Cho and Moon, 2013). According to the HO model, the United States of America (USA) should therefore have a comparative advantage over the rest of the world for producing capital-rich goods and should have had capital-rich exports, off-set with labour-intensive imports (Cho and Moon, 2013). However, Leontief found that in reality, USA imports were up to 30% more capital-intensive per labour unit than local USA goods – a direct contradiction of the HO model predictions.

Attempts to explain this paradox attributed the unexpected result to the high productivity of USA labour and the relative scarcity of natural resources in the USA, requiring the import of capital-rich raw materials (Cho and Moon, 2013). However, these suggestions could not account for the full 30% labour differential (Cho and Moon, 2013).

Vernon (1966), Linder (1961), Krugman (1979), and Lancaster (1979) all built on Leontief's trade theory, adding the product cycle, similarity between countries, and economies of scale in trade (Cho and Moon, 2013). However, it was not until Michael Porter challenged absolute and comparative competitiveness in his 1990 book "The competitiveness of nations" and subsequent writings that there was a significant change in how competitiveness was viewed and measured (Porter, 1990; Cho and Moon, 2013).

2.2.5 New competitive theory: Porter's competitive diamond model – creating competitive advantage through strategic focus

Michael Porter (1990) shifted perspectives around competitiveness with his view that competitive advantage can be created through strategic focus and is not dependent on factor endowments alone (Cho and Moon, 2013). Porter followed ten prominent trading countries over four years and concluded that competitiveness was driven out of a "forward-looking, dynamic and challenging" local industrial climate (Porter, 1990; Cho and Moon, 2013). He attributed sustainable economic success to six categories for factors that constrain or enhance competitiveness (Cho and Moon, 2013). The resulting model, Porter's diamond, is used today as a best-practice tool for classifying and assessing qualitative competitive factors (van Rooyen, Esterhuizen and Stroebel, 2011).

Porter's diamond, shown in

, includes four key determining factors and two supporting factors. The four key factors are production factor conditions (PF); demand conditions (DF); relating and supporting industries (RS); and firm strategy, structure, and rivalry (FR). However, these key factors do not account for government-related factors (GF) or elements of chance (CF), which can have a significant effect on competitiveness and are thus included as additional factors. This combination of determining factors provides a complete framework into which influencing forces can be classified.

Each factor is discussed in the context of the wine industry below.

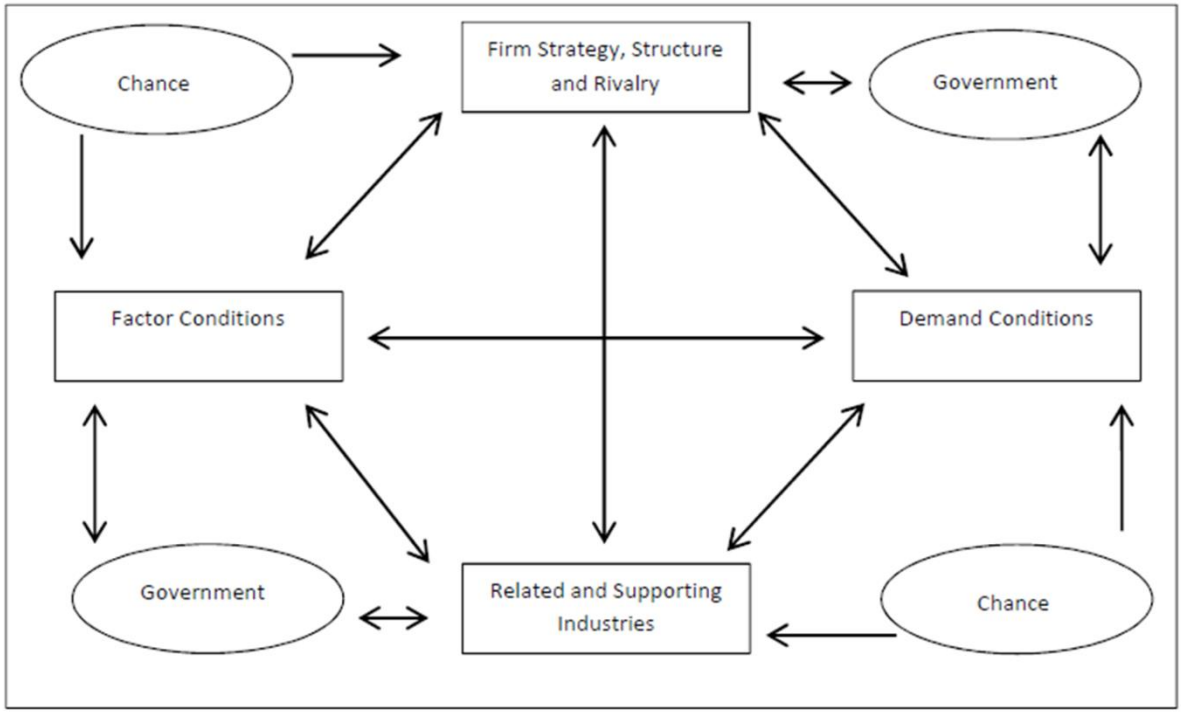

Figure 2.2 Porter's diamond, comprising six determinants of competitiveness

Data source: Porter's diamond (Porter, 1990)

2.2.5.1 Production factor conditions

Production factor conditions include acquired and naturally occurring factors that influence production and thus an industry's ability to compete (van Rooyen, Esterhuizen and Stroebel, 2011). In the wine industry, they include terroir, climate, production costs, infrastructure, and the availability of skilled labour.

2.2.5.2 Demand conditions

Competitiveness in the wine industry can only exist where there is healthy demand for wine. Demand conditions include the strength of the export market, local availability of cultivars, and factors that influence consumer buying trends, such as growing awareness around health (van Rooyen, Esterhuizen and Stroebel, 2011).

2.2.5.3 Relating and supporting industries

This factor is linked to the competitive landscape within the supplier base that supports the wine industry and the associated industries necessary for wine production and trade (van Rooyen, Esterhuizen and Stroebel, 2011). Key factors include the local availability of quality technology, quality of local suppliers, and level of assistance and advice provided by the government.

2.2.5.4 Firm strategy, structure, and rivalry

This factor includes both internal and external forces. An example of an internal force is a wine producer's business structure and ongoing management practices, which can enable or hinder success (van Rooyen,

Esterhuizen and Stroebel, 2011). External forces include rivalry between producers and whether this can be leveraged as healthy competition to drive the industry (van Rooyen, Esterhuizen and Stroebel, 2011). The level of local and international competition and the influence of scale on the value chain are key issues here.

2.2.5.5 Government Policy and Interventions

Government policy is particularly applicable in the South African wine industry. Quality requirements impose a high level of regulation, and labour regulations and political pressures affect strategic positioning (van Rooyen, Esterhuizen and Stroebel, 2011).

2.2.5.6 Chance

Chance is a relevant determinant within the South African market due to the weak current exchange rate and its volatility, and the effect of major world events on the South African trading climate (van Rooyen, Esterhuizen and Stroebel, 2011).

Data for this part of the analysis were collected through the WES and a follow-up focus group (Chapter 5). Key constraining and enhancing factors identified from the industry feedback were classified according to the most appropriate determining factors within Porter's diamond (Porter, 1990). The results of this analysis were then used to make recommendations for which factors to address and how to shift the competitive landscape (Chapter 6).

2.2.6 Extending Porter's diamond

Since its development, Porter's diamond has been adapted and extended (**Error! Reference source not ound.**). The first challenge to the model came from Rugman and D'Cruz (1993), who found Porter's diamond lacking in countries with small, open, trading economies. They developed the double diamond model to accommodate these economies (Rugman and D'Cruz, 1993).

(Cho, 1994) expanded Porter's diamond to accommodate human influence on the rapid economic development that took place in Korea. He divided sources of competitiveness in developing economies into human and physical sources, resulting in a final model of eight factors (Cho, 1994). Cho (1998) suggested that the importance and prominence of each factor will differ in different phases of a nation's development.

Figure 2.3 Influence of Porter's diamond on recent competitiveness research

Data source: (Rugman and D'Cruz, 1993; Cho, 1994; ISMEA, 1999; Webber and Labaste, 2011)

Porter's diamond was adapted to consider the economic implications of adding several Eastern European countries to the EU (ISMEA, 1999). The World Economic Forum used Porter's diamond in its annual "World Competitiveness Report", in which it ranks and tracks countries' competitiveness against economic factors.

Porter's diamond has also been used to study the African perspective. Webber and Lambaste (2011) applied the model in a value-chain analysis of African agribusiness, using agribusiness-specific factors to analyse the business environment (Webber and Labaste, 2011). The South African context was also rated as somewhat unique. During a speech about creating competitiveness in South Africa , Porter suggested the need for both social and economic objectives (Porter, 2007). He acknowledged the social and transformational issues at play in South Africa and their effect on the economy, and suggested that addressing these issues could raise the potential of the labour force, feeding positively back into the economy (Porter, 2007). However, applications of Porter's diamond in the South African context have not yet included the addition of a socio-economic/transformation factor. Chapter 6 considers this gap in the literature by exploring whether adding a socio-economic factor to Porter's diamond can account for the complex competitive landscape in South Africa and similar developing countries with its transitional economy.

2.3 Competitiveness in the evolving market

Many factors and considerations are at play in the evolving market space. Producers need to keep abreast of changes in consumer demand through innovation and communicate their relevance through marketing (Ezeala-Harrison, 2005) and through effective value chain interactions (Webber and lambaste, 2011).

Some countries or sectors compete solely on price in the international arena as it brings in significant national income (Ezeala-Harrison, 2005). However, this strategy undermines the profitability – and, in turn, sustainability – of the industry as returns are often too small for reinvesting in upgrading production equipment and technology (Ezeala-Harrison, 2005). Trade performance alone is also not a sufficient indicator of competitiveness, but is rather a key indicator of industry performance (Ezeala-Harrison, 2005). Freebairn argues that an industry will only remain competitive if, at minimum, the opportunity cost of any investment in that industry can be recovered through export (Freebairn, 1986). An industry should also show signs of investor confidence by attracting investment and scarce resources, like skilled workers (Freebairn, 1986).

Two major factors interact: competitive success within the market in terms of market share and the ability to perform at the greatest economic efficiency to release the highest profit (Frohberg and Hartmann, 1997). The more competitive the global markets become, the greater the role that efficiency plays in determining competitiveness (Haipeter, Lehndorff and Voss-dahm, 2005). Efficiency involves optimising resources and value chains to maximise a desired output characteristic.

While some competitive strategies are innovative and driven out of a need to differentiate from the competition, others are dictated by key players (Haipeter, Lehndorff and Voss-dahm, 2005). In such cases, key players determine a best-practice way of working that the rest of the market must adapt to in order to remain competitive (Haipeter, Lehndorff and Voss-dahm, 2005). The quest to be and remain competitive is as important as the ability to measure and monitor competitiveness (Webber and Labaste, 2011). Being able to monitor and assess competitive factors contributes to an industry or sector remaining competitive in a changing marketplace.

It is thus only through continuous investigations of factors impacting competitiveness, innovation, and adaptation that the South African wine industry can become sustainably competitive in an open market with many suppliers competing for sales. However, competitiveness is also at the mercy of factors that are out of the direct control of an industry, such as economic policy and, in the international arena, the exchange rate. South African wines must identify or create a major differentiating factor to drive competition over competing wine-producing economies and alternative production activities such as citrus and vegetables (Ezeala-Harrison, 2005).

2.4 Role of competitiveness

Competitiveness is the ability of an industry, firm, sector, or country to outperform its competition (van Rooyen, Esterhuizen and Stroebel, 2011). Outperformance can be the result of one dominating factor or a combination of factors that create a synergistic competitive advantage (van Rooyen, Esterhuizen and Stroebel, 2011). Competitive factors can include price, product offering, quality, service, or production factors such as land, capital, skilled or affordable labour, and appropriate technology (van Rooyen, Esterhuizen and

Stroebel, 2011). True competitiveness is also sustainable in the long term, rather than relying on short-term, opportunistic actions (van Rooyen, Esterhuizen and Stroebel, 2011).

For any factor to successfully drive competitiveness, it must be a result of successful differentiation at some level. Differentiation factors are similar to competitive factors, but factors rather become competitive as a result of effective differentiation and innovation against competitors. The ability to constantly adapt and remain in demand within the competitive landscape is the key to sustained competitive success (van Rooyen, Esterhuizen and Stroebel, 2011).

Differentiating factors may influence the attractiveness of a product through its perceived health benefits. It is particularly important to explore these issues for an alcoholic product like wine. Health trends and the media strongly influence the buying patterns of health-conscious consumers. A better understanding of the enhancing and constraining health-related factors in an industry will allow that industry to respond in a strategic manner to capitalise on consumer preferences.

A better understanding of the factors and determinants affecting competitiveness should empower the South African wine industry to develop a robust strategy to boost competitiveness and build resilience.

2.5 Analysing competitiveness in South Africa and the South African agribusiness environment

Several publications track national or industrial competitive performance. The World Economic Forum's annual "Global Competitiveness Report" provides annual competitiveness ratings for 140 participating countries against 12 pillars (World Economic Forum, 2018). Tracking competitive performance over time provides insights into competitiveness trends, which can be used to guide strategic national or industry-level decision-making.

In the most recent "Global Competitive Report," South Africa's ranking dropped to 67th place (with an overall score of 60.8 out of 100) from its ranking of 61st in 2017 (World Economic Forum, 2017, 2018). South Africa was highlighted as a country notorious for crime and violence (World Economic Forum, 2018). Although South Africa is the second-highest ranked country in sub-Saharan Africa, its significantly low scores in some pillars prevents it from positioning itself as a thriving economy in the fourth industrial revolution (World Economic Forum, 2018). South Africa's recent ranking and performance across the 12 pillars is presented in Figure 2.4.

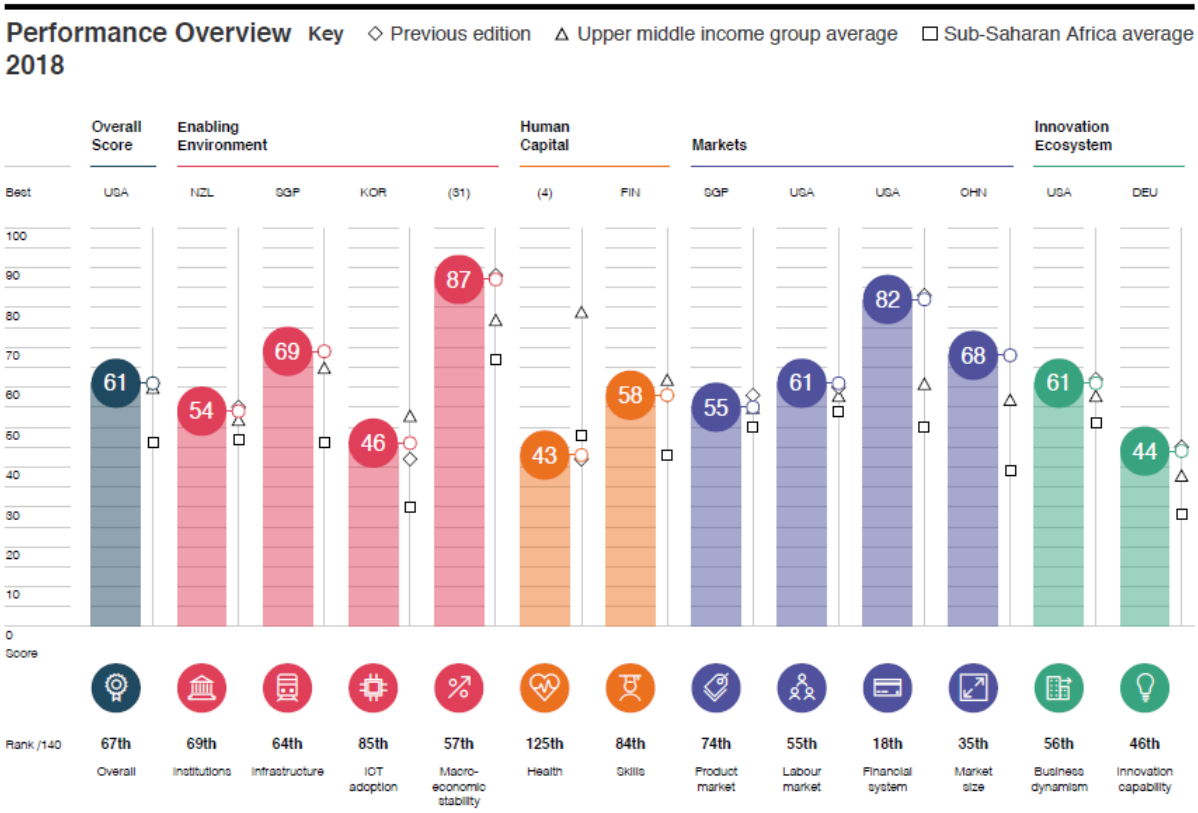

Figure 2.4 The Global Competiveness Report: South African performance overview

Data source: (World Economic Forum, 2018)

However, the above competitiveness analysis does not included sector-based investigations, only national/country-level analysis. As a measurement of industry-level competitive performance, the ISMEA (1999) set a benchmark by studying the impact that added competition from non-EU imports would have on several European agro-food industries (ISMEA, 1999). This report offered an industry-based analytic framework that has since been used as the basis for many agricultural environment studies that merge objective measurements and subjective opinions following Porter's diamond. Table 2.1, taken from the "Agri-Competitiveness Matrix" (Van Rooyen and Boonzaaier, 2017) summarises publications that analysed competitiveness in agricultural industries. The first section includes relevant international competitiveness studies, followed by South African competitiveness studies in the second section. The third section focuses on agribusiness-specific research in South Africa. Trade-based measures such as the RTA and RCA have been used as measurements of competitiveness by studies in all three sections.

According to "The Global Competitiveness Report," South Africa's competitiveness is in a declining phase. This concerning decline was also been noted in the "Agri-Competitive Matrix" (Van Rooyen and Boonzaaier, 2017).

This study aimed to analyse and determine the actual situation in the South African wine industry, assess whether the decline was relevant to the wine industry and, if so, explore reasons for this decline and suggest how it could be improved. The methodology was based on that used in previous South African agricultural studies (Esterhuizen and Van Rooyen, 2006; van Rooyen, Esterhuizen and Stroebel, 2011; Boonzaaier, 2015; Xolela, 2018), adapted to accommodate the particular nature of the South African wine industry.

Table 2.1 Competitiveness-based research at an international, South African, and South African agribusiness level

Authors or researchers	Proxies and/or models/frameworks for competitiveness applied	National industry or sector evaluated/analysed	Verdict or conclusions drawn
1. Overview of international studies on competitiveness			
ISMEA (1999)	RTA, Porter's diamond model	The European agro-food system	Scope for European Union integration
Ferto and Hubbard (2002)	RCA, RTA	Hungarian agricultural food sector	Hungary had a comparative advantage in 11 of the 22 aggregated agricultural products
Thomas (2007)	Porter's diamond	Namibian table grapes	The Namibian table grape chain is relatively competitive in the international market. Primary production is becoming more competitive
Aktha, Sharif and Shas (2009)	RTA	Competitiveness of Pakistan's fruit exports	Pakistan has a comparative advantage in fruit export (mangos, dates, and oranges). It has a relatively high comparative and competitive advantage in date and mango production
Ruma (2011)	RTA, CEP	Vegetables, fruit and flowers in India	India has a competitive advantage relative to its major rivals
Tuna, Goerigiev and Nacka (2012)	RCA, Porter's diamond	Tobacco sub-sector in the Republic of Macedonia	The Republic of Macedonia has favourable conditions and a competitive advantage for producing tobacco
Adegbite, Oni and Adeoye (2014)	PCR, DRC, PAM	Pineapple production in Osun State, Nigeria	The pineapple production system using the sucker method is more competitive and has a higher comparative advantage than the crown production system.

Eskandari et al. (2015)	Michael Porter's five forces model	Food industry in Hamadan Province, Iran	Competition among competitors is important to determine the competitiveness of the food industry
Khai, Ismail and Sidique (2016)	RCA, RTA	Shrimp products in Malaysia	Malaysian shrimp exports were not competitive internationally. RCA and RXA indexes showed some competitiveness of non-frozen shrimp products
2. South African applications of competitiveness			
Kalaba and Hanneberry (2001)	Import demand models - Source-differentiated AIDS model - Restricted SDAIDS models	The effects of a free-trade agreement on South African agriculture: Competitiveness of fruits in the European Union market	Chile and the USA showed a strong competitive advantage over SA in some fruits. There is a complementary relationships between SA and USA apples
Van Rooyen, Kirsten and Collins (2001)	DRC, RCA, PCR, PAM, Porter's diamond	The competitiveness of the South African and Australian flower industries	When all of the methods were applied, the results revealed that SA has a competitive advantage in the production of flowers. Porter's diamond showed more competitive advantage for Australian flowers. Both SA and Australia had a comparative advantage for Australian flowers
Esterhuizen, Van Rooyen and Van Zyl (2001)	RTA	The competitiveness of the agricultural input industry in South Africa	The fertiliser industry was viewed as competitive, while the pesticide industry had decreasing competitive performance. The machinery industry was uncompetitive. The agro-food and fibre industry showed an increasing trend of competitiveness
Mahlanza, Mendes and Vink (2003)	SCB, DRC, PAM	Comparative advantage of organic wheat production in the Western Cape	The results showed a comparative advantage for wheat grown under organic practices. The results showed the existence of distortions in the market, even under organic wheat production practices
Mosona (2004)	RTA	Agricultural competitiveness and supply chain integration: South	SA agricultural commodity chains are marginally

		Africa, Argentina and Australia	competitive
Esterhuizen and Van Rooyen (2006)	RTA	An inquiry into factors impacting on the competitiveness of the South African wine industry	The SA wine industry has improving competitiveness. This competitiveness is constrained by the size of the domestic market, the strong rand, and crime, among other identified impacting factors. An efficient supporting system and intense competition in the market are among the enhancing factors
Mashabela and Vink (2008)	RTA	Competitive performance of global deciduous fruit supply chains: South Africa	SA deciduous fruit supply chains are internationally competitive. Chile supply chains for deciduous fruit are internationally more competitive. The SA supply chain loses its competitiveness status when moving from primary to processed products
Van Rooyen et al. (2011)	RTA, Porter's diamond	Analysing the competitive performance of the South African wine industry	SA wines are internationally competitive, with an increasing trend. The fluctuating exchange rate and changing market trends play a significant role in the competitive performance of the industry
Van Rooyen and Esterhuizen (2012)	RTA, Porter's diamond	Measuring and analysing trends in competitive performance: South African agribusiness during the 2000s	The results showed that agribusiness is marginally competitive and is constrained
3. Recent competitive performance of the South African agricultural sector			
Sinngu and Antwi (2014)	RCA, RTA, NXi, Porter's diamond	Competitiveness of the South African citrus fruit industry relative to its Southern Hemisphere competitors	SA citrus industry is globally more competitive than its Southern Hemisphere rivals. However, its competitiveness declines when moving down the value chain. The BEE policy, labour policy, and tax system were found to be some of constraining factors of the industry
Jafta (2014)	RTA, Porter's diamond	An analysis of the	The SA apple industry achieved sustained competitive

		competitiveness of the South African apple industry	performance in the reviewed period. However, when the industry was compared to major rivals, it was outperformed by Chile and New Zealand in the Southern Hemisphere
Boonzaaier (2015)	RTA, Porter's diamond	An inquiry into the competitiveness of the South African stone fruit industry	The SA stone fruit industry's competitiveness is outperformed by Chile in the Southern Hemisphere and France in the Northern Hemisphere. Strategy, structure, and rivalry were viewed as the most enhancing determinants
Sihlobo (2016)	RCA, agri-benchmark production model, growth share matrix, indicative trade potential index, market attractiveness index (MAI), and relative indicative trade potential index	An evaluation of the competitiveness of the South African wheat industry: A hedonic price model	SA maize exports are competitive. The competitive advantage falls below that of Brazil, Argentina, and the USA in the production cost analysis. The United Arab Emirates, Japan, and Mexico were identified as high-potential export markets for SA maize
Van der Merwe et al. (2016)	Hedonic price model	Factors influencing the competitiveness of the South African wheat industry: A hedonic price model	The findings showed that changes in prices are mainly a function of colour, P/L, defects, and fall
Davids and Meyer (2017)	Univariate time series analysis qualitative approach	Price formation and competitiveness of the South African broiler industry in the global context	The technical efficiency of South African producers is on par with international standards. The domestic chicken price is more elastic to variations in the import parity price than changes in feed costs
Valenciano et al. (2017)	Constant market share	South Africa's competitiveness against its main competitors in the market of pears imported by EU28	SA pears were competitive in the European Union market before the global financial crisis. After the meltdown, exports of pears from SA to European Union rose by a low margin at a slow rate
Dlikilili (2018)	RTA, Porter's diamond, two-step Delphi	Measuring the competitive performance of the South African	The SA citrus industry is competitive and has maintained positive figures since the early 1960s. When compared

		citrus industry	with global competitors, it is being challenged by the most powerful nations in the Southern and Northern Hemispheres
Dlikilili and Van Rooyen (2018)	RTA	Measuring the competitive trends of the South African citrus industry	SA citrus industry is competitive and has maintained positive figures since the early 1960s. When compared with global competitors, it is being challenged by the most powerful nations in the Southern and Northern Hemispheres.

Data source: (Van Rooyen and Boonzaaier, 2017). BEE, black economic empowerment; CEP, comparative export performance; DRC, domestic resources cost; NXi, Net Export index; PAM, policy analysis matrix; PCR, private cost ratio; RCA, relative comparative advantage; RTA, relative trade advantage; SA, South Africa; SCB, social cost benefits; USA, United Stated of America.

2.6 Defining competitiveness in the wine industry

Defining competitiveness translates theory in to measurable and analytical concepts. Freebairn (1986) defines business competitiveness as an indicator of the "ability to supply goods and services in the location and form and at the time they are sought by buyers, at prices that are as good as or better than those of other potential suppliers, while earning at least the opportunity cost of resources employed" (Freebairn, 1986). A similar approach has been followed by recent studies on competitiveness in the South African agribusiness environment (Esterhuizen and Van Rooyen, 2006; Boonzaaier, 2015; Abei, 2017; Xolela, 2018). This approach highlights the opportunity cost of trade and alternative choice, especially for investors and business, as core components of a definition.

Freebairn also links the definition of international competitiveness with a supplier's ability to sustain desirability over local and imported alternatives as a result of cost and product quality (Freebairn, 1986). However, sustainability of preferential trade is more complicated than simply maintaining a cost and quality advantage as it depends on the supplier adapting over time to changes in the market, customer requirements, technological advancements, and shifts in logistics patterns (Freebairn, 1986). Long-term sustained supply is only possible if trade covers at least the opportunity cost of the scarce resources required to sustain the supply, thereby enabling a sustainable business for the producer (Freebairn, 1986). Product costings must be set strategically, while remaining inclusive of marketing and other costs alongside direct production costs (Freebairn, 1986).

Others have defined competitiveness in relation to Ricardian theory: the concept of competitiveness requires access to international trade and a free market (Ezeala-Harrison, 2005). This trade needs to be founded on sustainable business that brings actual returns to the economy and benefits its citizens (Ezeala-Harrison, 2005). Positive competitiveness must therefore involve sustainable economic growth with economic benefits on all levels across the value chain (Ezeala-Harrison, 2005). This approach can be complicated by the need to change market prices to economic prices through "shadow pricing" (Gittinger, 1982). Competitiveness can be assessed at the level of the sector, enterprise, or entire economy, depending on the purpose of the analysis (Frohberg and Hartmann, 1997).

Assimilating aspects of the definitions above – together with the strong global trade orientation of the SA wine industry and this study's aims to measure and analyse competitive performance through a set of pertinent research questions – gives the following definition of competitiveness:

"The ability of the South African wine industry to sustain or grow business through trade for South African wine amidst a changing agricultural, political, social, environmental, governance, and production landscape and unpredictable exchange rates, while consistently earning at least the opportunity cost of resources employed" (Ezeala-Harrison, 2005).

2.7 Measuring wine industry competitiveness

Competitiveness links directly with productivity, which is a key driver of economic efficiency and higher income levels across a population (Cann, 2016). Measuring and assessing these factors is thus extremely important for unlocking competitiveness, uplifting economies, and improving livelihoods within those economies (Cann, 2016). While competitiveness is by no means an all-inclusive measure of success, the

World Economic Forum (Cann, 2016) promotes competitiveness as a strong indicator of sustainable growth and a predictor of future economic health (Cann, 2016).

The South African wine industry is dependent on export for both current and future prosperity (van Rooyen, Esterhuizen and Stroebel, 2011). Exports have made up at least 40% of the production volume since 2005, and this market needs to be grown or maintained to secure a future in trade (van Rooyen, Esterhuizen and Stroebel, 2011; Vinpro, 2018a).

Although there are qualitative measures of competitive performance in line with the World Economic Forum methodology, it is also important to measure competitive performance through empirical methods to provide accurate insight into growth trends. Historical trade-based import and export data were used in this study as the wine industry is dependent on competitive trade in the global market.

2.8 Competitiveness measurement tools

Within the trade-related competitiveness framework, the relative trade performance is an important measurement for determining a rating of competitiveness (Rendleman *et al.*, 2016). A second contributor to this rating is Porter's diamond, with the six Porter determinants shaping an enquiry into factors related to production factors, related and supporting industries, firm strategy, structure and rivalry, government and policies, demand conditions, and chance factors.

Two empirical measuring indexes, the RCA and RTA, will be considered in more detail as both are strongly trade-performance-oriented, which is a characteristic of the South African wine industry.

2.8.1 Relative comparative advantage (RCA) index

The basic determining equation for the RCA index, developed by Bela Ballasa (1965) to gauge trade trends in a competitive world, is a ratio of national export values for a specific product against total national export value, divided by the export value for that product in the world divided by overall global export value, all at market prices:

$RCA_{ij} = (X_{ij}/X_{it}) / (X_{wj}/X_{wt})$,

where x denotes exports, *j* is export values of the specific product, *i* is the chosen country, *w* is the world export, and *t* is the total global trade value (WITS (The World Bank), 2010).

The RCA index value indicates an industry's competitiveness through product export. An RCA over 1 indicates positive competitiveness and an RCA below 1 indicates negative competitiveness (WITS (The World Bank), 2010).

The RCA provides insights into the trade performance (export) of a specific country in comparison with global trade. However, it does not show whether this trade results in domestic surplus or shortfall. The disadvantage of the RCA is that it does not consider imports (WITS (The World Bank), 2010).

2.8.2 Relative trade advantage (RTA) index

The RTA index was developed by Balassa (1989) and refined by Vollrath (1991) (van Rooyen, Esterhuizen and Stroebel, 2011) in response to the RCA index oriented towards comparative advantage (Balassa, 1965). The RTA has been called a superior indicator of competitiveness over other frequently used key trade

indicators such as the relative import penetration (RMP) index and the RCA index (Frohberg and Hartmann, 1997). The RTA gives a comprehensive view of competitive trade performance that includes both imports and exports at market prices. It is supported by Porter's new competitive theory (1990, 1998). The RCA formula only references export trade as a measurement of comparative advantage and the RMP only refers to import penetration. In contrast, the RTA provides a clear overview of trade and the relative difference between export and import across a chosen sector or economy (Frohberg and Hartmann, 1997):

$RTA_{ij} = RCA_{ij} – RMP_{ij}$,

where RCA_{ij} is the relative export advantage for a chosen product in a specific country and RMP_{ij} is the relative import penetration for the same product in the same country (Frohberg and Hartmann, 2017).

This measurement of the flux between import and export is useful as it creates a wide competitive overview (Frohberg and Hartmann, 1997), giving insight into the balance between import and export advantages and thus indicating overall industry competitiveness within a certain country (Frohberg and Hartmann, 1997). As with the RCA and RMP, an RTA value greater than 1 indicates a competitive advantage, whereas a value less than 1 indicates an absence of competitive advantage, also known as a competitive disadvantage (Frohberg and Hartmann, 1997).

One important aspect of the RTA measure for competitiveness is defining exactly what it measures and how the RTA result can be used effectively. The RTA measures the relative trade advantage that a specific product or industry has over other products or industries within that same country or region. It can therefore show the relative trade advantage of one product or industry over another within a specific country, but also in relation to the overall global traded value. This information can be used to assess which industry or sector offers the greatest investment potential and can highlight opportunities for growth and expansion. From a national investment perspective, the RTA can be used by decision-makers to understand which industries are the most competitive within a sector or economy.

The RTA is a useful tool for international investors looking to invest but wanting to select a portfolio in countries where an industry is most competitive. However, the RTA should always be assessed alongside other factors, such as which other industries are dominant in that economy, to provide a fair perspective when interpreting the RTA. An overview of relative competitiveness is a powerful, fact-driven tool for influencing investment and development opportunity.

A key aspect of competition is the ability to attract scarce resources (van Rooyen, Esterhuizen and Stroebel, 2011). Scarce resources are necessary to grow an industry. The ability to attract and retain these resources and investment is an indication of industry performance and investor confidence (van Rooyen, Esterhuizen and Stroebel, 2011). Another benefit of the RTA as an indicator of competitive advantage is that it accommodates market values and costs, as it is affected by government support policies, subsidies, and non-competitive factors (van Rooyen, Esterhuizen and Stroebel, 2011). The RTA and RCA models are able to take into account the many factors that affect comparative advantage, such as distorted economies and protective trade policies.

2.8.3 Database selection

Two major databases serve as the source of the trade statistics needed for determining the RTA: the FAO and ITC databases. Each database has different advantages and disadvantages. One database can be selected based on the scope of a research project. Alternatively, both databases can be used and the results compared to identify common determining factors (FAO, 2017). As the FAO and ITC datasets contain time-series data, a trend analysis can be performed and the phases of competitiveness analysed.

The FAO database contains information from 1961 onwards and from 245 countries (FAO, 2017). As it contains earlier data than the ITC database, it offers more depth in exploring trends through history. However, the FAO database is limited to agricultural trade, so is only ideal for use in studies limited to an agricultural scope.

The key advantage of the ITC database is its scope, as it includes all internationally-traded goods across all sectors. Any competitiveness calculations that need to consider trade outside of the agricultural sector should therefore use the ITC database. One disadvantage of the ITC database is that it was only established in 2001, so only offers data from 2001 onwards (ITC, 2017). It therefore does not offer insight into trade trends as far back in time as the FAO database.

This study assessed competitive performance from an economy-wide perspective and, therefore, the data used needed to be drawn from a data source with an economy-wide scope. There is no granularity for traded sub-categories within the wine category (i.e. bulk vs bottled wine), so the FAO database only provides an overview for total wine trade. The ITC database was thus chosen as the data source for this study.

2.9 Conclusion

There are several measurements for rating competitiveness that depict trade flows, productivity, cost benefit measures, and resource cost comparisons, for example (Boonzaaier, 2015). The RTA was selected for this study because of its inclusiveness of both import and export trade values. The ITC database (ITC, 2017) was selected as the source of trade values (unless otherwise mentioned) to allow the performance of the South African wine industry to be compared with total national industry competitiveness, as investment is often not limited to the agricultural sector.

The defining evolutionary steps of competitiveness all contributed towards Michael Porter's New Competitiveness Theory (Porter, 1990) of competitiveness as being determined by competitive advantage. Understanding the factors that enhance and constrain the competitive environment within the South African wine industry will help key decision-makers in industry and government to make strategic choices to position the industry to improve its competitive advantage over other wine-producing countries.

The analytical framework used in this research assignment and empirical and qualitative data-gathering methods will be discussed in Chapter 3.

3 Analytical Framework and Data

3.1 Introduction

The purpose of this chapter is to define the analytical framework and explain the research methodology used for the competitive analysis of the South African wine industry. The stepwise framework was guided by the research questions and hypothesis stated in Chapter 1; the definition of competitiveness in Chapter 2; calculating the competitive performance of the South African wine industry; identifying and analysing the major factors that determine the competitive performance of the industry; and drawing meaningful conclusions and strategic recommendations to boost the competitive performance of the wine industry.

3.2 Stepwise analytical framework

This study followed a similar process to the stepwise analytical framework used in similar previous studies on industry competitiveness (Angala, 2015; Boonzaaier, 2015), adapted to fit the nature of the wine industry. The process is outlined in Figure 3.1 and each step explained in more detail below.

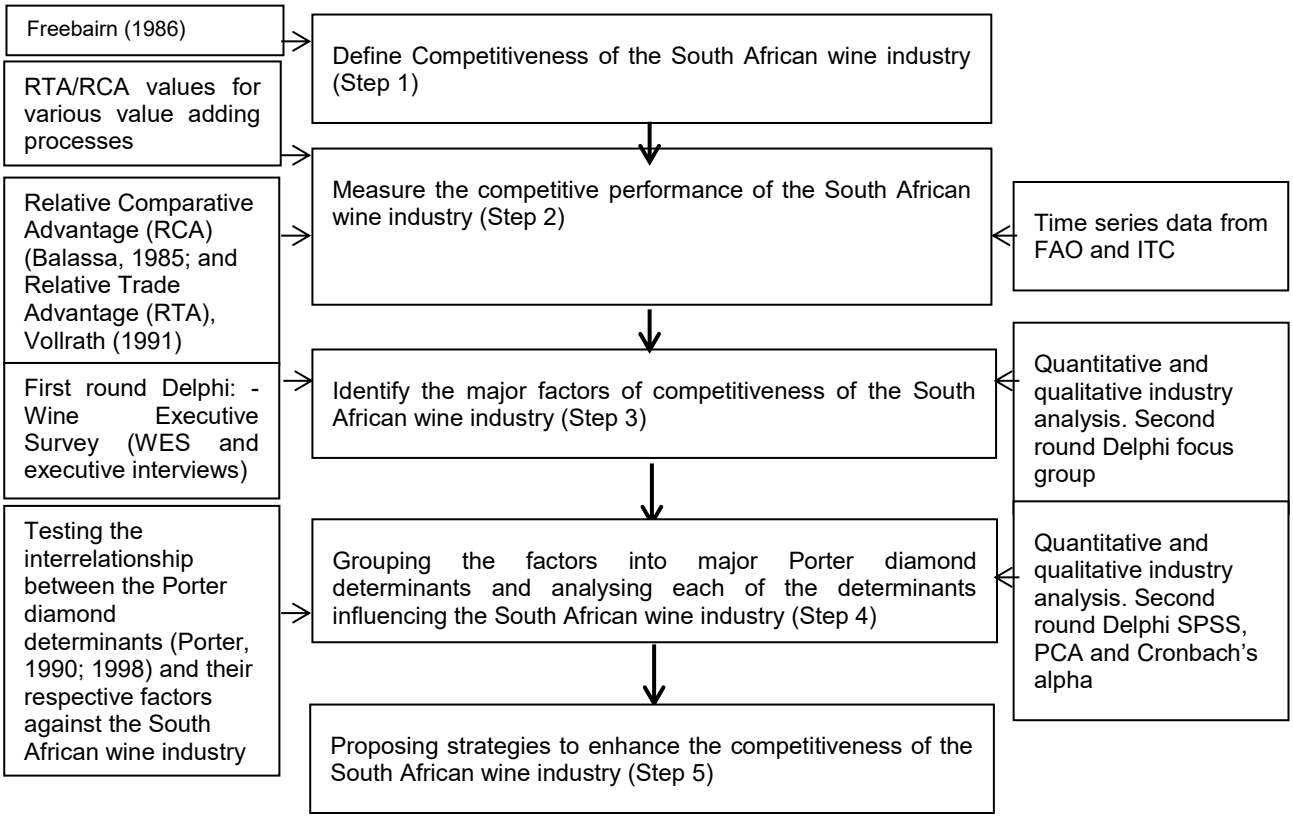

Figure 3.1 Analytical framework for a competitive analysis of the South African wine Industry

Data source: (adapted from Esterhuizen and Van Rooyen, 2006; Angala, 2015; Boonzaaier, 2015; Abei, 2017; Xolela, 2018)

3.2.1 Step 1 – Defining competitiveness

Competitiveness was explored in the literature review in Chapter 2. A definition that considers competitiveness from the wine industry's perspective, particularly its "ability to conduct and sustain trade,

generating income through business performance that covers at least the opportunity costs involved," was selected for this study (Ezeala-Harrison, 2005).

3.2.2 Step 2 – Measuring competitive performance

3.2.2.1 Measurement instrument

The RTA (Vollrath, 1991) is primarily used to determine an empirical value for competitive trade advantage (van Rooyen and Boonzaaier, 2018). The RTA was chosen for this study rather than the RCA because it considers both imports and exports, thereby providing a true reflection of bi-directional trade flow through the South African wine market and of the opportunity cost principle as such. The RTA was calculated following the equation discussed in Chapter 2 and using the Agri-Competitiveness Matrix template (Van Rooyen and Boonzaaier, 2017).

3.2.2.2 Food and Agriculture Organisation data

As explained in Chapter 2, the import and export data needed for calculating the RTA are available from two international trade databases, the ITC and the FAO. Both datasets were used in this study and the results compared.

Data were obtained from the FAO database (FAO, 2017) for the purpose of calculating annual RTA values for the South African wine industry since 1961 and comparing this against the RTA values calculated from ITC-sourced data (ITC, 2017). The FAO database contains data from 245 countries. Although the FAO offers data across a greater date range than the ITC (FAO, 2017), its significant limitation is that wine trade data can only be compared with other traded agricultural products.

The ITC database covers the trade of 220 countries (ITC, 2017). This is a more recent, yet comprehensive (5300 products) dataset for the import and export trade of South African wine and wine products. The depth of breakdown within the wine category (2204) (ITC, 2017) allows RTA values to be calculated for products within the wine value chain and for bulk and bottle packaged wine.

Data obtained from the ITC database was used for all RTA calculations in this study, unless otherwise stated.

3.2.3 Step 3 - Identify key factors influencing the competitiveness of the South African wine industry

3.2.3.1 Delphi process

The Delphi method is designed to obtain consensus of the expert opinions on an issue (Dalkey and Helmer, 1963). Experts are asked a series of questions and their answers are used as primary data to generate a list of opinions held in the area. Experts then rank and comment on this list of opinions to determine the most important. The process can continue iteratively until consensus is reached, with most Delphi processes using two to three rounds. Rounds can be held online or face-to-face.

This study used a two-round Delphi process, first soliciting opinions through an online WES (3.2.3.2), then reaching consensus through a face-to-face focus group discussion and workshop (3.2.4.3). The process was run in collaboration with the industry body, Vinpro. Too few people responded to the survey to produce a

reliable dataset alone. The Delphi method allowed the relevance and ratings of the obtained survey responses to be confirmed. The Delphi method was chosen because, by combining the multiple questionnaire responses with consensus through discussion, a multi-dimensional, validated response was obtained (Dalkey and Helmer, 1963).

3.2.3.2 Wine Executive Survey: first Delphi round

The purpose of this study's WES was to obtain opinions from key players across the South African wine industry value chain. This information was used to complement the RTA data by identifying key factors that enhance or constrain competitive performance in the South African wine industry (van Rooyen, Esterhuizen and Stroebel, 2011). Once analysed, the results from Steps 2-4 of the analytical framework were interpreted together.

3.2.3.2.1 Survey structure and logistics

The survey structure was based on similar previous studies of other South African agricultural industries (Angala, 2015; Boonzaaier, 2015; Xolela, 2018). It was adapted to accommodate the nature of the wine industry and was piloted with VinPro's help to test the relevance of the questions and rating process. A copy of the final questionnaire is given in Appendix 1.

Respondents were asked to rate the influence of 121 potential factors on the competitiveness of the South African wine industry on a 5-point Likert scale (Likert, 1932), choosing between 1,2, 3, 4, and 5. Between 11 and 31 potential factors were presented from each of the six Porter's diamond determinants, under the respective headings (Porter, 1990).

VinPro coordinated the distribution of the survey. The responses were captured in Microsoft Excel for analysis.

3.2.3.2.2 Survey data analysis

Respondents were classified by their position in the value chain as agribusiness or wine business. The agribusiness cluster included grape producers and wine cellars. The wine business cluster included marketers, sales, and other.

3.2.4 Step 4: Classification by Porter determinants and analysis of each determinant influencing the South African wine industry

3.2.4.1 Principal component analysis

Principal component analysis (PCA) is one of the oldest but more widely used multivariate analysis tools for quantitative variables (Abdi and Williams, 2010). Its popularity can be attributed to its versatility, which is a result of the tool's simplicity and adaptability across fields of study and research (Shlens, 2014). One of the key benefits of processing a complex dataset with PCA is that the process identifies underlying data patterns (Vyas and Kumaranayake, 2006; Shlens, 2014). This highly significant data can then be analysed and used by key decision-makers (Boonzaaier, 2015).

PCA was used on the WES responses to compare the consistency and distribution (Boonzaaier, 2015) of responses for each factor in the questionnaire. The PCA results were analysed to identify factors with the

highest degree of observed correlation (Shlens, 2014). Highly correlated factors were those given consistent ratings by the pool of respondents. Uncorrelated factors had a high level of variability between respondents' ratings (Angala, 2015; Boonzaaier, 2015; Xolela, 2018). PCA thus indicated the relevant importance (Shlens, 2014) that each factor represented to the industry across the value chain (Shlens, 2014).

All data were arranged and processed within Microsoft Excel. Ratings from the questionnaires were arranged in a spreadsheet format in Microsoft Excel, then PCA conducted using the International Business Machines: Statistical Package for Social Scientists (IBM: SPSS for Windows 25.0). All results are reported in Chapter 5.

3.2.4.2 Cronbach's alpha

Cronbach's alpha is a tool for measuring the design of a questionnaire containing Likert-type questions (Likert, 1932) by assessing its internal consistency (Tavakol and Dennick, 2011; Boonzaaier, 2015; Xolela, 2018). The tool produces a score between 0 and 1, with 1 indicating a high degree of consistency and 0 indicating no consistency (Tavakol and Dennick, 2011). Although design reliability is desirable, consistency between questions should not be too high, as this can indicate too much interrelation between questions (Tavakol and Dennick, 2011). An alpha value that indicates a high degree of reliability but is less than 0.9 is thus thought to be an indicator of good questionnaire design (Tavakol and Dennick, 2011).

Cronbach's alpha is obtained by correlating a test with itself, creating an estimate of the error within the test (Tavakol and Dennick, 2011). One important mark of Cronbach's alpha is that the reliability score is only valid for a given test in a fixed group of respondents. The score must be calculated for each round of questionnaire-respondent combinations (Tavakol and Dennick, 2011).

Cronbach's alpha assumes that the set of questions being tested are unidimensional (Tavakol and Dennick, 2011). Forty factors, representing all six major determinants, were selected for the test based on their PCA scores (between 0.684 and 0.947) and proportional distribution across the Porter determinants.

3.2.4.3 Focus group feedback: second Delphi round

The second Delphi round took place as a face-to-face consensus-seeking meeting with selected industry experts at the VinPro offices in Paarl (3 December 2018). The PCA results were used to choose factors for discussion in the second round, with the factors with the highest and lowest consensus ratings selected per Porter determinant (Boonzaaier, 2015). The factors with the highest and lowest consensus rating from the PCA The focus group was presented with a brief explanation of the theory behind the study and the results from the first Delphi round. These results included the distribution of the competitive space across the Porter determinants and the impact ratings of the factors within each Porter determinant.

The key outcome of the second Delphi round was to understand the relevance of the factors that were highly correlated in the PCA. The first Delphi round provided ratings based on current industry perceptions. The second Delphi round aimed to assess these factors and rate them based on their relevance to the industry. The respondents discussed each factor until they reached a common understanding of the question and reached consensus on the factor's ratings and relevance (Dalkey and Helmer, 1963; Boonzaaier, 2015).

The focus group was asked to rate the Porter's diamond determinants in order of their relevance to and effect on the competitive performance of the industry. These ratings provided insight into strategic focus areas for maximum impact on competitive performance.

3.2.5 Step 5: Strategic conclusions and recommendations to enhance the competitiveness of the South African wine industry

The outcomes from Steps 2, 3 and 4 of the analytical framework were analysed, considered, and used to compile a set of strategic recommendations and conclusions for raising the industry's competitive performance. The hypothesis and research questions posed in Chapter 1 were revisited in light of the results to determine whether the questions were addressed satisfactorily and whether the hypothesis still stood.

Step 5 also made use of knowledge gained through this study to propose a set of recommendations for future research.

3.3 Conclusion

This chapter has described the methodology used in each step of the analytical framework followed in this study. The competitive performance of the South African wine industry was analysed using both quantitative and qualitative approaches under this framework.

In Step 2, the RTA for the South African wine industry was calculated and compared with other major wine-producing countries and wine products across the value chain.

In Steps 3 and 4, a two-round Delphi consensus process was used to identify and analyse the key factors influencing the South African wine industry. Step 3 included the first Delphi round. WES questionnaires were sent out to key players in the wine industry and the respondents' feedback was captured and assessed to identify the most enhancing and constraining factors (Xolela, 2018).

Step 4 included the second Delphi round. The analysed questionnaire data were run through a PCA process to identify the questions for which respondents were most in agreement with their responses. The questionnaire was assessed using Cronbach's alpha to determine the level of reliability within each of the questionnaire's six sections (Xolela, 2018). Highly correlated factors were extracted from the PCA results and their relevance to the South African wine industry assessed during a focus group session, with discussion continuing until consensus was reached. The results of Steps 2-4 are presented in Chapter 5.

Step 5 of the analytical framework is found in Chapter 6, where the outcomes and results from this study are presented as a set of key findings and strategic recommendations.

4 Industry overview

4.1 Introduction

This chapter provides a concise overview of the South African wine industry, including a brief history, the structure of the industry, and the current status of the South African wine industry. It gives context to the analysis of the competitive performance of the South African wine industry, through which the study results should be interpreted.

4.2 Brief history of the South African wine industry

South Africa has a rich heritage in wine, with the first vineyards planted in the Western Cape region in 1655 (WOSA, 2018b). South Africa's wine-growing region is mostly limited to the Western Cape province, which is ideally suited to grape production due to its Mediterranean-style climate (WOSA, 2018b). Since its early days, the South African wine industry has grown significantly into a thriving sector, particularly since 1994 when trade was opened up to the export market (WOSA, 2018b). The industry has since grown in terms of export and has a strong global trade orientation (SAWIS, 2017b, 2017a). However, South Africa currently ranks 67th out of 140 countries in competitive performance and is following a declining trend (World Economic Forum, 2018).

In 2015, global wine production reached 274.4 million hectolitres, of which South Africa produced 11.2 million hectolitres (Wesgro, 2017). Local production stabilised over the following 2 years, with 11.18 million hectolitres harvested in 2017 (Vinpro, 2018a; WOSA, 2018b). South Africa is the eighth largest wine-producing country on volume, producing just under a quarter of the yield of the biggest global producer, Italy (Wesgro, 2017). The industry directly and indirectly employs over 300,000 people in South Africa (Wines of South Africa, 2017).

Local wine per capita consumption increased from 6.93 litres in 2010 to 7.9 litres in 2017 (Wesgro, 2017; Vinpro, 2018a). This increase is partially attributed to the rising popularity of sweet red wine and rose among female urban consumers (Wesgro, 2017).

4.3 Structure of the South African wine industry and value chain

The South African wine industry is supported by associations and organisations that provide services such as knowledge transfer, support, and accreditation (WOSA, 2018a), such as the Agricultural Research Council (ARC), Integrated Production of Wine (IPW), South African Liquor Brand Owners Association (SALBA), VinPro, and the Wine and Agricultural Ethical Trade Association (WIETA) (WOSA, 2018a).

Four main sets of legislation govern the wine industry in South Africa: the Liquor Products Act 60 of 1989 (Department of Agriculture, Forestry and Fisheries); Health Warning Regulation no.764 of the Foodstuffs, Cosmetics and Disinfectants Act of 1972 (Department of Health); Liquor Act 59 of 2003 (Department of Trade and Industry); and the Western Cape Liquor Act (Western Cape Liquor Authority) (SAWIS, 2018b).

The South African wine industry value chain is summarised in Figure 4.1, which shows the flow of products from vineyard to market.

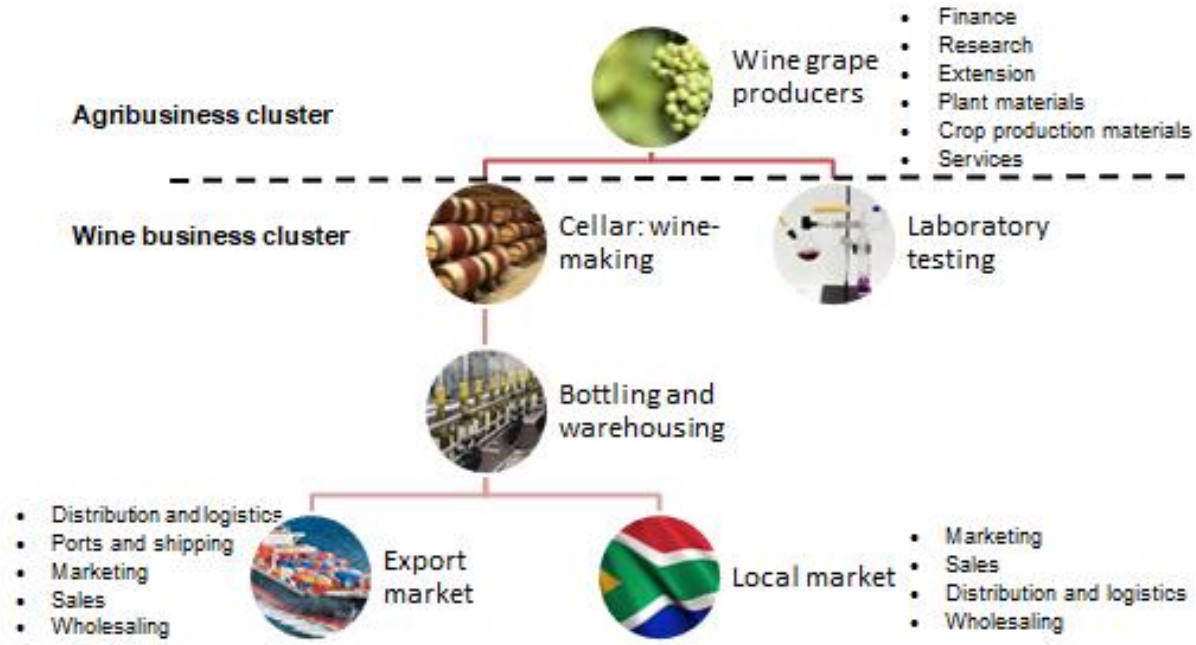

Figure 4.1 Diagrammatic representation of the South African wine value chain

Data source: (Gino Pinto Incorporated, 2017; Finger Lakes Wine Laboratory, 2018; Logistics, 2018)

The market structure can be divided broadly into two main categories, agribusiness and wine business. Agribusiness involves industry linked directly to the production of wine grapes and includes primary grape producers and the suppliers of the required services – finance, research, extension, plant materials crop production materials and services (SAWIS, 2017a). Wine business operates downstream in the value chain and focuses on and includes wine cellars, sales, exports, trading, logistics, and wholesaling (SAWIS, 2017a). Wine cellars can be divided into producer cellars (which operate as cooperatives and account for 80% of South Africa's harvest) (Wines of South Africa, 2017), private wine cellars (SAWIS, 2017a; Wines of South Africa, 2017), and producing wholesalers (SAWIS, 2017a).

As of 2017, there were 3,029 wine grape producers and 546 wine-producing cellars in South Africa, with the majority of grape producers producing between 1 and 500 tonnes per year (Wines of South Africa, 2017; Vinpro, 2018a; WOSA, 2018b). Table 4.1 summarises the current producer and wine-making structure.

Wines produced in South Africa are regulated by the Wine of Origin Scheme. The Wine of Origin Scheme is a strict system of cultivar and origin verification that confirms labelling validity and serves as a traceability system, capturing details on each bottle that allow the grapes to be traced to their originating vineyard (WOSA, 2018c). The Wine of Origin Scheme provides assurance to the customer and consumer that all of the grapes used in a unit of wine are sourced from the area of origin declared on the packaging (SAWIS, 2018a).

Table 4.1 South African wine industry breakdown, 2017

Growers	Primary grape producers	3,029
Cellars that crush grapes	Private wine cellars	472
	Producer cellars	48
	Producing wholesalers	26
	Total	546
No grape crushing facilities	Bulk wine buyers (for wholesale)*	122

*Includes producing wholesalers

Data source: SAWIS, WOSA (SAWIS, 2017a; Wines of South Africa, 2017)

There are several tiers to the origin declaration, with each tier demarking the geographical area that the grapes were sourced from and that the wine was produced in (WOSA, 2018c). The criteria for wine at each tier vary according to the characteristics associated with, or specific to, that tier. The tiers start at the single vineyard level, allowing grapes and wine to be declared to have originated from a specific farm or estate. Thereafter, wine origin can be demarked at the ward, district, or regional level. The broadest demarcation is the geographical unit, or provincial level (WOSA, 2018c).

4.4 Economic influence on the South African wine industry

South Africa's competitiveness is influenced by global and local forces (Boonzaaier, 2015). From a local perspective, the removal of sanctions at the end of the apartheid era (post-1994) and the deregulation of the agricultural economy in the mid-1990s shifted trade patterns towards a free market. This resulted in greater exposure to global factors such as the increased globalisation of markets, fluctuations in the local currency against world currencies, increase in international trade, and features such as the global economic downturn in 2008-2009 (Boonzaaier, 2015). Locally, the South African rand has suffered significantly inconstant values against major foreign currencies over the past 20 years. This unpredictability has had an overall negative effect on South Africa (Boonzaaier, 2015), although it did benefit agricultural trade by boosting the price competitiveness of local products (Sihlobo, 2017; BFAP, 2018). Despite the positive impact of the exchange rate on price competitiveness, Agbiz (Agbiz, 2018) reported at the end of the third quarter of 2018 that agribusiness confidence had fallen below 50%. This was the first time that the score had fallen below 50% since the second quarter of 2016 and indicated that forces were negatively affecting producer optimism (Agbiz, 2018).

Wine-making involves high input costs, and many growers and producers run at tight margins (Rendleman *et al.*, 2016). Producers are more likely to make financial decisions based on current economic factors rather than being open to investing in more costly activities with long-term benefits (Rendleman *et al.*, 2016). However, a recent study showed that consumers have started acknowledging higher value for wines from

producers that advertise their quality management systems and sustainable practices, both attributes of long-term investments (Schimmenti *et al.*, 2016).

The South African wine industry has been well-positioned for growth since the Economic Partnership Agreement between the South African Customs Union and the EU was signed in 2016 (Wesgro, 2017). Two of the key benefits of this partnership are improved market access across all exported products and the protection of geographic industries, protecting the use of their names, which includes South African wine-growing areas (Department of Trade and Industry (South Africa), 2016). South African wines for export are also regulated by the South African Wine and Spirits Council, which assesses the validity of claims around variety, origin, and vintage (WOSA, 2018b).

The export market is critical for South African wine industry sales as it currently accounts for almost half of the annual production volume. South Africa exported 448.4 million litres of wine in 2017, with 449.7 million litres going into the local market in the same year (SAWIS, 2017a).

South Africa's largest export market at the time of this study was the United Kingdom (UK), valuing US$ 109.37 million in 2016. The second- and third-largest export markets were Germany (US$ 80.37 million) and the Netherlands (US$ 51.93 million). However, the Netherlands' export value was less than half that of the UK (Wesgro, 2017).

The Economic Partnership Agreement between the EU and the South African Development Community countries has significantly reduced trade barriers between South Africa and the EU (Loots, 2014; EU and SADC, 2016). At present, there are no import duties on South African wines exported into the EU (European Commission, 2018), which is highly advantageous given that the EU accounts for the majority of South Africa's wine exports (Wesgro, 2017). South Africa's import duties into the EU are compared with those of major export competitors in Table 4.2. The removal of trade levies has placed South Africa and Chile at a strategic advantage for increasing wine industry income through EU exports (Loots, 2014). This feature confirms the importance of a measuring instrument that can accommodate value based on real-world market prices, which the RTA and RCA offer (explained in Chapter 2).

Table 4.2 Import duties from major wine-producing countries into the EU

Exporting country	**EU import duty (Euro/hectolitre)**
South Africa	0
Chile	0
Argentina	32
United States of America	32
Australia	32

Data source: EU Market Access Database (European Commission, 2018)

Figure 4.2 shows the value of wine imported into the EU each year from 2001 to 2017, from each of the wine-producing countries in Table 4.2. The value of South African wine imported into the EU declined from 2009 to 2016, but appears to have stabilised in 2017 (ITC, 2017).

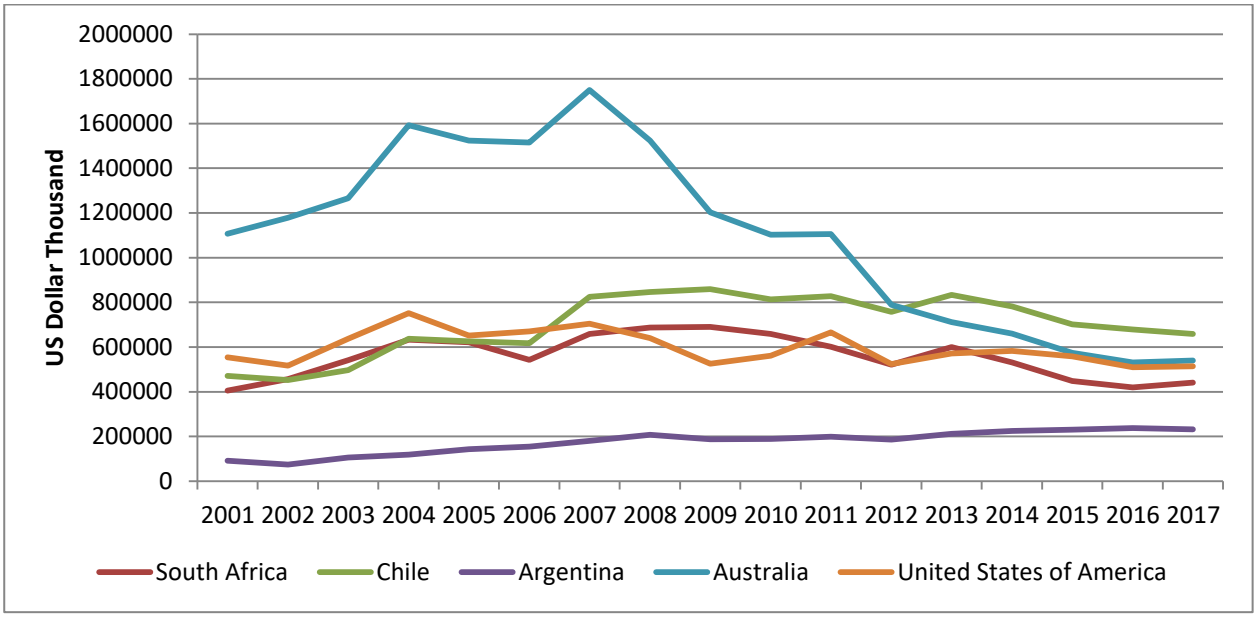

Figure 4.2 Import value of wine from major wine-producing countries into the EU

Data source: ITC (ITC, 2017); calculations: this study

South Africa's largest export market is the UK, which currently falls within the EU. However, the UK is on track to leave the EU in "Brexit," scheduled for March 2019, at which point EU trade agreements will no longer apply to the UK (Wesgro, 2017). While the new trade agreements are yet to be finalised, the British High Commissioner to South Africa has reassured the media that the negotiations will endeavour to minimise any trade disruptions (Etheridge, 2018). It has also been reported that the new trade agreement will be similar to what is currently in place in the EU, with the likelihood of increased trade flexibility around products (including wine) that were previously regulated because of direct competition with producers in the EU (Etheridge, 2018).

4.5 Wine classification

Wine production is often generically classified as either packaged or bulk wine. Bulk wine is defined as wine that is packaged at source into a flexi-tank or international standards organisation (ISO) tank exceeding 2 litres in volume (CBI Ministry of Foreign Affairs, 2016). Bulk wine is exported in this format and is packaged into primary retail units – usually bottles – on arrival. Bulk wine export is more economical but removes total production control from the producer. Bulk export formats were initially susceptible to factors during storage and handling that could compromise the quality of the product (CBI Ministry of Foreign Affairs, 2016). However, advances in packaging technology have reduced this challenge. When the correct precautions are in place to ensure that seals are intact and the correct packaging material is used, incidences of oxidation and spoilage have decreased (CBI Ministry of Foreign Affairs, 2016). Most (61%) of South Africa's current export wine is exported in bulk format (Vinpro, 2018a).

On a global scale, increasing demand for wine in China is driving the growth of the wine industry, creating opportunities for significant export growth (Wesgro, 2017). Demand for wine in China increased by 44% in 2015, with a particular demand for bulk wine (Wesgro, 2017).

The South African wine production environment today features three main producer categories for wine production (WOSA, 2018b). Estate wine is produced and bottled under an estate name. Producer cellars encompass the class co-operative (co-op) structure. They account for 80% of all harvested grapes in South Africa and produce wine from the combined grape production of all contributing producers (WOSA, 2018b). Independent cellars are smaller operations that either produce wine under their own name or buy in bulk and bottle under their own brand, but are not registered estates (WOSA, 2018b).

References to the wine industry extend beyond wine itself to include grape production for a wider range of grape-based beverages. Examples are brandy and its components, spirits derived from distilling wine, and, more recently, grape juice and grape juice concentrate as ingredients for alcoholic and non-alcoholic products (Wesgro, 2017). The last of these is a growing industry.

4.6 Driving the future of the South African wine industry

A collaborative effort between VinPro, the South African Liquor Brand Owners Association (SALBA), Wines of South Africa (WOSA), South African Wine Industry Information and Systems (SAWIS), and Winetech drove a strategic exercise across the South African wine industry known as the Wine Industry Strategic Exercise (WISE) (2014). This initiative built on Wine Vision 2020 (2001) and the WIP, approved by the Minister of Agriculture in October 2003. The purpose of WISE was to identify a set of industry-specific goals (Figure 4.3) to provide direction, focus, and purpose to achieve “profitability, global competitiveness, and sustainability” by 2025 (South African Wine and Brandy Portal, 2018). The industry’s progress is tracked against these goals and the report updated annually (Vinpro, 2018a).

2015	TARGET	2025
2%	Producer return on interest	CPI + 5%
Production driven	Business model	Market and value-chain driven
1.5%	Black-owned land & water	20%
330 million litres	Local wine sales	430 million litres
60:40	Exports bulk: packaged	40:60
20%	Ethical accredited volume	100%
2 Free Trade Agreements	Market focus	Agreements for key markets
1%:2%:5%	Export markets USA: China: Africa	7%:7%:10%
R 6 BN	Wine tourism	R 15 BN
R80 m:R11 m	Industry: Govt levies	Matched funding
275 000	Employment levels	375 000

Figure 4.3 The 2025 targets for WISE and the industry’s 2015 status at the launch of the initiative

Data source: WISE targets (South African Wine and Brandy Portal, 2018). WISE, wine industry strategic exercise

4.7 Wine and health

As this study falls within a Master's degree in Food and Nutrition Security, it considers the link between health and wine as well as the impact of these health associations on competitive performance. A growing awareness around health and how consumer understanding shapes decisions and purchasing patterns is affecting the whole retail market (The Hartman Group, 2015). Health is an emerging driver in the wine industry that has the potential to influence consumption patterns both positively and negatively. Red wine has been reported to have health benefits when consumed in moderation, which has resulted in a downwards consumption trend towards moderation (Foxcroft, 2009).

These downwards consumption trends have been seen in Europe, in countries traditionally associated with daily wine consumption. The trends there have been linked to changing motives behind consumption, with a shift towards occasional consumption for enjoyment rather than routine consumption (Foxcroft, 2009). The move away from everyday consumption has resulted in higher spending patterns on the occasions that wine is consumed, enabling consumers to purchase more expensive wines (Foxcroft, 2009).

In contrast, there is an increasing rise in occasional drinking and dining out in Australia, which has resulted in increased wine consumption patterns in Australia. A growing awareness of health is leading to a decrease in excess or everyday wine consumption but is concurrently increasing occasional drinking in moderation (Foxcroft, 2009). While some of these consumption patterns are simply a result of a societal shift, others are a direct result of several marketing interventions by the Australian wine industry (Foxcroft, 2009). For example, there has been an intentional drive to promote the health benefits of wine, particularly as a meal accompaniment, to boost consumption (Foxcroft, 2009). Similarly, wine has been promoted and marketed as healthy in India, resulting in it featuring often as a drink of choice for meals and occasions (Foxcroft, 2009).

One of the contributing factors for the significant growth within the Chinese wine market is the push by the Chinese press to promote the health benefits of consuming red wine (Foxcroft, 2009). Health is important to the Chinese, and this message has been so successful in China that the drawcard to red wine is now its health benefits over taste and enjoyment alone (Foxcroft, 2009).

It has been proven that consumption of wine in moderation promotes health benefits such as improving glucose tolerance and insulin sensitivity (Amato *et al.*, 2017)**.** However, concerns about the addition of sulphur to wine are gaining momentum in both scientific and wine arenas (Amato *et al.*, 2017). The derivative of sulphur that is added to wine is sulphur dioxide (SO_2), added for its antimicrobial properties (Amato *et al.*, 2017). While sulphites are released naturally during the fermentation phase at a concentration between 30 and 90 ppm, they are also added during production to improve the wine's ability to age and to prevent spoilage (Amato *et al.*, 2017). Although the effect of consuming added sulphur is usually very mild or non-existent, particularly at the levels in wine, it can result in more severe side effects in sensitive individuals (Amato *et al.*, 2017). Consequently, there is consumer demand for sulphite-free wines, and consumers have been willing to pay a premium of up to US$ 1.23 per bottle for these products (Amato *et al.*, 2017). Although this is a significant premium per bottle, sulphite-free wines currently appeal to a limited market (Amato *et al.*, 2017). However, sulphite-free wines are an appealing alternative for reaching those who believe that sulphites are the cause of their negative side effects, providing that the price point is kept within reach (Amato *et al.*, 2017).

Minority group trends often gain a disproportionate influence over food culture (The Hartman Group, 2015). These consumers are often passionate about their health stance and share their views widely and convincingly, thereby influencing a wider portion of the market that was otherwise indifferent (The Hartman Group, 2015). The health-conscious and additive-avoidance markets hold significant potential for the future (Amato *et al.*, 2017). If marketed correctly, a move towards health will include the consumption of wine over other spirits, within which healthier wines will have added appeal (Amato *et al.*, 2017). “Sulphite-free” and “organic” are key descriptors of wines that are perceived to have higher “health” attributes (Amato *et al.*, 2017). These differentiating factors could prove to be key marketing tools for producers looking to appeal to consumers who want to drink wine for health purposes (Amato *et al.*, 2017).

4.8 Conclusion

Since the first wine grapes were planted in South Africa in 1655, the South African wine industry has grown into the eighth largest wine-producing country in the world, with a 2017 export of 448.4 million litres (SAWIS, 2017a). The competitive performance of the industry was measured in 2005 (Esterhuizen and Van Rooyen, 2006) and again in 2008 (van Rooyen, Esterhuizen and Stroebel, 2011). However, these studies have not been reviewed since competitive performance appeared to be slowly increasing again in 2008.

By conducting this study in 2018 and analysing current competitive performance data, it will be possible to gain insight into the South African wine industry’s competitive space today. This study will provide current research from which new strategic approaches can be developed and potentially implemented.

5 Results and Findings

5.1 Introduction

The results presented in this chapter follow the steps of the analytical framework, described in **Chapter 3**, and build on the definition of competitiveness selected in Step 1 and discussed in **Chapter 2**:

"The ability of the South African wine industry to sustain or grow business through trade for South African wine amidst a changing agricultural, political, social, environmental, governance and production landscape and unpredictable exchange rates, while consistently earning at least the opportunity cost of resources employed" (Ezeala-Harrison, 2005).

This chapter reports the empirical measurement of competitive trade by data assessment. It also reports the assessment and analysis of major influencing factors and trends identified by industry stakeholders in a qualitative survey and focus group, tested for response consistency using PCA. From this analysis a set of findings around the competitive performance of the South African wine industry will be drawn.

5.2 Measurement of competitive performance in the South African wine industry (Step 2)

The ITC (ITC, 2017) and FAOSTATS (FAO, 2017) time-series-based trade datasets were used to measure the competitive performance of the South African wine industry.

Historical trade data covering 2001-2017 were collected from the ITC database (ITC, 2017) and used to calculate the RTA and RCA for each year, as measures of the competitiveness of the South African wine industry. The results are shown in Figure 5.1.

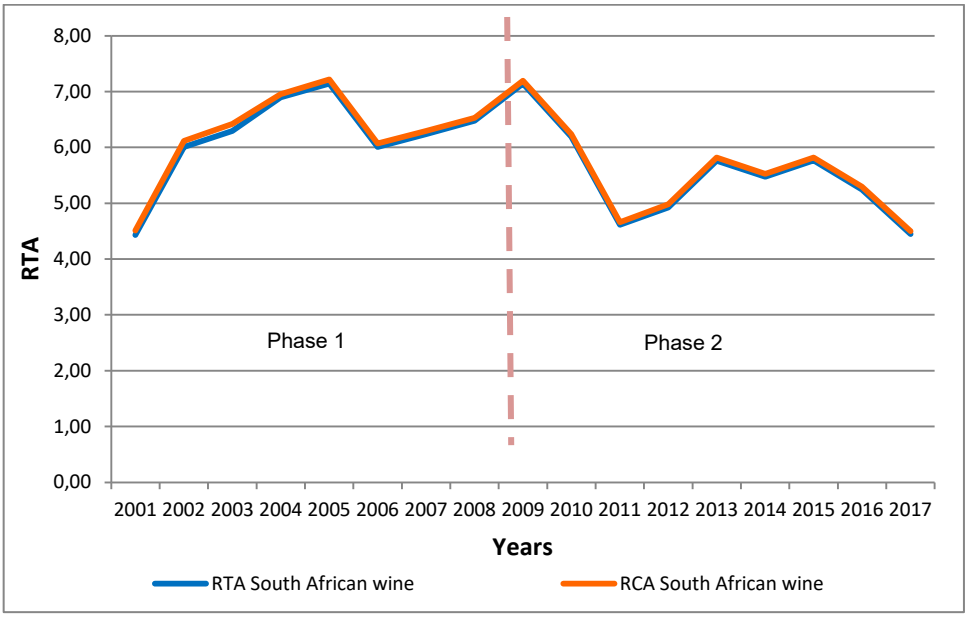

Figure 5.1 Comparison between the relative trade advantage (RTA) and relative comparative advantage (RCA) for South African wine, 2001-2017

Data source: ITC (ITC, 2017); calculations: this study.

Notes: Competitive (RTA > 1), marginally competitive (1 > RTA > 0), not competitive (RTA < -0)

As discussed in Chapter 2, the RTA reflects comprehensive trade performance and considers both import and export trade values. In contrast, the RCA only reflects export performance as it is based solely on export trade values; it does not consider import trade. Despite these differences in the measures and the influence of import trade values on the RTA, the graphs in Figure 5.1 for RTA and RCA are almost identical. This similarity is attributed to South Africa exporting large quantities of wine (SAWIS, 2017a; Vinpro, 2018a), with little imports. The import values are so low that they are currently almost insignificant in the RTA calculation. The RTA thus comprises predominantly export trade values and gives similar values to the RCA.

Figure 5.1 can be divided across the x-axis into two distinct phases based on trends with Phase 1 (2001-2009) and Phase 2 (2009-2017).

Historical trade data from 1961-2017 were collected from the FAOSTATS database. RTA values for each year were again calculated using the equation given in Chapter 2. The results are plotted in Figure 5.2, together with the ITC-based RTA values. The results from the two datasets are compared in section 5.2.1. The FAO-based results were comprehensively discussed by van Rooyen *et al.* (2011) and van Rooyen and Boonzaaier (2017). Van Rooyen *et al.* (2011) reported a decline in competitiveness after 2006, based on data up to 2008. However, van Rooyen and Boonzaaier (2017) used data up to (2016) and found that this was a short-lived decline that recovered until 2009, resulting in phase 1 (Figure 5.1) covering the years 2001-2009.

Figure 5.2 Comparison between wine RTA values derived from the FAO and ITC datasets

Data source: ITC Trademap and FAOSTAT (FAO, 2017; ITC, 2017); Calculations: this study

5.2.1 Comparison between FAO- and ITC-derived RTA values

The choice of trade database (in this case, FAO or ITC) is largely decided by the nature of the research and purpose of the results. The FAO database (FAO, 2017) eliminates non-agricultural sector trade and provides a reflection of competitiveness within agriculture alone. This is useful for decision-makers who work within agriculture and need to assess the profit potential of alternative crops and products within the agricultural

environment. The FAO database is thus useful for investors and farmers looking to optimise their use of agricultural land by selecting the most competitive, appropriate agricultural crop for a given area of land. However in terms of a comprehensive statement of competitiveness, as required by the opportunity cost component of the definition, problem statement, and hypothesis set for this study, the ITC database provide a better indicator of the opportunity costs principle as it considers the entire economy.

The FAO database records trade from 1961 onwards and clearly showed that the South African wine industry's competitiveness generally increased from 1990 onwards (**Error! Reference source not found.**). his corresponded with the lifting of international trade sanctions and the deregulation of trade policies in the mid-1990s, which resulted in a dramatic increase in the volume and trade volume of South African exports (van Rooyen, Esterhuizen and Stroebel, 2011). As with the ITC dataset, the FAO-based RTA values showed increasing competitiveness. However, fluctuations were observed until 2007/2008, corresponding to the global financial crisis, which resulted in more frugal consumer spending patterns (Edey, 2009). The FAO dataset also described competitive performance during the years that South Africa was sanctioned by the global community(1986-1991) (Hefti and Staehelin-Witt, 2005). However, as trade data are often obscured due to trade deals, the RTA values offer an inconclusive picture of competitiveness in this period. A more detailed description of these phases is given by van Rooyen *et al*. (2011). The RTA values calculated from the ITC dataset (Figure 5.1), recorded since 2001, displayed a similar trend to the FAO-based values of increasing (Phase 1), then decreasing competitiveness (Phase 2).

The ITC-based RTA values were predominantly greater than the FAO-based values. South African wine was thus more competitive when compared with other traded activities in the South African economy (ITC-based values) than when compared with other South African agricultural products alone (FAO-based values). This finding may explain why the area under vineyard in South Africa decreased from 101,957 hectares in 2007 to 94,545 hectares in 2017 (SAWIS, 2017a). Some of these vineyards were uprooted and the land used for alternative, more profitable crops (Vinpro, 2018b).

In general, it is better to situate an industry in its economy-wide context, comparing it with trade data across all industries to determine its true competitive performance trends, rather than comparing it only other industries in its sector. This is particularly true when considering land expropriation for other industrial uses and attracting investors who are looking for promising South African investment opportunities and are not specifically limited to agriculture. The ITC dataset was thus used as the primary trade data source for this study, unless otherwise specified.

From a long-term perspective, the South African wine industry is today sustaining a performance far more competitive than in the years before the first democratic elections and the deregulation period in the mid-1990s. Open global trade has clearly had a positive effect on the South African wine industry (FAO, 2017; ITC, 2017).

5.2.2 Trends in wine competitiveness, based on ITC-derived RTA values

Two clear trends could be seen in the ITC-derived RTA values (Figure 5.1), which were supported by the more restricted FAO-based RTA values (Figure 5.2.)

5.2.2.1 Phase 1: Fluctuating and increasing competitive performance (2001-2009)

The RTA values indicated that, on average, competitiveness increased between 2001 and 2009. This timeframe corresponded to the time after South Africa's 1994 elections, when the export market opened up and South African free trade was established with the rest of the world. After an increase in local production was unmet by local demand, producers shifted focus to the export market, with a subsequent increase in export from 21% in 1999 to 54% in 2008 (SAWIS, 2009). The export increase occurred at the same time as an overall downwards trend in the value of the rand, which drove the short-term profitability of these exports (Figure 5.4) (SAWIS, 2009).

5.2.2.2 Phase 2: Fluctuating, but positive and decreasing competitive performance (2010-2017)

A net decrease in the South African wine industry's competitiveness was observed from 2009 to 2017 (Figure 5.1). The total volume of wine exported increased from 395,591,903 litres in 2009 to 448,398,546 litres in 2017 (Wines of South Africa, 2018). However, the numbers of primary grape producers, wine cellars that crush grapes, producer cellars, and producing wholesalers all decreased (Wines of South Africa, 2018).

This set of seemingly contradictory results indicates that although the volume of exported wine increased, competitiveness declined, linked to decreasing value. This finding may tie in with the increasing bargaining power of major retailers driving down the price of wine, together with the increasing shift towards bulk wine, which is typically of a lower value per unit but is driven by scale. If the optimism around the 2018/19 crop is realised, a positive influence may be exerted on the more recent downwards trend (see section 5.4.3).

5.2.3 Comparison of the South African wine industry and international competitors

The South African wine industry can thus be considered competitive in terms of the RTA value alone within the context of the South African economy. However, its performance in comparison with other leading wine-producing countries can provide insights into the industry's role in total global trade and can highlight which countries have a more competitive wine industry.

The RTA value is a measure of an industry's competitiveness within a national economy, compared with global trade. This can result in skewed contrasts between RTA values if economies are significantly different in size or if a country's wine industry is surpassed by an even more competitive industry in that country (Van Rooyen and Boonzaaier, 2017). An industry may thus appear less competitive, even though it can trade advantageously over other wine-producing countries. Figure 5.3 compares the RTA values of the world's top wine-producing countries to give a clear picture of their competitiveness and the role that each wine industry plays within their respective country.

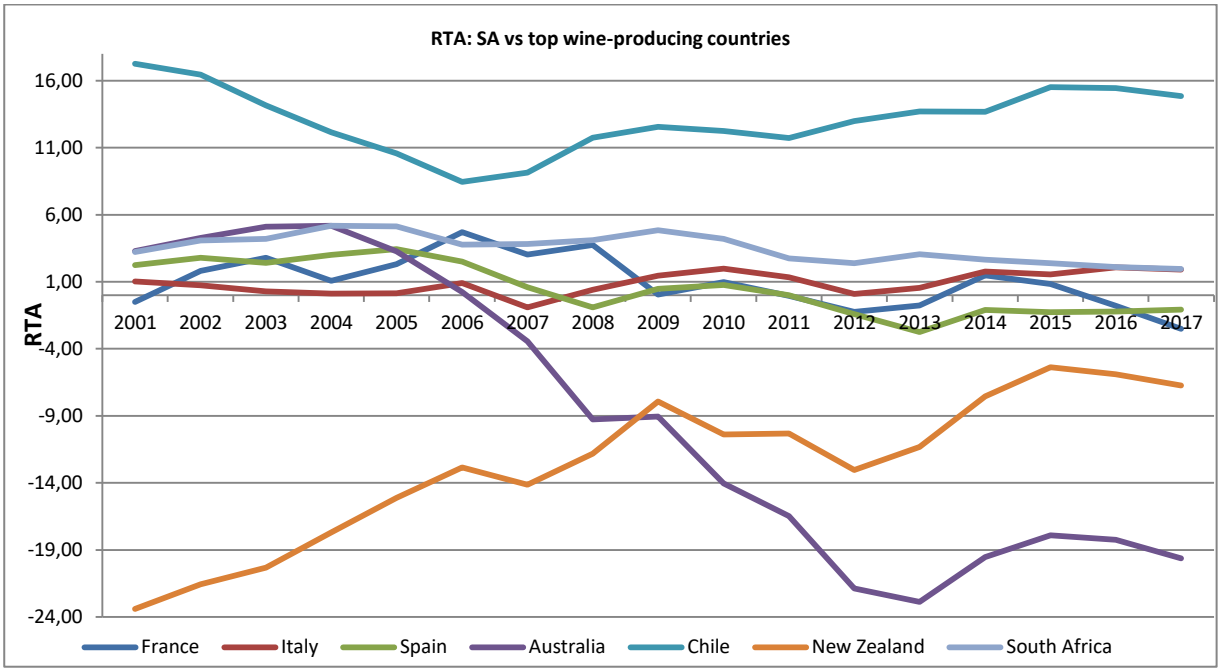

Figure 5.3 Comparison of 2001-2017 ITC-based RTA values for the South African wine industry and the top three Northern (France, Italy, and Spain) and Southern (Australia, Chile, and New Zealand) Hemisphere wine-exporting countries

Data source: ITC Trademap (ITC, 2017); calculations: this study

The Chilean wine industry showed much greater RTA values than every other country considered for the entire period. From 2007, South Africa had the second highest RTA values. Australia and New Zealand both showed negative RTA values.

Chile is a new-world wine producer (Román, Cancino and Gallizo, 2017). The success of its wine industry has attracted much attention but is less understood than more traditional wine-producing countries like France, Italy, and Spain (Román, Cancino and Gallizo, 2017). The higher RTA values may have been the direct result of the strategic business practices used by the Chilean wine industry (Román, Cancino and Gallizo, 2017). Many producers and participants in the wine value chain have significant business experience, which has shaped the industry's approach of embracing new technologies and increasing unit prices (Román, Cancino and Gallizo, 2017). Direct foreign investment can also play a role in increasing local market competition, thereby stimulating a positive strategic response from local market players to maintain their market share (Kunc and Bas, 2009).

The Australian wine industry's competitiveness started to decline between 2004 and 2006, with its RTA becoming negative between 2006 and 2007. The RTA was increasingly negative from 2007 to 2012, during which time exports suffered a 38% decline (Kenny, 2016). This decline has largely been attributed to a combination of grape oversupply and low profitability, exacerbated by a high wine tax that hindered industry growth on an international level (Kenny, 2016).

The Chilean and South African wine industries showed a significant competitive advantage across the Southern Hemisphere. Further insight into the competitive factors behind this advantage will allow South Africa's position to be leveraged to grow its global market share through increased export volumes.

Assessing the RTA values for each stage of the South African wine industry's value chain may reveal more about the role that wine plays amidst other wine-based products or by-products. It will also allow the competitiveness of the wine value chain to be compared against that of wine itself.

5.2.4 Wine competitiveness and the exchange rate

As the South African wine industry is driven by exports, it will be influenced by exchange rate values and fluctuations. Figure 5.4 shows the relationship between the rand/euro exchange rate and the wine industry's competitive performance. The euro was chosen as the EU is the main destination for South African wine exports.

A strong link between competitive performance and the exchange rate has been noted in previous studies (Esterhuizen and Van Rooyen, 2006; Boonzaaier, 2015), with an indirect correlation between the strength of the rand and competitive performance. However, this pattern changed from 2008, and the competitive performance of the overall industry declined despite a continually weakening rand. Between 2008 and 2009, the rand gained strength but the RTA continued to increase. Since 2011, the RTA has been in a slow decline. However, its fluctuations have corresponded with exchange rate fluctuations, with decreases in the rand value linked to increases in the RTA.

Unlike the changing relationship between the exchange rate and competitive performance for the whole wine industry, Figure 5.4 shows that bulk wine and the exchange rate were positively correlated for much of the period shown, with a weaker rand corresponding to increases in competitive performance (RTA). However, this pattern ended in 2016, with the RTA for bulk wine continuing to decline despite the weakening rand.

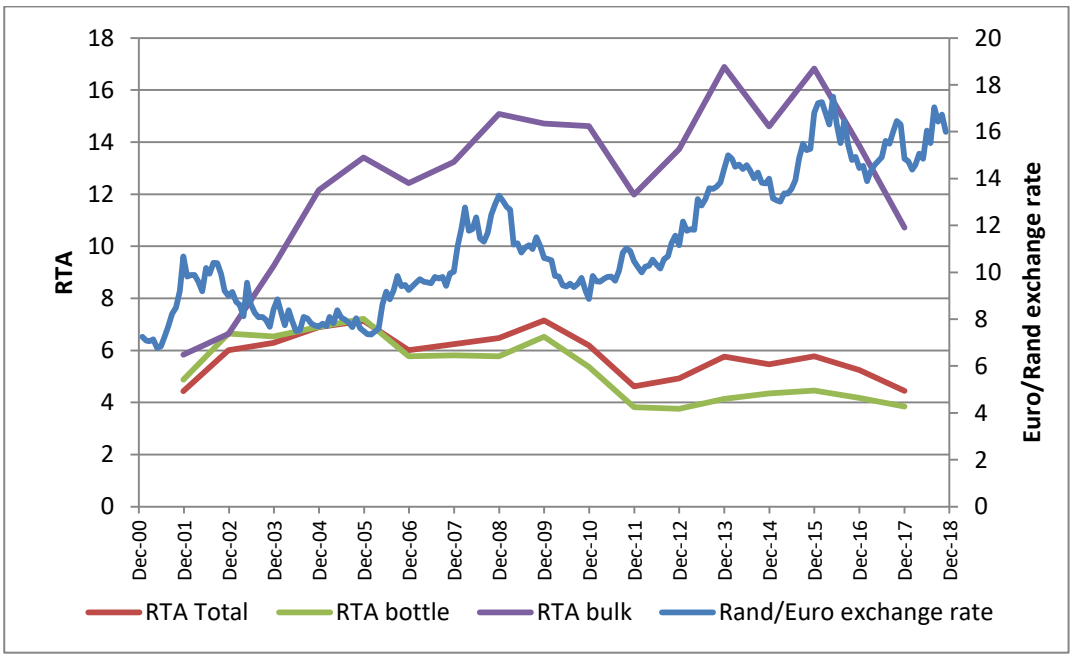

Figure 5.4 Relationship between the RTA values for bulk, bottled, and total wine in South Africa and the rand/euro exchange rate, 2001-2018

Data source: ITC database (ITC, 2017), calculations: this study

These observations indicate an overall positive, but not directly related, relationship between the rand/euro exchange rate and competitive performance. Even the relationship between bulk wine and exchange rate has recently shifted to match this trend. It is clear that the exchange rate is not the sole determining factor of competitive performance and that more factors should be accounted for when the competitiveness performance of the wine industry is considered.

5.2.5 Wine competitiveness and packaging format – bulk vs bottled South African wine

The volume of bulk wine exported increased from 420 million litres in 2015 to 448.4 million litres in 2017 (SAWIS, 2017a). Although still highly competitive, the competitive performance of bulk wine declined over this time, from an RTA of 16.83 in 2015 to 10.72 in 2017.

Figure 5.4 compares the competitive performance of bulk wine, bottled wine, and the overall South African wine trade. Wine is traditionally bottled in glass bottles that are usually 750 ml in volume (Embree, 2015). However, a new era of consumer demand and efficiency means the industry is moving away from traditional packaging formats and exploring bulk containers greater than 2 litres (CBI Ministry of Foreign Affairs, 2016) and smaller or single-serving units in a variety of packaging materials (Embree, 2015). Figure 5.4 shows that since 2002, the bulk format has become a highly competitive market, with significantly higher RTA values than bottled wine.

Even though the current bulk to packaged product ratio in South Africa is 61:39 (Vinpro, 2018a), the RTA values for the collective wine trade value have remained much closer to bottle wine RTA values than bulk wine RTA values. Despite higher volumes exported in bulk than in bottle, bottled wine still holds a significantly higher value than bulk wine, accounting for R7.0 billion of the total South African wine export value of R8.7 billion in 2017 (Vinpro, 2018a). This significant contribution to the total wine industry export value accounts for the similarity between the RTA values for bottled wine and total wine.

At present, bulk wine has been explored as a packaging format for lower cost wines due to lower packaging costs, more efficient transport, and flexibility to meet demands.

Higher proportional savings are achieved as bulk wines carry lower packaging costs per unit. The producer does not incur the expense of bottles, corks, the bottling line, or the associated labour costs. The wine is transported in large tanks, and then bottled after import. The saving can be significant, as the bottle can contribute up to 20% of the total retail price of a low-cost bottle of wine (Groenewald and Ratcliffe, 2018)(Van Rooyen, 2018).

Packaging lower cost wine in bulk offers space efficiency during export (Groenewald and Ratcliffe, 2018). Glass wine bottles are heavy and bulky, adding unnecessary weight and volume to containers and reducing the efficiency of transport costs (Groenewald and Ratcliffe, 2018). While the volume and mass of actual wine remains the same, the value of the wine determines the ability of a bottle of wine to offset the export costs. By reducing associated packaging costs and increasing volumetric efficiencies, wine producers are able to increase their export load of actual wine over a fixed container volume. Exporting wine in bulk and bottled format in a fixed container space can result in wine volumes differing as much as 24,000 litres for bulk compared with 10,000 litres for bottled wine (Groenewald and Ratcliffe, 2018). The increased scale that bulk

wine export enables for the same transport costs unlocks new possibilities for exporting lower value wines (Groenewald and Ratcliffe, 2018).

Bulk packaging offers flexibility for reactive exports to account for shortfalls in international wine markets (Delphi 2 Focus Group, 2018). The ability to supply opportunistically to the spot market has contributed to the competitive performance of bulk wine. However, bulk wine sold on the spot market is not a reliable business model for long-term trade (Delphi 2 Focus Group, 2018).

Another benefit of wine exported in bulk is that it can be bottled and labelled according to the needs of the importer. Importers can create local wine brands in countries that may not otherwise produce wine or where there are production shortages. The current international wine shortage puts South Africa in a prime position to export excess wine without having to incur the cost of packaging (Groenewald and Ratcliffe, 2018). Wine exported at times of high international demand offers an opportunity to fetch competitive prices (Groenewald and Ratcliffe, 2018). Bulk wines can be blended to create a unique product offering to the market. As bulk wine export has reduced carbon dioxide emissions per unit of up to 40%, it offers an answer to international pressures to increase sustainability (WRAP (Waste and Resources Action Programme), 2009). Bulk export also reduces the risk of breakages and subsequent waste during transport as much of the transportation takes place in the bulk container (WRAP (Waste and Resources Action Programme), 2009).

A frequently argued negative aspect of bulk wine export is that the lack of branding or subsequent rebranding can result in a loss of identity for the producer and a lack of consumer association with the product being from South Africa. Brand South Africa was launched in 2002 and has placed importance on growing awareness of South African products and creating a strong, positive association with South African products (Brand South Africa, 2016). While it may make sense for South Africa to sell bulk wine to be rebranded for a value perspective, these sales dilute efforts to promote quality wines from the country of origin (Groenewald and Ratcliffe, 2018). Mike Ratcliffe (Groenewald and Ratcliffe, 2018) argued that improving South African wine packaging and labels will increase the South African wine industry's international competitiveness. This could apply to bottled and bulk wines, if bulk wine is branded (VinIntell, 2018). Conversely, the negative connotations of South African safety and reliability in the international market may negatively influence customer perspectives of South African wine (Delphi 2 Focus Group, 2018). The debate remains highly contested, with some producers more ready than others to embrace the competitive space within bulk wine.

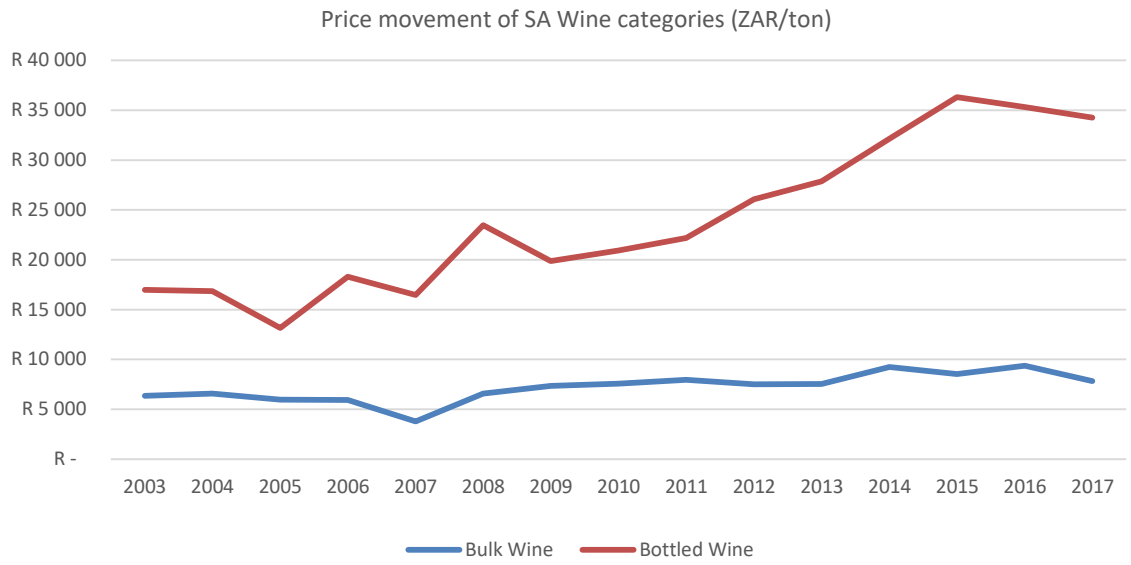

Figure 5.5 Comparison of price movement between bulk and bottled wine in South Africa

Data source: ITC Trademap (ITC, 2017)

Bulk wine export will also have an effect on secondary industries such as packaging, label, and closures, as the growth of these industries shifts to the importing country (Kotze, 2012). This shift comes with a reduced total national earning and job losses in the wine and associated industry (Kotze, 2012). In 2012, it was estimated that around 107 jobs are lost for every 10 million litres of wine exported in bulk rather than in bottles (Kotze, 2012).

Despite these contradicting benefits, there may be room for both bulk and bottle wine, depending on the agreements between the exporter and importer. If producers' brand identity can be retained, bulk export will simply improve export efficiency (Kotze, 2012). This practice has already been used by some producers, who have set up bottling lines in the destination country and simply bottle the wine after capitalising on the financial benefits of bulk transportation (Kotze, 2012). According to WOSA, such transportation arrangements could improve the competitiveness of the South African wine industry significantly (Kotze, 2012). Bulk wine transportation offers particular benefits when exporting to countries where products have to travel a long distance, resulting in high transport costs (Kotze, 2012). As South Africa is highly sensitive to exchange rate fluctuations, removing packaging costs from production costs may help to buffer against variable profit (Kotze, 2012).

Bottled wine has continued to fetch a higher price per tonne than bulk wine (Figure 5.5), whereas bulk wine has remained more competitive in terms of RTA values than bottled wine. Competitiveness encompasses business sustainability and the ability to attract scarce resources and investors. Industry success should not be solely measured on indicators such as price per tonne, without considering the overall picture including measures such as RTA. There is an opportunity to increase the value of bulk wine, through branded bulk wine.

5.2.6 Competitiveness ratings along the wine value chain - wine versus wine products

As shown in Figure 5.6, bulk packaged wine has generally remained the most competitive, with bottled wine the second most competitive product. These are followed by vermouth and other wine made by fresh grapes that are flavoured with plants or other aromatic substances, in bulk and bottled formats. The prominence of wine and flavoured wines in bulk format offers a significant opportunity for growth and potential expansion into other products in similar formats. The least competitive product category is spirits obtained by distilling grape wine or grape marc, which encompasses brandy, among other products.

The wine value chain is thus shown to be important in analysing the competitiveness of the industry. This finding will be explored further through Porter's diamond in section 5.3.

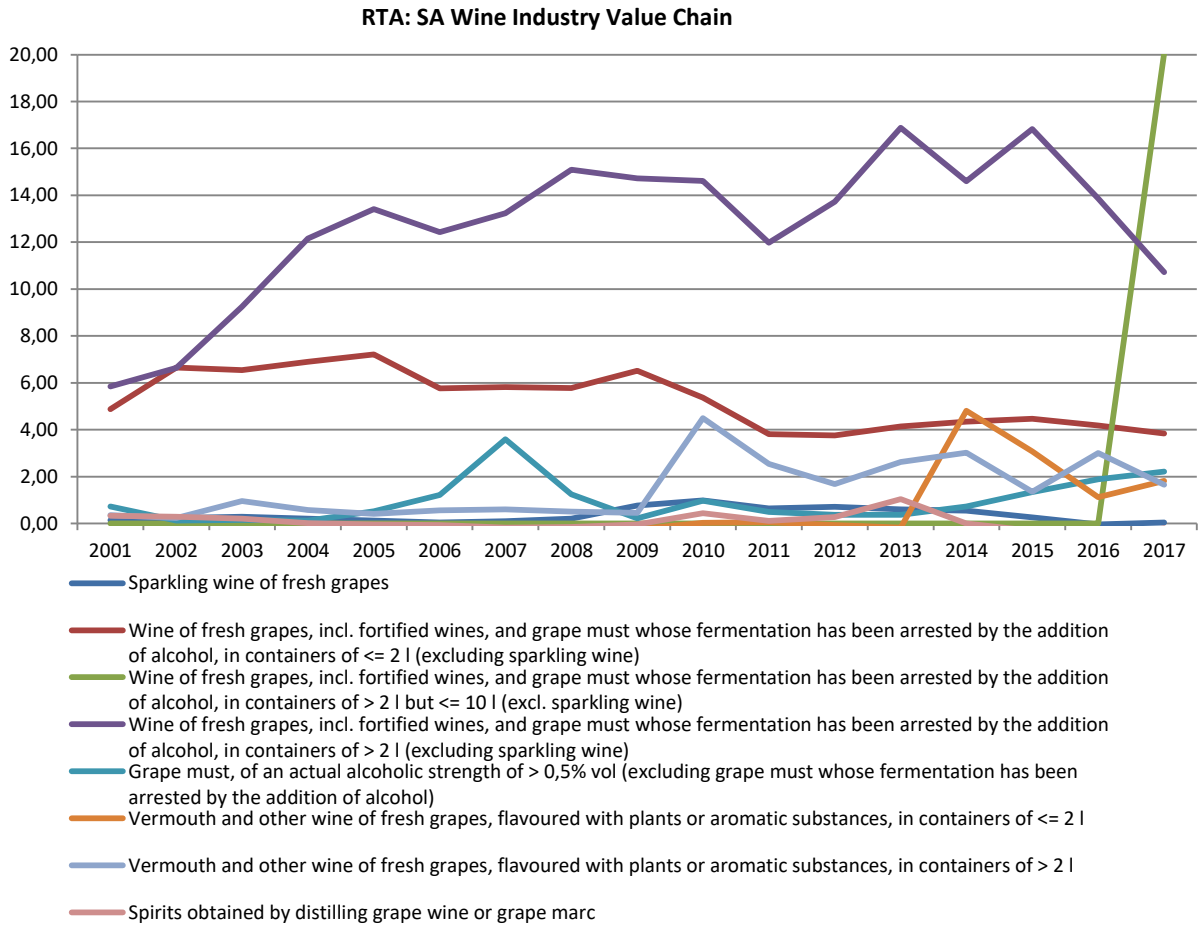

Figure 5.6 Comparison of competitiveness across the South African wine value chain

Data source: ITC Trademap (ITC, 2017); Calculations: this study

5.3 Finding the factors that affect the competitiveness performance of the SA wine industry (Step 3)

5.3.1 Wine Executive Survey - The first Delphi round (Step 3):

The WES questionnaires targeted the wine industry's executive and decision-making level to obtain executive views. Twenty-nine responses were received. The breakdown of participants across the value

chain in this first Delphi round to explore the factors constraining and enhancing competitiveness are indicated in Table 5.1. Some respondents performed more than one role in the value chain.

Table 5.1 Summary of participants in the first Delphi round and their role in the value chain

	Cluster 1 – Agribusiness	Cluster 2 – Wine business		
Respondents	Producer	Cellar	Wholesaler	Other
Number of respondents	15	19	1	4
% of total respondents	38.5	48.7	2.6	10.3

Data source: This study's WES (WES, 2018)

The responses from this executive group in the South African wine industry were processed and the data captured and analysed. Useful results are presented here as findings. The dataset was analysed in several different ways to maximise its value. The ratings per factor were averaged to derive an impact rating score, which were plotted onto radar diagrams per Porter's diamond determinant **(Step 4)**. The data were then used in PCA, where ratings consistency was used to identify the factors with the most highly correlated responses, i.e., where most respondents were in agreement. The PCA scores of the 40 most highly correlated factors were used to determine a Cronbach's alpha value to determine the questionnaire's reliability. The information was then used as the starting material for the second Delphi round session, in **Step 5**.

5.3.2 Overall Wine Executive Survey factor ratings

All of the factors included under the six determinants were ranked from highest to lowest average rating by the respondents. The factor with the highest average rating could be regarded as the most enhancing factor, whereas the lowest average rating indicated the most constraining factor in this survey and for this set of respondents. The average factor ratings across all responses, ranked from most constraining to most enhancing, are given in Appendix 2.

Of the 121 factors that respondents were asked to rate in the WES, 29% received a score of less than 2.5 (towards constraining), 26% received a score between 2.5 and 3 (neutral to slightly enhancing), and 45% scored higher than 3 (towards highly enhancing) (WES, 2018). The distribution of ratings indicated a well-structured set of questions, with clear constraining and enhancing factors being identified for deeper analysis in Steps 4 and 5.

Table 5.2 shows the ten most enhancing and constraining factors. The most enhancing factor for competitive performance – with an average score of 4.59/5 – was "the competitiveness drive of the South African product market" (FR4), i.e., "to survive you need to be competitive". The "importance of well-developed infrastructure" and "quality of local suppliers" were in second and third place, respectively.

The most constraining factor with an average score of 1.17/5 was "government interactions and consultations" (RS3), i.e., negotiating with government agencies to enhance competitiveness. It was followed by "government financial support" (RS2) in second place and "crime perceptions" (CF6) in third.

As these scores are the averages from the respondents across the value chain, some factors may have had varied actual ratings from different respondents across the value chain. The average score is not indicative of consensus or agreement. For example, a factor rating of 3 could have been the result of many similar ratings across all of the respondents or it could be the result of an even split between very high and low ratings. The factor ratings were thus assessed per respondent cluster and for the total group, and PCA was used to identify the highly correlated responses in **Step 4** (section 5.4).

Table 5.2 Top 10 most enhancing and constraining factors influencing the South African wine industry

Factor ranking	Most enhancing factors	Average score across respondents	Most constraining factors	Average score across respondents
1	Competitiveness drive of the South African product market	4,59	Government interactions and consultations	1,17
2	Importance of well-developed infrastructure	4,52	Government financial support	1,24
3	Quality of local suppliers	4,34	Crime perceptions	1,38
4	Competition of the international market	4,28	Land expropriation without compensation proposals	1,45
5	Influence of scale economies	4,17	Credibility and reliability of politicians and bureaucrats	1,55
6	Impact of technology advancement	4,07	Impact of a global recession	1,55
7	Cost of specialised technology services	4,03	Land reform policy in general	1,59
8	Customer purchasing power	3,93	Credibility and reliability of current political system	1,62
9	Environmentally friendly certified products	3,86	Establishment and production costs	1,83
10	New international market entrants	3,86	Quality of unskilled labour	1.86

Data source: Calculations: this study; this study's WES (WES, 2018)

(section 5.4).

Table 5.2 displays the averaged rating scores for all 121 factors in the questionnaire. Although useful, this information does not contain a focused, integrated view of the strengths and weaknesses of the industry as it relates to competitiveness. Instead, it shows *ad hoc* responses of enhancing and constraining factors. Porter's New Competitiveness Theory (the Porter diamond) provides a more systematic approach as it aggregates factors into a coherent set of determinants that affect competitive performances (Porter, 1998; Esterhuizen and Van Rooyen, 2006; van Rooyen, Esterhuizen and Stroebel, 2011).

5.4 Ratings in accordance with Porter's diamond determinants (Step 4)

Appendix 2 shows all of the questionnaire factors. However, the questionnaire was constructed so that each question aligned with one Porter determinant and each determinant had a number of factors in the questionnaire. By analysing the data in accordance with the Porter classifications, the key constraining or enhancing factors within specific determinants could be identified. The Porter determinants that contained a

consistent, related cluster of factors could be identified and presented to relevant industry groups or government and used as a basis for strategic analysis.

This study had access to baseline data from two previous similar surveys, allowing the changing space of competitive performance to be explored.

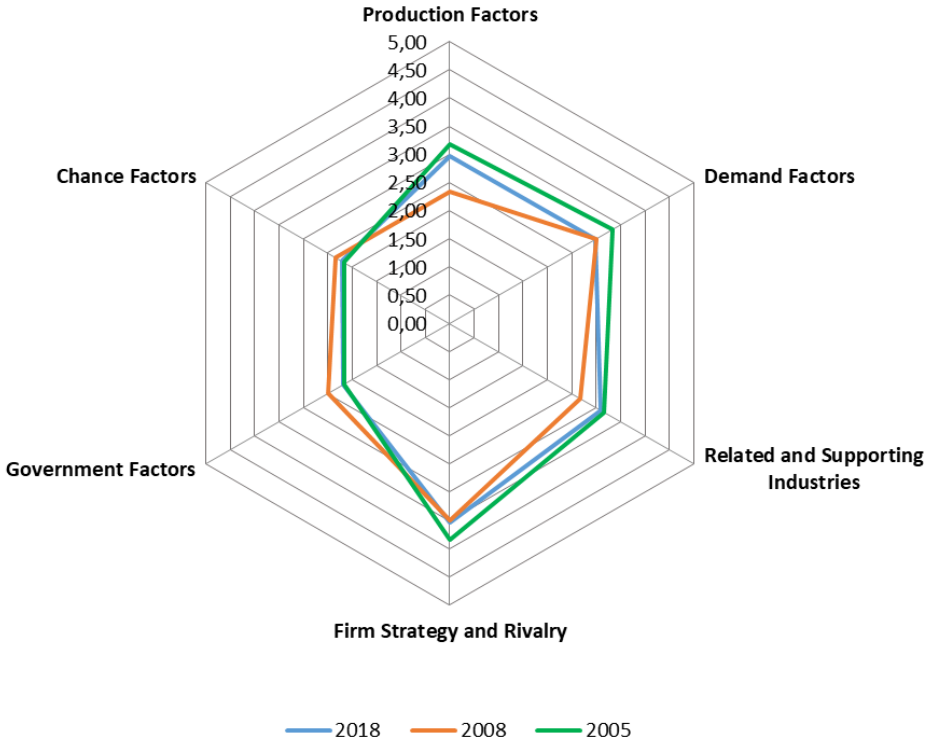

Figure 5.7 shows the average combined factor ratings for all of the factors in each of the six Porter model determinants and compares these 2018 results to those obtained in the 2005 (Esterhuizen and Van Rooyen, 2006) and 2008 (van Rooyen, Esterhuizen and Stroebel, 2011) studies. A similar pattern in overall constraining and enhancing factors was found in all three studies.

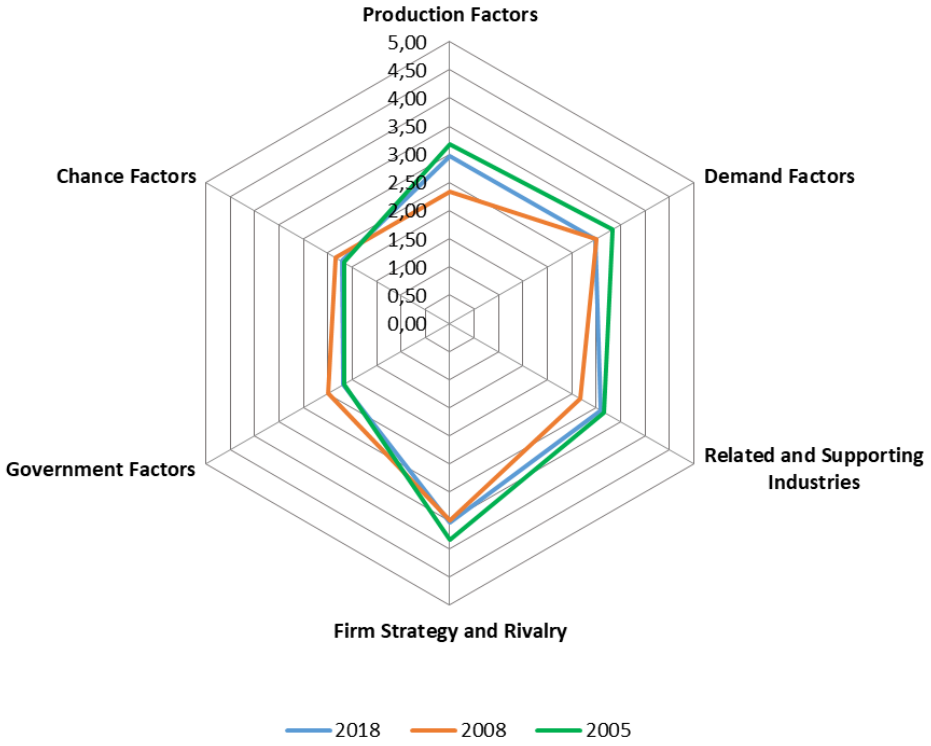

Figure 5.7 Average factor ratings for the six Porter model determinants in 2005, 2008 and 2018.

Data source: 2018 results: Calculations: this study; WES. 2005 and 2008 results: (van Rooyen, Esterhuizen and Stroebel, 2011)

The factor with the highest average rating in all three studies (2005, 2008, and 2018) was “Firm, strategy, and rivalry.” “Related and supporting industries,” “demand factors” and “production factors” were clustered closely together. “Chance factors” and “government factors” received the lowest average ratings, indicating that they were associated with constraining competitiveness. It is clear from

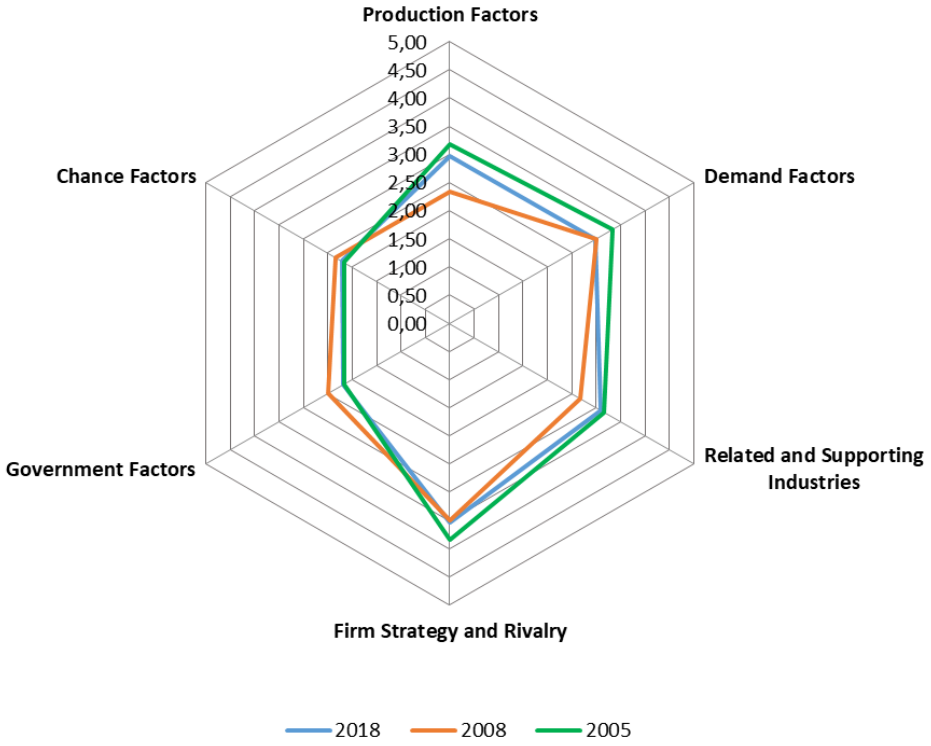

Figure 5.7 that the competitive advantage space of the SA wine industry decreased from 2005 to 2008. This decline in 2008 coincided with the global financial crisis (Edey, 2009). The competitive space then expanded again from 2008 to 2018, almost recovering to its 2005 position. This recovery is significant as it is indicative of an expanded competitive advantage, which speaks positively to the current competitive space in the South African wine industry. This optimism is not yet reflected in RTA values, which showed a declining competitiveness (Figure 5.4) in the South African wine industry. Once released, the 2018 trade data will provide a better indication of the latest competitive performance trend.

5.4.1 Wine value chain ratings

The value chain was divided into two, viz., agribusiness and wine business. Agribusiness refers to wine grape production and associated support industries and services, whereas wine business involves wine making, marketing, trading, and related supporting industries.

The average impact ratings given to each Porter's determinant by respondents from each value chain cluster are shown in Table 5.3. Due to the similarity between the results, the ratings are reported to the second decimal point to allow comparison.

Table 5.3 Comparison of the average impact rating for each Porter's diamond determinant by all wine industry respondents, agribusiness respondents, and wine business respondents

	Average factor score		
Porter model determinants	Wine industry total	Cluster 1 Agribusiness	Cluster 2 Wine business
Production factors	2.97	2.98	3.01

Demand factors	2.98	2.98	2.98
Firm strategy, structure and rivalry	3.53	3.53	3.60
Related and supporting industries	3.07	3.07	3.08
Government factors	2.19	2.19	2.26
Chance factors	2.22	2.26	2.32

Data source: Calculations: this study, this study's WES (WES, 2018)

Table 5.3 clearly depicts a strong alignment between the two clusters' impact ratings for all of the factor determinants. Sufficient responses were obtained from each cluster (Table 5.1) to support that agribusiness and wine business i.e. the wine industry value chain is well aligned, indicating a highly coordinated and well-informed wine industry value chain. This is an important finding and will be explored further in section 5.4.5, which presents the second Delphi round.

5.4.2 Principle component analysis to determine variations and alignment in the wine industry

PCA was performed on the full dataset of individual responses to the WES questionnaire to determine how consistent the ratings were for each factor across all respondents. The PCA analysis was performed for each Porter's determinant independently. The most correlated (greatest agreement) and least correlated (greatest disagreement) factors in each determinant are presented in Table 5.4.

Table 5.4 Summary of leading and lagging principle component analysis (PCA) and impact ratings per Porter's determinant

Highly correlated factors	PCA rating	Impact rating score	Least correlated factors	PCA rating	Impact rating score
Production factors					
Efficiency level	0.916	2.90	Labour saving equipment	0.597	3.21
Attaining short-term finance	0.906	2.79			
Quality packaging material	0.908	3.17			
Export packaging	0.901	3.24			
Attaining long-term finance	0.884	2.62			
Demand factors					
Price premium for healthier wines	0.947	2.90	Value of Integrated Production of Wine for producers	0.628	3.48
South African market size	0.908	2.66	Weather conditions impacting export buying patterns	0.637	2.54
Impact of health trends on wine consumption patterns	0.908	3.00			
Health impacting consumer choices	0.900	2.97			
Demand for sulphur free wine	0.895	2.86			
Firm strategy, structures, and rivalry					
Competition for resources (wine vs other agriculture)	0.838	3.59	Current resources for future wine growth	0.405	3.14
Customer to industry information flow	0.833	3.03			
Related and supporting industries					
Sustainability of local suppliers	0.938	3.79	Evaluation and testing of new varieties	0.493	3.34
Government financial support	0.874	1.24			
Government advice	0.874	1.17			
Government-funded scientific research institutions	0.863	2.48			
Government/policy factors					
Trade policy	0.864	2.14	Administrative regulations	0.575	2.82
Credibility and reliability of current political system	0.805	1.55			
Increased VAT	0.799	2.31			
Chance factors					
Impact of world events	0.906	2.03	The South African political system	0.669	1.69
Health: communicable diseases	0.890	2.55			
Economic development and growth	0.889	2.48			

Data source: Calculations: this study, this study's WES (WES, 2018)

This process was a critical step in refining the questionnaire for the second Delphi round. The factors found to be highly correlated in the PCA were taken forward for further exploration, discussion, and action in the

second Delphi round. These factors did not necessarily receive correspondingly high impact ratings from the respondents, as the PCA identified consensus in ratings between respondents, not impact.

Factors that displayed a high degree of variation in opinion between respondents in the PCA, indicated by low levels of correlation, were not used in the second round questionnaire. However, these factors do provide valuable insight into industry opinion. A high degree of variation indicates that different players across the value chain experience the factor from opposing perspectives. These findings could be used for further exploration and discussion to determine whether interventions could shift those respondents being constrained by a certain factor to instead be enhanced by that factor. As this study focused on determining the relevance of the factors with a high degree of consensus, this is left for future research.

The results for each Porter's diamond determinant are now discussed separately.

5.4.3 Analysis of each Porter's determinant

5.4.3.1 Production factor determinants

Production factors were scored at 2.97/5, indicating that they generally enhance competitiveness (Figure 5.8, Table 5.3). The agribusiness cluster rated this determinant marginally less than the wine business cluster, at 2.98/5 vs 3.01/5. There was thus good rating alignment across the value chain for the view that production factors enhance competitive performance.

Figure 5.8 shows the individual factor impact ratings for production factors. The competitive "performance of well-developed infrastructure" (PF11) scored the highest, making it the most enhancing factor, with "impact of technology advancement" (PF23) in second place. Infrastructure can act as a production factor itself and as an enabler for other production factors (Fedderke and Garlick, 2008). In countries such as China that have experienced rapid economic growth, upfront infrastructure development has laid a foundation on which subsequent economic growth can take place (Sahoo, Dash and Nataraj, 2010). While supporting infrastructure is critical for a functioning value chain, farm-related infrastructure would have the most direct impact on production factors.

"Establishment and production costs" (PF12) and "quality of unskilled labour" (PF5) were the most constraining production factors. High establishment and production costs translate into a high opportunity cost, which raises the unit price of the end product. Retailers placing pressure on the wine industry to sell wine at low prices has caused profit margins to suffer. If producers supplying these retailers want to remain in these business partnerships, it is important that the relationships across the value chain are based on mutual trust between parties (Delphi 2 Focus Group, 2018). When trust is present, it is possible to negotiate fair prices that accommodate realistic requirements across the value chain, which will ensure the sustainability and, in turn, competitiveness of the industry (SAWIS, 2017a; Vinpro, 2018a; WES, 2018).

The "availability of un/low skilled labour" (PF4) was rated as enhancing, but the "quality of unskilled labour" (PF5) was constraining across the industry. These ratings are seemingly contradictory and suggest that the availability of labour does not compensate for low-quality labour. The risk of upskilling labour is that the labour immediately becomes more marketable elsewhere, so may be lost. These results are further supported by the rating of the "impact of technology advancement" (PF23) as one of the most enhancing factors. Technology adoption speaks to both production efficiency and labour saving. As the "quality of

unskilled labour" (PF5) was such a prevalent constraining factor, the adoption of technology to streamline production would be a suitable solution, were it not for the constraining factor of the "cost of technology" (PF22).

The key to the "quality of unskilled labour" (PF5) challenge may lie with the language barrier that is often found between the employer and unskilled labour, rather than the quality of the labour itself (WES, 2018). Improved training, including communication support such as labour-language-friendly instruction manuals, would then be a good investment.

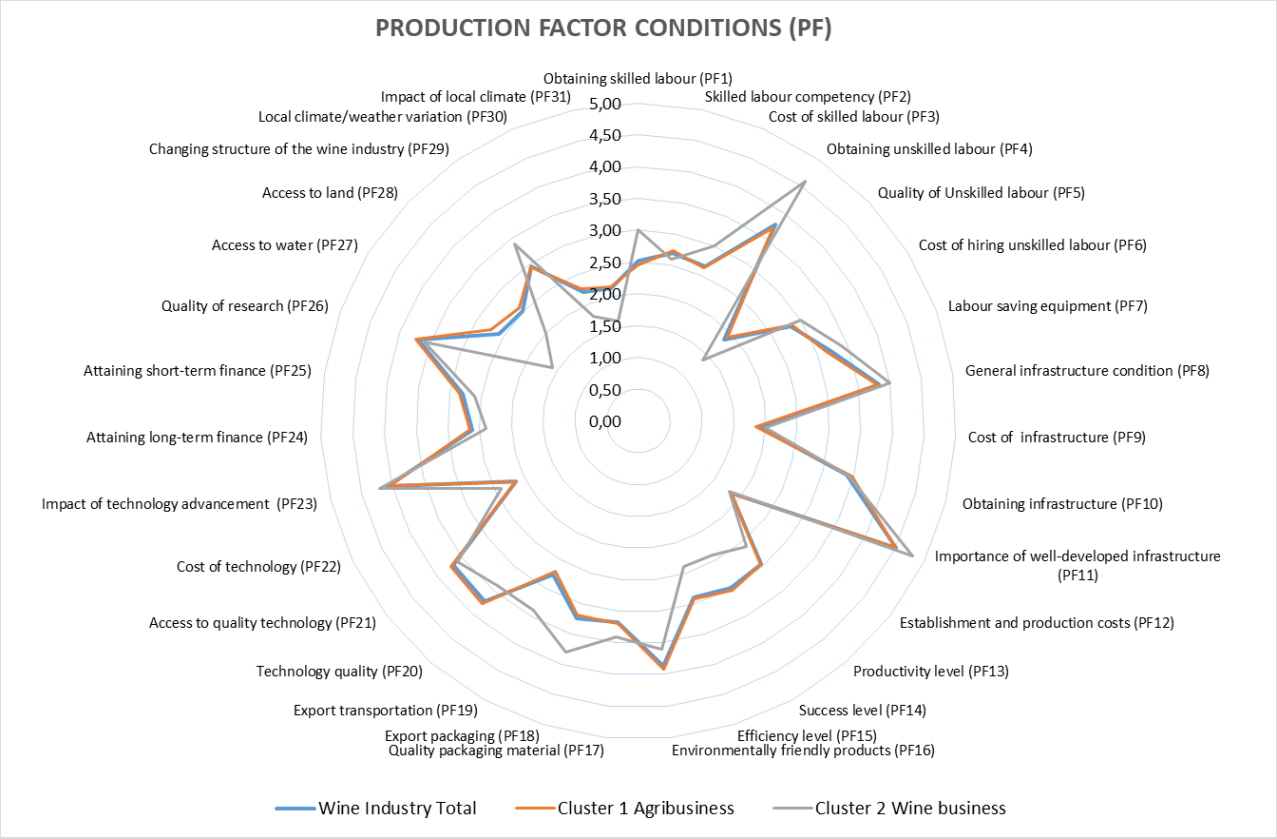

Figure 5.8 Comparison of the impact ratings given to the 31 production factor conditions by all wine industry respondents, agribusiness respondents, and wine business respondents

Data source: Calculations: this study, this study's WES (WES, 2018)

5.4.3.1.1 Principal component analysis of production factors

The PCA analysis of the production factors found that the competitiveness factors with the highest correlation in responses were production "efficiency levels" (PF15), followed by "attaining short-term finance" (PF25) and "quality packaging material" (PF17) (Table 5.4). The least correlated production factor was "labour-saving equipment" (PF7), which was significantly lower than the second- and third-lowest factors, "changing structure of the wine industry" (PF29) and "technology quality" (PF20), respectively (Table 5.4). These results indicated a diversity of views across the industry that required further analysis during the second Delphi round.

5.4.3.2 Demand factor determinant

Demand factors were scored at 2.98/5 overall (Table 5.3, Figure 5.9), showing that they were seen to generally enhance competitiveness. Both the agribusiness and wine business clusters also rated demand factors 2.98/5, indicating a remarkably high level of alignment across the value chain.

The demand factor seen to have the greatest enhancing effect on competitiveness was “customer purchasing power” (DF7), which reflects the industry’s ability to “give the customer what they want.” This was followed by opportunities to serve the “diversity of new international markets” (DF10). “Customer purchasing power” considers the customer to be the final purchasing customer, or consumer. By rating this factor as enhancing, the industry viewed the customer’s demand for wine as a driver, showing adequate demand for the product.

Retailers are major participants in the value chain and are very influential over sales patterns (Ehmke, Fulton and Akridge, 2004). They have the ability to drive scale by purchasing large volumes (Ehmke, Fulton and Akridge, 2004). However, their ability to purchase scale also creates bargaining power to drive down unit prices, which producers are often forced to do to continue supplying the retailer (Ehmke, Fulton and Akridge, 2004). As discussed for production factors, establishing trust across the value chain would play a critical role in fair price negotiations. Even so, it is likely that less competitive producers and cellars will not endure if they choose to continue supplying the retail sector without major strategic changes.

The current global wine markets are reaching saturation, and new wine markets need to be explored to tap into growth opportunities (IndexBox, 2018). Globalisation has spread the culture of wine consumption to countries with rising middle-class populations that were not previously considered target markets, such as South-East Asia (IndexBox, 2018). The industry will need to develop appropriate business models to gain access to such markets. These models would fall under “Firm strategy, structure and rivalry,” the factor discussed next.

The most constraining demand factors were “competing against other new-world wines” and “consumer education and information availability”. As discussed, Figure 5.3 shows that Chile is a more competitive wine-producing country than South Africa, with low transportation costs when exporting to the United States due to close proximity and favourable currents. Australia and New Zealand are also prominent new-world producers, producing highly regarded Southern Hemisphere wines that compete against South African wines on European shelves.

Factors DF22-DF29 all relate to how positive and negative associations between wine and health affect the competitive performance of the industry. The major health trends considered under the banner of health in relation to wine are organic, sulphur-free, and low-alcohol (or alcohol-free) wine. Health trends can also refer to the associated benefit of red wine consumption with health (Amato et al., 2017).

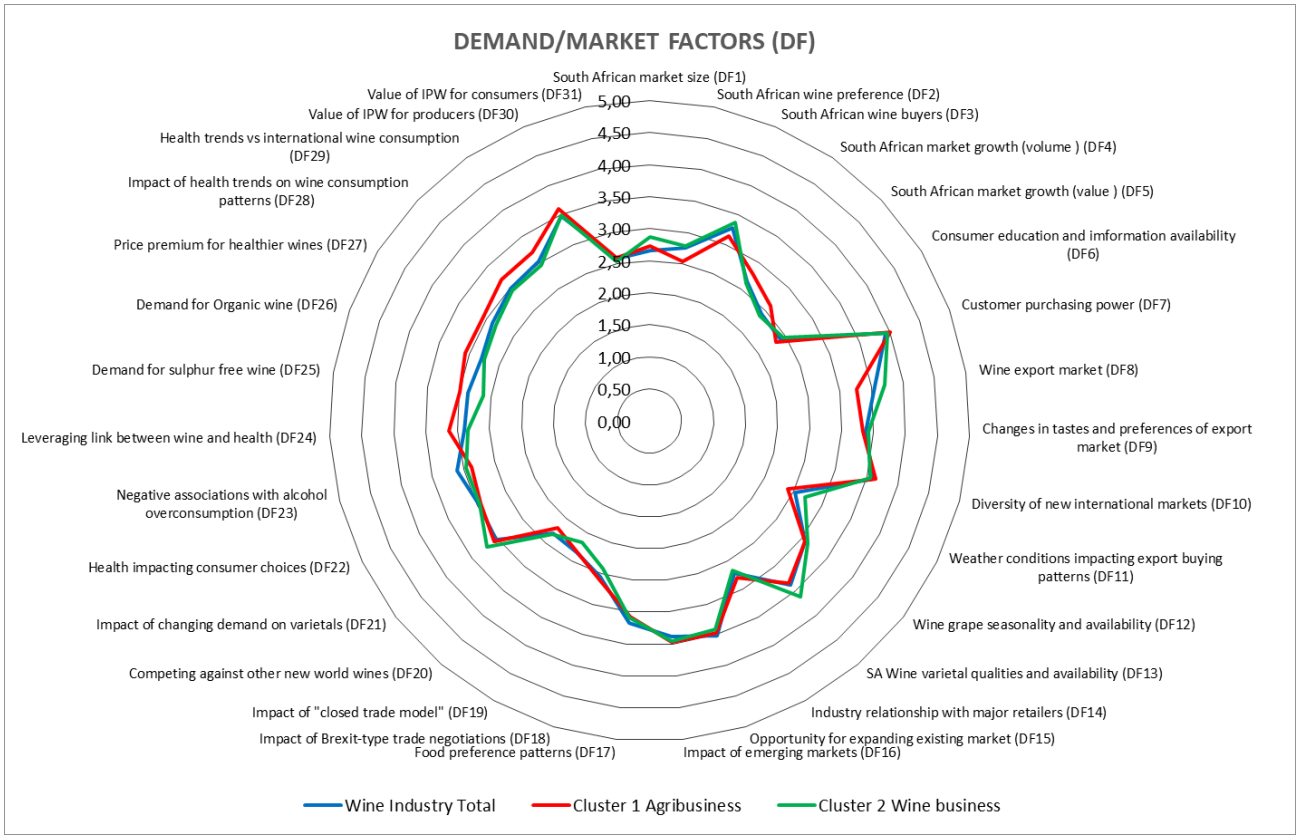

Figure 5.9 Comparison of the impact ratings given to the 31 demand factor conditions by all wine industry respondents, agribusiness respondents, and wine business respondents

Data source: Calculations: this study; this study's WES (WES, 2018)

5.4.3.2.1 Principal component analysis of demand factors

The five highest correlated demand factors are listed in Table 5.4, with "Price premium for healthier wines" (DF27) showing the highest degree of correlation between respondents. Of these five highly correlated demand factors, "impact of health trends on wine consumption" (DF28) had the highest impact rating score of 3.0/5.

The impact of health trends on the wine industry was included under demand conditions as these encompass the impact of shifts in consumer buying patterns on the wine industry. Four of the five highly correlated factors were related to health, indicating that the industry was well-aligned in how it views the impact of health on the industry. The impact rating scores for these highly correlated factors related to heath ranged between 2.86 and 3.00, indicating that these factors were relatively enhancing. This consensus presents an opportunity to leverage the wine industry's position in relation to health trends to drive competitiveness. This important finding was taken forward into the second Delphi round.

The least correlated factor was the "value of Integrated Production of Wine for producers" (DF30). Integrated Production of Wine is an environmental and sustainability accreditation that is aligned with similar international standards (Wine and Spirit Board, 2018). Although this factor had a low level of correlation between respondents, it still scored an overall high impact rating (3.21). Despite the wide distribution of respondents' ratings, there were thus sufficient responses at the upper end of the scale to result in a high

average rating. This factor was presented for discussion in the second Delphi round to clarify the low consensus around it.

5.4.3.3 Firm structure, strategy, and rivalry determinant factors

Firm strategy, structure and rivalry factors scored an average rating of 3.53/5 for all factors across the industry (Table 5.3, Figure 5.10), making it the most enhancing of the six Porter's diamond determinants. Agribusiness and wine business also rated it highly, at 3.53/5 and 3.6/5, respectively. These ratings showed alignment across the value chain when considering the importance of this determinant in driving competitive performance.

The three factors rated the most enhancing factors for competitiveness were the "the competitiveness drive of the South African product market" (FR4) at 4.59/5, "competition of the international market" (FR6) at 4.28/5, and "influence of scale" (FR8). The high scores for the first two factors suggested that the level of competition drives innovation through differentiation strategies (Newton, Jr and Jordan, 2015). The influence of scale can be linked to the increasing trend towards bulk wine, particularly for lower value wines (WRAP (Waste and Resources Action Programme), 2009). Exporting wine in bulk improves shipping efficiency as more wine can be transported in the same fixed container space than for bottled wine (WRAP (Waste and Resources Action Programme), 2009; Kotze, 2012; CBI Ministry of Foreign Affairs, 2016; Groenewald and Ratcliffe, 2018).

The "threat of new local market entrants" (2.79/5) (FR5) was rated the least enhancing factor for this determinant. However, its score is still above 2.5/5, so should not be viewed as constraining.

"Customer-to-industry information flow" (3.03/5) (FR2) was another low-scoring factor in this determinant, with wine business respondents rating this factor neutral to constraining (2.4/5). Although it also relates to the customer, this factor differs from the enhancing demand factor "customer purchasing power" (DF6). FR2 indicates that the wine business has not received the feedback it would like from downstream in the value chain. This finding suggests an unequal power distribution across the value chain that could ultimately affect the industry's competitiveness.

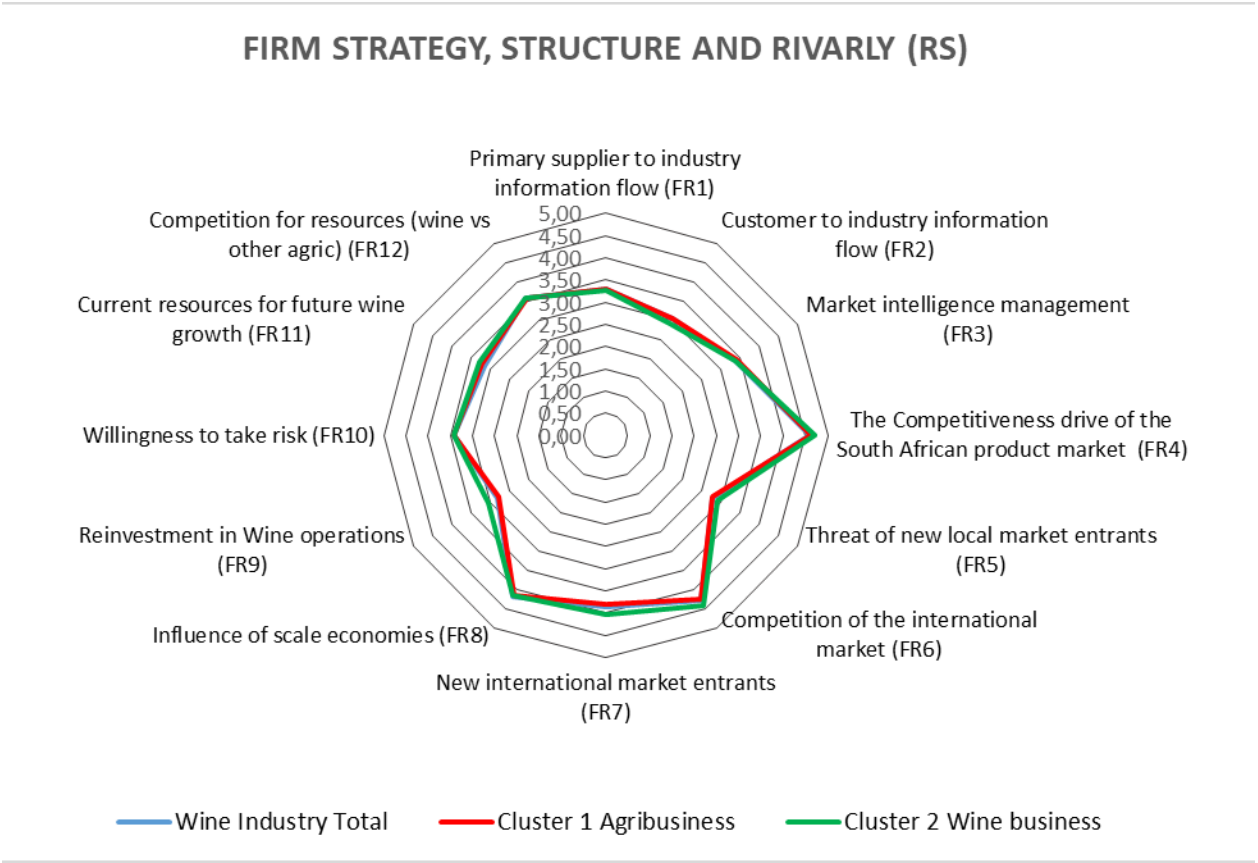

Figure 5.10 Comparison of the impact ratings given to the 12 firm strategy, structure, and rivalry factor conditions by all wine industry respondents, agribusiness respondents, and wine business respondents

Data source: Calculations: this study; this study's WES (WES, 2018)

5.4.3.3.1 Principal component analysis of the firm strategy, structure, and rivalry factor conditions

The factor with the highest degree of consensus in this category was that "competition for resources" (FR12) enhances competitiveness, which reflected the belief that only smart strategies can mobilise smart resources, by paying at least opportunity costs. "Competition for resources" also had a high impact rating score (3.59), indicating a positive association between this factor and enhanced competitiveness. Resources encompass enhancing assets, such as land, skilled labour, investors, and raw materials that will improve competitive performance or improve the ease of doing business. By rating this factor as enhancing, the industry showed that it viewed the current level of competition as beneficial for developing competitive strategies and driving improvement.

However, in a value chain with healthy competition levels, competitive pressures such the unequal power distribution across the value chain will place pressure on the wine business. As a result, weaker competitors will not sustain business in the long term. This "shake out " is already in progress, with the number of wine producers reducing from 581 in 2005 (Wines of South Africa, 2018) to 546 in 2017 (Chapter 3) (Wines of South Africa, 2018).

The lowest communality rating overall was 0.405 for “current resources for future wine growth” (FR11). The industry was thus divided over whether future resource mobilisation will support industry growth in the future. Agribusiness rated this factor at 3.2, whereas the wine business rated it at 2.8, suggesting that the wine business respondents felt the resource constraint more strongly than the agribusiness respondents. A score of 2.8 is still classified as neutral to enhancing and should not be viewed as a major constraint, only as a weak signal of industry concern. Nonetheless, as firm strategy, structure, and rivalry is the most enhancing Porter determinant, all of its factors should be considered by strategic decision-makers as part of the package, including FR11 as it could constrain future industry growth. Actions could include the allocation of critical resources or efficiency improvements to improve productivity from current resources, thereby creating margins for future growth.

5.4.3.4 Related and supporting industries determinant factors

Related and supporting industries factors were rated an average 3.07/5 for all factors across the industry (Table 5.3,), with similar scores by agribusiness (3.07/5) and wine business (3.08/5) respondents. The factors clustered in this determinant enhanced overall competitive performance. These ratings were indicative of a strong alignment between the sections of the value chain and within the industry as a whole in how this determinant was viewed to drive competitive performance.

The factors that were highly rated as enhancing competitiveness (Figure 5.11) were “quality of local suppliers” (RS13) and “cost of specialised technology services” (RS11). The alignment across the industry (total industry, agribusiness, and wine business) for both of these factors places the South African wine industry in a strong position to leverage the availability of affordable, new technologies. New technologies could include increasing quality and yield per hectare of wine grapes, improved logistics (Pretorius, 2000), environmental parameters to allow for selective fermentation, ultrasound technology, sustainability practices, and traceability and authentication systems (Brennan, 2018).

The two factors that were highly rated as constraining competitiveness were “government financial support” (RS2) and “government consultation and interactions” (RS3), both rated 1.2/5 by the total industry, with only slight variations in ratings by agribusiness and wine business respondents. This was a clear indication that the industry experienced the absence of government support, both financially and through collaborative consultations. This finding agrees with the ‘Wine Social Compact’ project within WISE, which aimed to secure “mutual protection and welfare” between the industry and government (South African Wine and Brandy Portal, 2018).

The factors in this determinant that were directly related to infrastructure – “availability and reliability of transport” (RS18) and “availability of storage/cellar/handling facilities” (RS16) – were both rated as highly enhancing. This finding ties in with the production factor “importance of well-developed infrastructure” (PF11), which was also rated as enhancing.

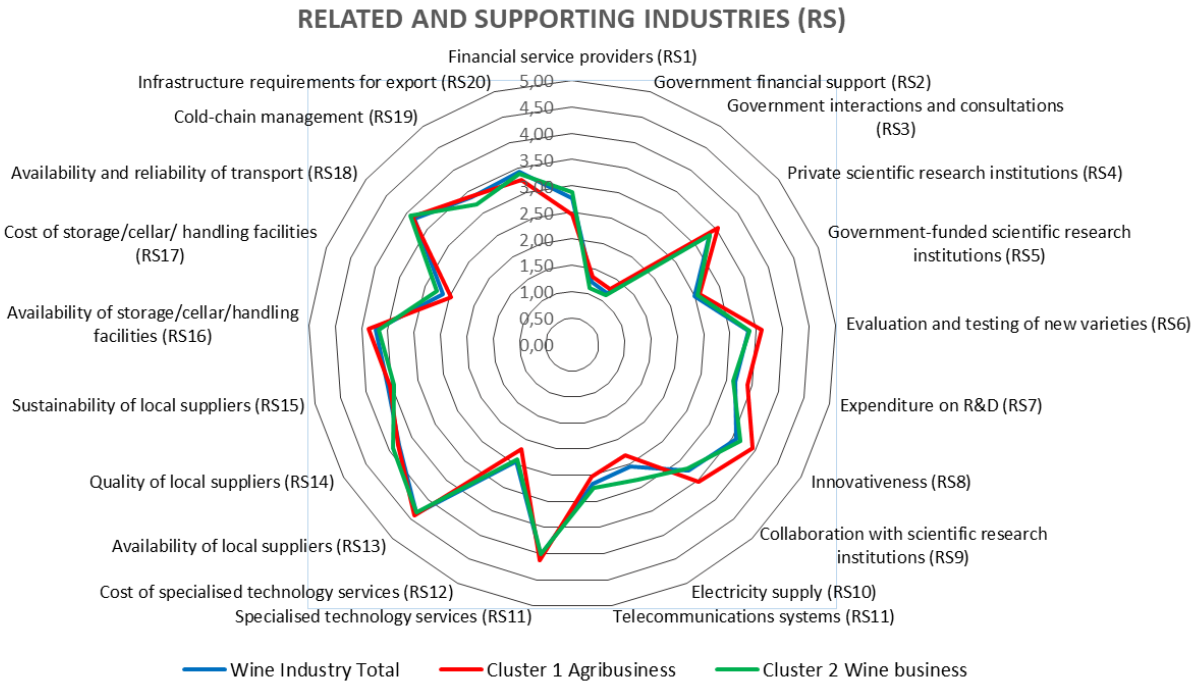

Figure 5.11 Comparison of the impact ratings given to the 20 related and supporting industries factor conditions by all wine industry respondents, agribusiness respondents, and wine business respondents

Data source: Calculations: this study, this study's WES (WES, 2018)

5.4.3.4.1 Principal component analysis of related and supporting industries factors

The highest-rating factor for consensus within this determinant was "sustainability of local suppliers" (RS15), which was also given a high impact rating score of 3.79/5. The value chain was thus aligned on the enhancing role that the "sustainability of local suppliers" plays in maintaining industry competitiveness. The other factors with high communality ratings were all linked to government-related services and institutions (Table 5.4) and had low impact rating scores. The industry thus agreed that there was an overall negative association between government-driven support and competitiveness, which will be explored further in section 5.4.5.5.

"Evaluation and testing of new varieties" had the lowest consensus at 0.493, revealing little alignment between the respondents. Despite an average impact rating score of 3.14/5, which suggested that this factor enhanced competitiveness, the PCA rating showed that respondents had highly varied opinions of the its importance. This division could have been due to the financial risks involved with investing in vineyards of new varieties, or producing wine from grapes of emerging varieties rather than investing in varieties that are familiar to the consumer (Delphi 2 Focus Group, 2018). Although there are strategic opportunities to plant vines according to wine trends, the length of the cycle to establish and produce wine from a new vineyard involves significant capital. Some producers and cellars are more comfortable producing varieties with a known demand. This finding can also be related to the concerns expressed about resources for future growth in section 5.4.3.2.

5.4.3.5 *Government determinant factors*

Government determinant factors scored an average rating of 2.19/5 for all factors across the industry (Table 5.3), with agribusiness (2.19/5) and wine business (2.26/5) respondents giving similar ratings. All clusters questioned thus agreed that government factors constrained competitive performance. The factors in this determinant create the legal and policy environment for competitive behaviour.

Only 3 of the 17 government-related factors are considered enhancing by the industry (Figure 5.12) and by the agribusiness and wine business clusters. The most enhancing factor across all three industry groupings of respondents was "regulatory standards" (GP9), rated at 3.76/5. Most of the regulatory standards pertaining to the wine industry are effectively industry-driven and thus have an inherently high level of buy-in because of the added value that they bring to the value chain.

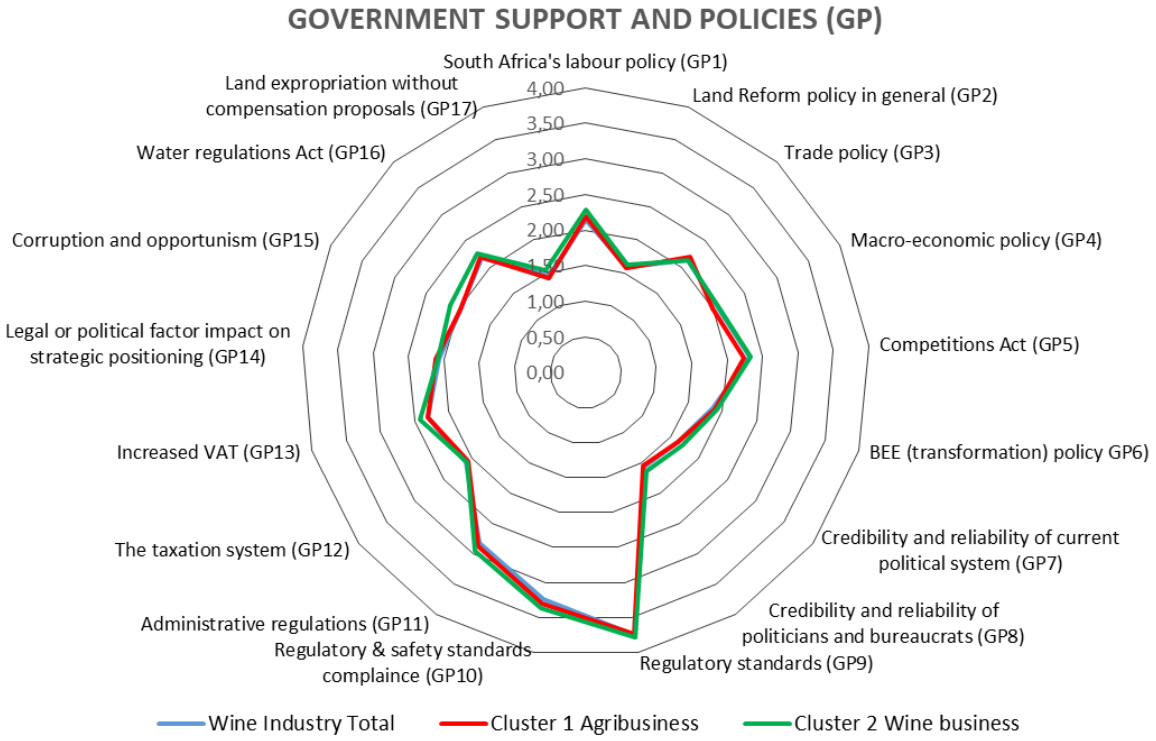

Figure 5.12 Comparison of the impact ratings given to the 17 government support and policies comparison factors by all wine industry respondents, agribusiness respondents, and wine business respondents

Data source: Calculations: this study, this study's WES (WES, 2018)

All of the remaining 14 factors were rated less than 2.5/5 and could be considered constraining. The two most constraining factors reflected on the uncertainties with South Africa's "land reform policy" (GP2), rated 1.59/5, and "land expropriation without compensation" proposals, rated 1.45/5. These two factors, together with "black economic empowerment (BEE) (transformation) policy" (GP6) and "corruption and opportunism" (GP15), were constraining factors with a strong socio-political influence, so have implication for investment and the future mobilisation of resources.

5.4.3.5.1 Principal component analysis of the government support and policies factors

The factor with the highest degree of correlation between respondents was “trade policy” (GP3) (Table 5.4). “Administrative relations” (GP11) had the lowest consensus and a close to neutral impact rating of 2.82/5, suggesting division in opinion among the respondents.

5.4.3.6 Chance determinant factors

Chance determinant factors scored an average rating of 2.22/5 for all factors across the industry (Table 5.3). The wine business respondents were marginally more optimistic in their factor ratings than the agribusiness respondents for all but one of the factors (Figure 5.13). These impact ratings indicated that the industry agreed that chance factors all marginally constrained competitive performance. Chance factors are by their nature factors that are a matter of chance, or an “act of God.” This rating indicated that the industry was not well-prepared to initiate sporadic and opportunistic behaviour to benefit from chance factors. This could be addressed by putting early warning systems in place to position the industry to respond more strategically and opportunistically to chance factors.

The chance factor with the highest impact rating was the “current exchange rate” (CF1) (3.21/5). The wine business cluster rated the current exchange rate as more enhancing than the other two industry groups, indicating that the wine industry was benefiting from export. In contrast, “exchange rate fluctuations” (CF2) were rated as constraining (2.11/5), indicating that the wine industry suffered from the inconsistencies in the exchange rate. Although the industry benefits from a weak rand, it is difficult to capitalise on the exchange rate when fluctuations are unpredictable (Delphi 2 Focus Group, 2018).

The factor rated as most constraining was “crime” (CF6) at 1.38/5. Crime plays a two-part role in constraining the industry. The agricultural or business environment is at risk of financial loss to crime, which constrains the wine industry. Crime also creates fear. As a result, industry growth may be constrained at a business level. The second aspect will be discussed under Second Delphi round – ratings of relevance.

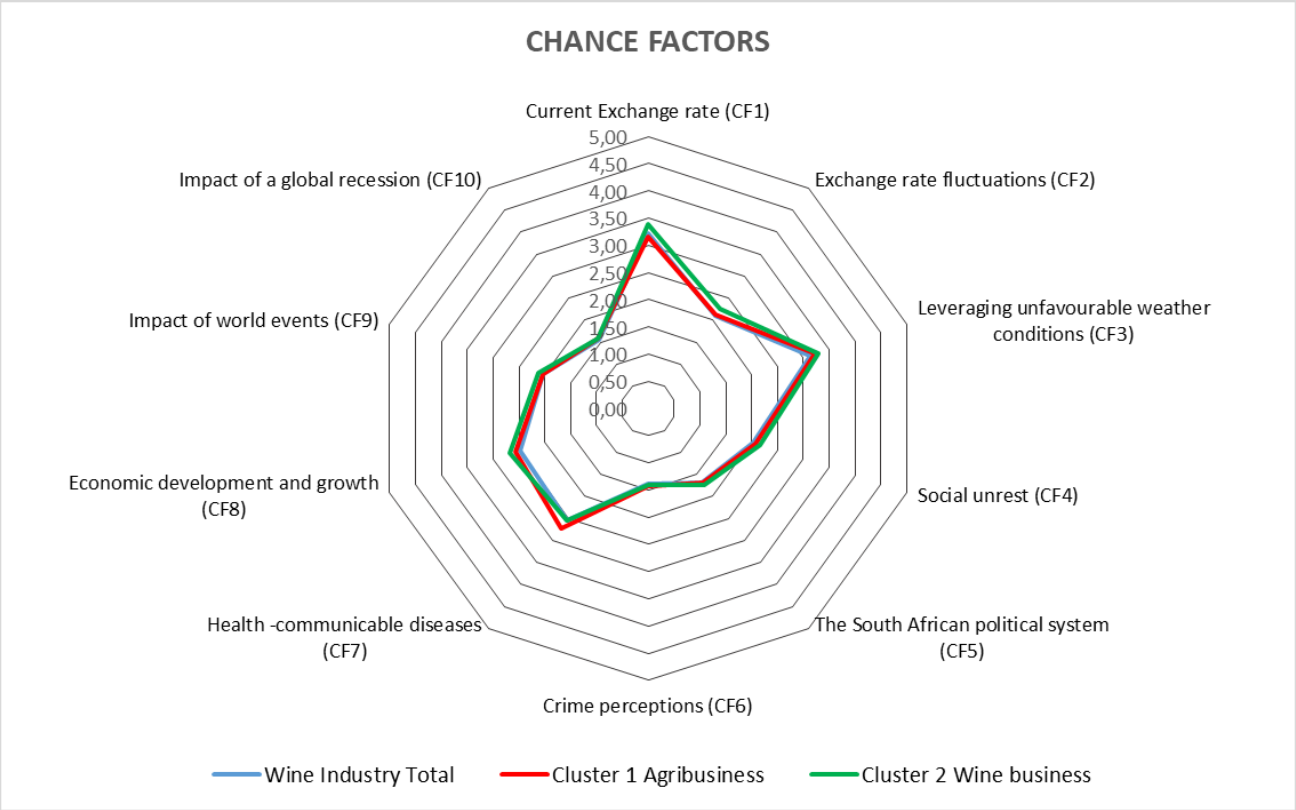

Figure 5.13 Comparison of the impact ratings given to the 10 chance factors by all wine industry respondents, agribusiness respondents, and wine business respondents

Data source: Calculations: this study, this study's WES (WES, 2018)

5.4.3.6.1 Principal component analysis of the chance factors

Three chance factors were highly correlated, "impact of world events," "health – communicable diseases," and "economic development and growth." The impact ratings for all three of these factors were low, and eight of the ten chance factors were rated as constraining competitiveness. Although little can be done to influence chance factors themselves, there are opportunities to build resilience against these factors to create a buffer against constraining competitiveness.

5.4.4 Validation of the Wine Executive Survey

Cronbach's alpha was calculated to determine the reliability of the WES questionnaire. The 40 highest-ranking factors from the PCA analysis were selected representatively across the six Porter determinants. Including 40 factors ensured enough data points to give a balanced alpha-value (Tavakol and Dennick, 2011).

Table 5.5 Cronbach's alpha for WES

Cronbach's alpha	Cronbach's alpha based on standardised items	Number of items
.726	.728	40

Data source: Extraction Method: Principal Component Analysis; SPSS.

Cronbach's alpha has a maximum value of 1, representing the highest level of interrelatedness. The alpha value for the WES of 0.726 (Table 5.5) falls within the spectrum of 0.7-0.95, indicating that the questions are sufficiently interrelated but still varied (Tavakol and Dennick, 2011).

5.4.5 Second Delphi round – ratings of relevance

The second Delphi round was conducted on 3 December 2018 at VinPro (Paarl offices). The session comprised a focus group of experts from industry bodies that are in regular contact with participants across the full value chain.

A presentation was given on a brief theory of the methods applied in this research assignment, an outline of the analytical framework, and major empirical results and findings of the study. A roundtable discussion on the results of the WES was then conducted.

The overall impact ratings and the ratings per Porter's determinant were discussed. The PCA outcomes were presented and discussed to determine the relevance of each Porter's determinant and of the highly correlated factors within each Porter's determinant.

The Porter's determinants were rated by the focus group in descending order according to the perceived relevance of each determinant over the next 12 months (Table 5.6) to prioritise focus and energy.

Table 5.6 Relevance rating of Porter determinants over the coming 12-month period

Porter determinant	Relevance rating
First structure, strategy and rivalry	10
Production factors	9
Demand factors	8
Related and supporting industries	5
Chance	5
Government	5

Data source: Second Delphi round (Delphi 2 Focus Group, 2018)

There was agreement that – as per the Porter Diamond (Porter, 1990, 1998; Cho and Moon, 2013) – all determinants would weigh equally in terms of importance over the long term but, in the short to medium term (i.e. tactically), 'firm structure, strategy and rivalry', 'production factors' and 'demand factors' would result in the highest returns on time invested.

It was clear from assessing the impact ratings across all of the determinants (summarised in Table 5.3) that the alignment across the value chain could be attributed to the good relationships between cellars and producers and the high level of integration between agribusiness and the wine business (Delphi 2 Focus Group, 2018). In contrast, Boonzaaier (2015) and Abei (2017) observed poor alignment in perceptions of enhancing and constraining factors between agribusiness and the wine business.

The relevance of the individual factors and focus group discussions about their ratings are presented below.

5.4.5.1 Production factors

The factors identified as highly correlated through the PCA were not considered as highly relevant to the current industry competitiveness drive by the focus group. However, the group did note that "attaining short-term finance" (PF25), which was rated as neutral to marginally enhancing in the WES, offers a gap for

financial institutions to provide a tailor-made solution for the needs of the wine industry (Delphi 2 Focus Group, 2018).

The focus group selected “access to water” (PF27) and “establishment and production costs” (PF12) as highly relevant to the industry today (Delphi 2 Focus Group, 2018). Access to water is an emerging factor that has been particularly relevant over the Cape drought, which affected water availability for irrigation and wine production over the 2017/2018 growing and harvest season. It is expected that much future action will be directed towards water efficiency and productivity.

5.4.5.2 Demand factors

The local market is facing constraints through the proposed “Control of Marketing of Alcoholic Beverages Bill of 2013” (du Toit, 2018), which proposes the prohibition of marketing messages containing information about the health benefits of alcohol consumption (Delphi 2 Focus Group, 2018; du Toit, 2018). While this draft will constrain the industry in how it can leverage associated health benefits, it will also prevent marketers from exploiting consumers through misleading advertising. Although health is an emerging trend among the wider consumer base, the impact of this trend on wine consumer buying trends is currently limited to a small group of consumers (Delphi 2 Focus Group, 2018). The most prevalent trends are an increased demand for low-alcohol (local market) and organic wine (export market) (Delphi 2 Focus Group, 2018; VinIntell, 2018).

The lack of consensus between WES respondents, highlighted by the low PCA ratings, is linked to the mixed opinions across the value chain of the benefit of the Integrated Production of Wine system to the industry. Irrespective of the value of the finished product wine and the profitability of the producer or cellar, implementation and maintenance of the Integrated Production of Wine system requires similar human resource, and time, adding cost to the production process (Delphi 2 Focus Group, 2018). The focus group participants were divided as to whether this effort is compensated for through return on investment (Delphi 2 Focus Group, 2018).

5.4.5.3 Firm strategy, structure, and rivalry

“Firm strategy, structure and rivalry” was confirmed in the second Delphi round as being the most influential determinant affecting competitive performance over the short term (

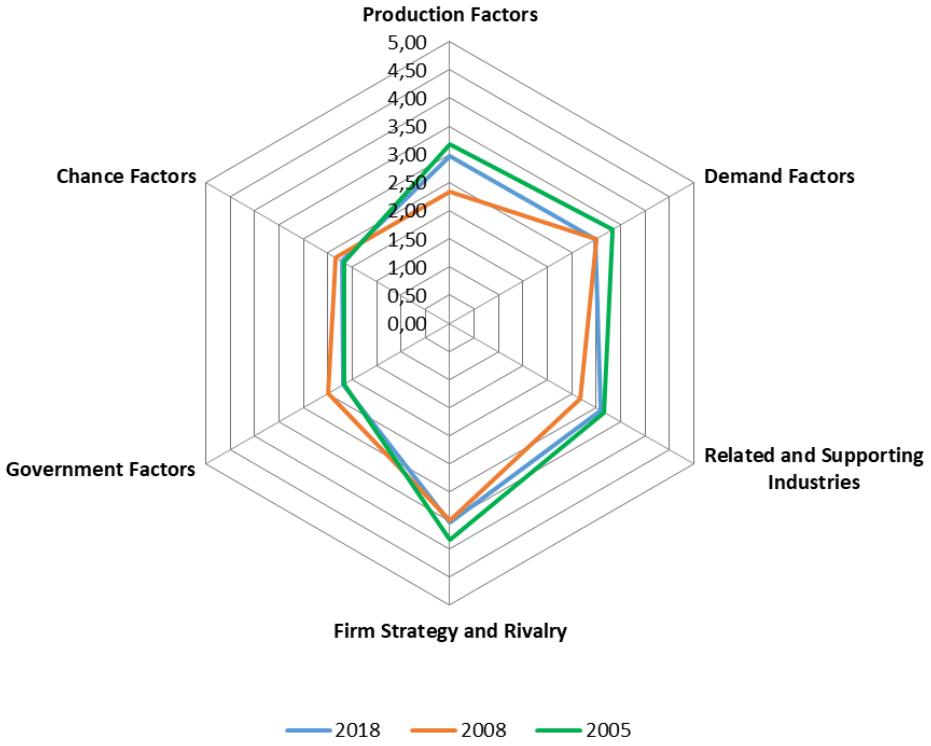

Figure 5.7, Table 5.6) (Delphi 2 Focus Group, 2018). This is typical of a market and entrepreneurial driven system (Porter, 1990). The industry thus needs to allocate time and resources to improve information and business intelligence flows and develop and implement strategies to leverage the competitive performance of this determinant. Improved government factors related to the investment and decision environment will aid these efforts.

5.4.5.4 Relating and supporting industries

The second Delphi round confirmed the relevance of the highly correlated factors from the PCA analysis, “sustainability of local suppliers” (RS15) and “government financial support” (RS2). Both factors are vital for effective, efficient value chain development and performance, which are themselves necessary for improved competitive performance (Webber and Labaste, 2011).

5.4.5.5 Government determinant factors

The overall rating of 2.19/5 for government factors was confirmed in the second Delphi round. The ‘government determinant’ is a supporting environment determinant, comprising factors that affect competitive performance but are mostly out of the industry’s control (van Rooyen, Esterhuizen and Stroebel, 2011). However, the discussion around this determinant and the consensus that “trade policy” (GP3) was a relevant, constraining factor led to the suggestion that re-opening channels of communication between the industry and government may assist with identifying common goals that support government objectives and the wine industry’s competitive performance (Delphi 2 Focus Group, 2018).

5.4.5.6 Chance determinant factors

The impact of the crime (CF6) factor on everyday business practices and performance was discussed in section 5.4.3.6. The second aspect related to crime is the association between South Africa as an

investment and production destination and crime, which negative affects the country's reputation in the export market (Delphi 2 Focus Group, 2018). This association adds to scepticism towards products from a country with an unstable social and political climate (Delphi 2 Focus Group, 2018). When competing against other new-world producers, crime is a significant constraining factor that can result in consumers selecting wines from what they deem to be more stable or reliable producing countries. If not dealt with, this negative socio-economic association will become problematic and negatively affect exports (Delphi 2 Focus Group, 2018).

Together with the highlighted socio-economic government factors, "social unrest" (CF2) and "crime" (CF6) are factors that are specific to South Africa and countries in similar states of development.

5.5 Conclusion

The South African wine industry is competitive within the context of the South African economy. However, a downwards trend has been observed since 2009. While a reduction in competitiveness can be attributed to the economic downturn in 2009, the sustained downward trend, albeit marginal, is a cause for concern and requires understanding to mitigate contributing factors where possible and prevent further decline.

Although the South African wine industry is partially trade-driven, its competitive performance was not directly related to the exchange rate. This finding confirmed that factors other than the exchange rate influence competitive performance and should be considered for strategic interventions to boost competitive performance.

Despite the decline observed in competitive performance, South Africa remains highly competitive when compared to other wine-producing countries. It has the second-highest RTA value, surpassed only by Chile. South Africa is thus in a strong position for international trade, which should be leveraged by strategic decisions across the value chain (production, wine-making, marketing, sales, and distribution) to promote South African wines and optimise quality, volume, and profits.

Bulk packaging of wine presents an opportunity for increasing industry profitability, mostly through efficiencies gained during packaging and transportation. However, a major concern for the South African wine industry is the loss of national brand identity through product association when bulk wine exports are rebranded in the export market. The opportunistic nature of many bulk sales to make up for international shortfalls is also concerning, as this is not a reliable model for sustainable market growth. However, there are opportunities to explore the efficiencies gained through bulk packaging and transportation, while retaining the identity of the wine producer and South African wine industry.

This study gathered feedback from industry through a survey (the WES) and a focus group, using the two processes as two steps in an iterative Delphi consensus process. Firm strategy, structure, and rivalry was rated the most important determinant for influencing competitive performance over the next 12-month period.

High correlations in the PCA or high relevancy ratings by the focus group indicated that respondents generally agreed about a factor's importance in competitiveness. Factors for which consensus was reached included "attaining short-term finance" (PF25), "establishment and production costs" (PF12), "access to water" (PF27), "customer purchasing power" (DF7), "sustainability of local suppliers" (RS15), "government financial support" (RS2), "the competitiveness drive of the South African product market" (FR4), "trade policy"

(GP3), “current exchange rate” (CF1), and “crime” (CF6). Leveraging those highly correlated factors with a high (enhancing) impact rating and addressing those with a very low (constraining) impact rating will allow decision-makers and influencers to directly increase competitiveness across the South African wine industry value chain.

In general, the views across the value chain were aligned and showed a high degree of consensus on the impact of observed factors, with no significant differences in impact ratings. This is indicative of a well-informed and aligned value chain. PCA found two factors that were poorly correlated, “current resources for future wine growth” (FR11) and “evaluation and testing of new varieties” (RS6).

In the final step of the analytical framework, strategic recommendations and conclusions will be draw based on the results presented in this chapter. The final step will be discussed in Chapter 6.

6 Conclusions, recommendations, and strategic proposals

6.1 Introduction

Chapter 6 summarises the outcomes of this research assignment in a logical and systematic manner that will best represent them. It concludes with step 5 of the analytical framework that was followed, presenting industry strategy proposals based on the results found.

The summary of major findings is followed by an assessment of the research questions and stated hypothesis that were proposed in **Chapter 1**. This assessment and the summary of findings are used to draw meaningful conclusions and strategic proposals that may be useful for improving the competitive performance of the South African wine industry.

Out of these conclusions and strategic proposals comes a set of recommendations that can be used for shaping future research and defining the future competitive space within the South African wine industry **(step 5)**.

6.2 Summary of major findings (steps 1-4)

6.2.1 Defining competitiveness (step 1):

Competitiveness was defined as “the ability of the South African wine industry to sustain or grow business through trade for South African wine amidst a changing agricultural, political, social, environmental, governance and production landscape and unpredictable exchange rates, while consistently earning at least the opportunity cost of resources employed” (Ezeala-Harrison, 2005).

6.2.2 Measuring competitiveness (step 2)

RTA and RCA measures clearly showed two major phases to the competitive performance of the South African wine industry. In phase 1, 2001-2009, fluctuating and increasing competitive performances were observed. In phase 2, 2009-2017, fluctuating and decreasing competitive performances were observed. The segregation into phases is different that used by van Rooyen *et al.* (2011) as a result of retrospective insights into the overall trends that were at play at the time. ITC data were mostly used to calculate competitive measures as this dataset has a more comprehensive incorporation of opportunity costs (refer to the definition above and in Chapter 2). During phase 1 and based on a sustained improvement in competitiveness during the 1990’s, the industry experienced an overall increase in competitive performance, with RTA values rising from 4.88 in 2001 to 6.52 in 2009. Phase 2 represents an overall decline, with RTA values falling to 3.84 in 2017. Although the RTA score is still indicative of a competitive industry, the declining trend over phase 2 is cause for concern.

6.2.2.1 Playing the global game

Wine is a highly contested global product, and the performance of the South African industry against its international competitors remains an important measure to guide strategies. Despite the recent declining RTA rates for the South African wine industry, South Africa remains a leading wine-producing country. It has been the second most competitive wine-producing country on the globe since 2007.

6.2.3 Bulk vs bottled wine

The competitive performance of the bottled and bulk wine industries was compared. The competitive performance of these different packing volume categories differed significantly, with bulk wine consistently more competitive than bottled wine. Between 2011 and 2017, the average RTA for bulk wine was 12.70, while the bottled wine averaged at 5.29. However, the declining trend in competitive performance was also observed across both of these categories, indicating that neither category is exempt from the stronger effects of constraining factors.

6.2.3.1 Wine and wine products

From assessing competitive performance across the value chain, the wine products with the highest RTA values were bulk wine followed by bottled wine (6.2.3). The wine product with the lowest average RTA (0.06) was "spirits obtained by distilling grape wine or grape marc," which includes brandy. An average RTA this close to zero indicates an uncompetitive industry.

6.2.4 Impacting factors (step 3):

Of the 121 factors presented in an industry-wide executive level survey (the WES), the top three enhancing factors selected were "the competitiveness drive of the South African product market," "importance of well-developed infrastructure," and "quality of local suppliers." The three most constraining factors selected were "government consultation and interactions," "government financial support," and "crime perceptions."

6.2.4.1 Wine value chain

The results of the WES were reported for the industry as a whole, and with respondents split into agribusiness (including wine grape production) and wine business (including cellars) clusters. The clusters and, therefore, the total industry displayed a high level of alignment in impact ratings for both determinants and individual factors. This alignment can be interpreted as indicating that these factors were experienced similarly across the value chain, and that the value chain was coordinated rather than fragmented.

6.2.5 Determinants of competitiveness (Step 4):

The impact ratings obtained from the WES were condensed into the six Porter's diamond determinants: production factors; demand factors; firm strategy, structure and rivalry; related and supporting industries, government factors; and chance factors.

'Firm strategy, structure and rivalry' was reported as the most enhancing determinant for competitive performance in the WES. This rating was confirmed during the second Delphi round, held as a focus group. Here, "firm strategy, structure and rivalry" was selected as the most relevant determinant for enhancing competitive performance over the next 12-months. "Government factors" was rated as the most constraining factor in the WES, which was again confirmed in the second Delphi round. However, not all of the factors within a particular determinant that were highly correlated in the PCA were found to be relevant to the current competitive performance of the South African wine industry by the focus group.

6.2.5.1 *Socio-economic factors*

Both the WES and focus group highlighted constraining factors with a high level of interrelation due to their socio-economic associations. This finding suggests an emerging constraining theme, which is discussed in section 6.4.

6.2.5.2 *Changing competitive space:*

The current ratings were compared at the determinant level to the impact ratings from similar surveys conducted in 2005 (Esterhuizen and Van Rooyen, 2006) and 2008 (van Rooyen, Esterhuizen and Stroebel, 2011). From .

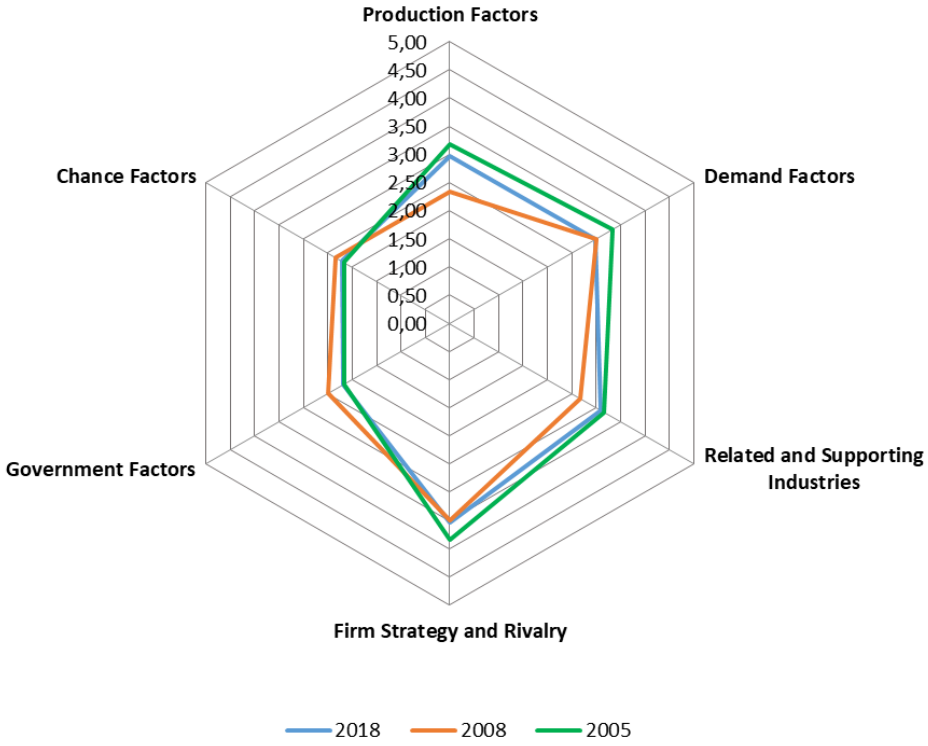

Figure 5.7, it is clear that the competitive space reported in 2005 was found to be reduced in 2008 as a result of the industry feeling the impact of the global economic crisis. This confirmed the open nature of the South African economy and the need to operate as competitive as possible. The quantitative section of this study then found that a year later, the RTA began to decline at the beginning of phase 2. However, although the RTA continued to decline, the competitive space expanded again in 2018, almost recovering to the competitive space in 2005.

6.2.5.3 *The competitive space in the wine industry is driven by internal forces:*

Many factors within the Porter's diamond determinants are related to internal forces and enhance competitive performance within the South African wine industry. For example, "firm strategy, structure, and rivalry" was the most enhancing factor, followed by "related and supporting industries," "demand factors", and "production factors". "Chance factors" and "government factors" are both constraining determinants. Some of these factors are unpredictable, but others, particularly those related to government policy and framework, are actively constraining the industry.

6.3 Validation of the research questions and stated hypothesis

The research questions posed for this study were presented in Chapter 1. Over the course of this research assignment, these questions provided structure for the research and have been addressed adequately as per the listed findings above.

The stated hypothesis was: “The industry’s competitive performance is the product of a complex interrelation of determining factors, each playing an enhancing or constraining role.” This hypothesis was found to be valid as an inconclusive relationship was found between the exchange rate and RTA competitiveness ratings, and the WES results indicated the diversity of the enhancing and constraining factors at play.

The relationship between the exchange rate and the South African wine industry’s RTA was shown to be not directly proportional, as discussed in Chapter 5. There was no clear pattern between the changes in exchange rate and the RTA for the wine industry between 2001 and 2017. The continual shifts in the relationship between the exchange rate and RTA confirmed that the exchange rate was not the sole factor responsible for shaping competitive performance. The WES also rated “firm strategy, structure, and rivalry” as the most relevant determinant for enhancing competitive performance, followed closely by “related and supporting industries”, “demand factors,” and “production factors,” while “exchange rate” was rated a relevant factor under the “chance” determinant.

This confirmation of the hypothesis presents the opportunity to provide strategic recommendations for enhancing the competitive performance of the South African wine industry, which is Step 5 of the analytical framework.

6.4 Creating a new Porter’s diamond determinant: accommodating socio-economic, political, and transformation factors in an emerging economy

As first alluded to by Michael Porter (2007) when referring to the South African situation and reinforced by the second Delphi round in this study, Porter’s diamond does not readily incorporate or give due attention to the significant number of factors with a socio-economic/political link. These factors mostly pertain to aspects such as labour, crime, land reform, transformation, and aspects of political instability. Although not all developing economies have similar ongoing socio-economic, political, and related transformation challenges, these factors are not necessarily limited to the South African wine industry or South African agriculture.

It is proposed that future studies on competitiveness in the South African context consider the role of socio-economic/political and transformation factors on competitive performance as part of Porter’s determinants. It is also proposed that the effectiveness of extending the Porter model to include a new, seventh, determinant be assessed, hereafter referred to as the socio-economic determinant. This new determinant would identify the role of socio-economic/political factors and transformation on the competitive space and highlight the need for specific strategies and interventions to address these currently constraining factors of competitive performance.

Factors were selected for the socio-economic determinant based on the factors included in the WES that could logically be reassigned to this determinant. However, this classification was subjective and is not necessarily representative of the range of factors that, if formalised, would need to form part of this determinant.

Figure 6.1 shows an example of the competitive space based on this expanded seven-determinant Porter's diamond would look like, with some factors used in this research assignment restructured to fall under the new socio-economic determinant. It is clear that the socio-economic determinant would become the most constraining determinant. This proposed socio-economic determinant was represented at factor level in a radar diagram to gain insights into the enhancing or constraining impact of each factor on competitive performance (Figure 6.2).

The socio-economic factors determinant was overall constraining. Only "obtaining unskilled labour" and the "cost of hiring unskilled labour" rated as enhancing, with the remaining eight constraining factors all rated less than 2.5/5. "Crime perceptions" was rated the most constraining at 1.38/5, and the remaining factor ratings ranged between 1.45/5 and 2.03/5. The overall constraining nature of this proposed socio-economic determinant highlights the effect of these factors on competitive performance and the need to address this determinant as a whole.

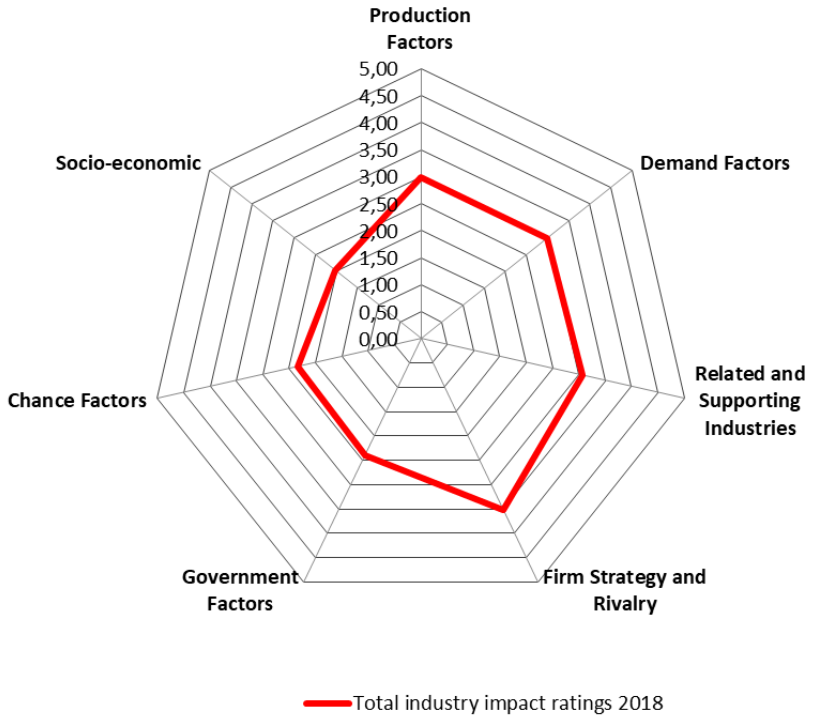

Figure 6.1 Competitive space of the South African wine industry under the proposed new structure, which includes a socio-economic determinant

Data source: Calculations: this study, this study's WES (WES, 2018)

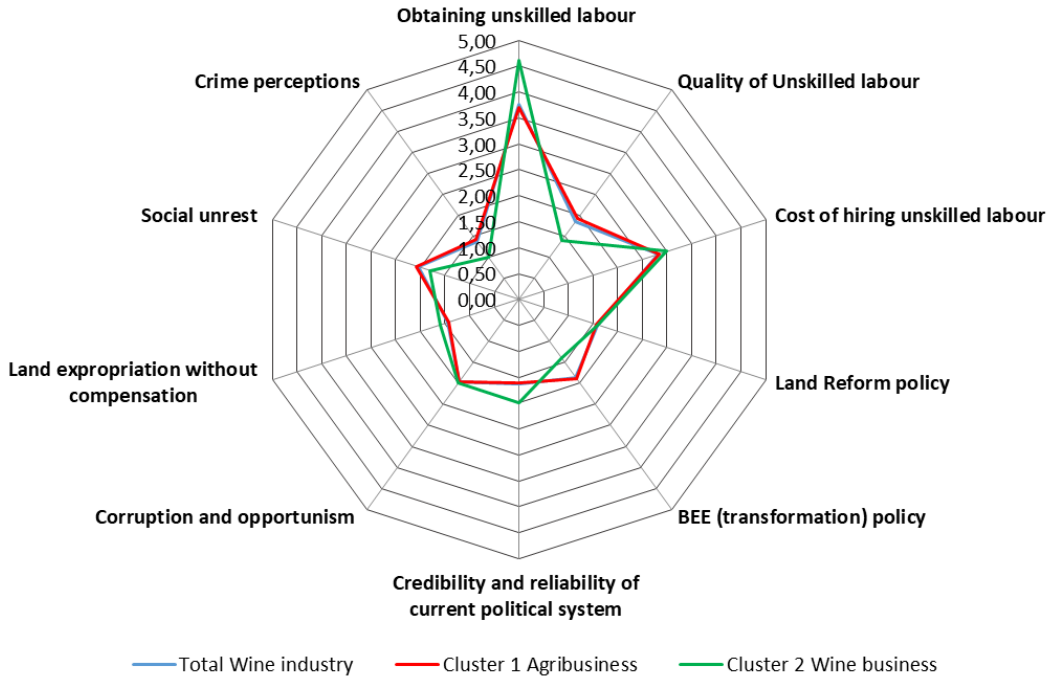

Figure 6.2 Impact ratings of socio-economic determinant factors.

Data source: Calculations: this study, this study's WES (WES, 2018)

6.5 Proposed strategies to enhance competitive performance of the South African wine industry (Step 5)

The strategic proposals laid out below (step 5 of the analytical framework, described in Chapter 3) were primarily drawn from the outcomes of the WES and the second Delphi round focus group session. These strategies aim to address factors that were identified as relevant and constraining and to draw consensus from industry feedback.

One of the key outcomes of the second Delphi round session was confirmation that "firm structure, strategy, and rivalry" was the most influential determinant for enhancing competitive performance. Leveraging the strength of this determinant with production and demand factors offers a significant opportunity to develop these factors further to optimise their enhancing impact on the industry.

Specific factors within the six Porter's determinants with the ability to shift competitive performance are discussed below.

6.5.1 Securing access to water

Access to water (PF27) was highlighted as one of the most relevant production factor determinants to be addressed over the coming 12-month period. Access to water and its cost has become particularly relevant in the wake of the 2017/2018 drought in the Western Cape region during the growing and harvest season. Water shortages affect the value chain at the producer and cellar level, while water costs affect prices across the value chain. The uncertainty of future water access and weather patterns presents an opportunity to build resilience into the industry. This can be achieved through a multi-faceted approach of shifting production to more drought-resistant wine grape varietals, increasing water storage capacity at the producer and cellar

level, optimising water use in the cellar, reducing water wastage, and recycling cellar wastewater through water treatment plants.

6.5.2 Attaining short-term finance

“Attaining short-term finance” (PF25) and “establishment and production costs” (PF12) were identified as relevant in the second Delphi round. These factors are related to one another as the need for short-term finance is often linked to the need to bridge the gap between the financial outlay for “establishment and production costs” and income from sales. This gap presents an opportunity for the finance sector to offer a wine-industry-specific solution that will provide financial flexibility during times when operations would otherwise be constrained due to cash flow. This solution could be a public-private package linked to transformation goals (see section 6.5.4) and could use favourable exchange rate conditions (see section 6.5.5).

6.5.3 Branded wine packaging format

Wine is mainly exported as bulk or bottled wine. This study reported the empirical competitive performance for each of these formats through RTA graphs. Bulk wine was more competitive than bottled wine, although both formats had positive RTA values. The participants in the second Delphi round reported divided opinions on these two packaging formats. Bottled wine was associated with retaining the identity and value of the South African brand. Bulk wine sales were often opportunistic, making up for production shortfalls in other markets. The wine is then usually labelled and rebranded by the customer, resulting in loss of identity for South African wine and the producing cellar’s brand. However, there is scope to overcome this tension between bulk and bottle by identifying positive aspects of each format and developing practices that capitalise on the environmental benefits and production and logistical efficiencies of bulk wine without the loss of South African identity (VinIntell, 2018).

The strategic positioning of the South African wine industry to sell bulk wine opportunistically when there are shortfalls in the export market is advantageous for boosting trade. It cannot be a standalone supply strategy as the sale of bulk wine to supplement international short-falls is based on spot-buys rather than established trading relationships. The industry needs to be founded on strong, trusted wine brands with a consistent, growing demand due to the quality and value that they provide. These stable trading relationships can involve both bottled and bulk wine, but the latter should retain an identity that links demand to the South African wine industry. Bulk wine branding is an innovative and practical solution that leverages the efficiencies of bulk wine transportation while still presenting a product to the customer that ties back to a South African brand and creates a connection with the country of origin. Practically, wine is exported in a bulk format to transport more wine per fixed container space, then bottled and labelled to retain its identity at a facility in the destination country. The bottled wine is then distributed and sold in the destination market.

This core, sustainable industry can then be expanded to capitalise on opportunities to provide bulk wine into export markets as the demand arises. As a producer of new-world wines in a developing country, it is important that the South African wine industry remains flexible and adaptable to differentiate from its competitors.

6.5.4 Government relationships and partnerships

6.5.4.1 Government-related factors:

Under the determinant "related and supporting industries," the government-related factors "government financial support" (RS2) and "government interactions and consultations" (RS3) were rated significantly constraining in the WES. All but 3 of the 17 factors in the "government factors" determinant were rated as constraining. This highly constraining association with government-related factors presents an opportunity to shift this trend by seeking to re-establish channels of communication between the industry and key government stakeholders. Collaborative workshops, roundtable discussions, and regular forums could provide opportunities for ongoing communication. By establishing open communication, common goals can be identified that support government objectives and the wine industry's competitive performance (Delphi 2 Focus Group, 2018).

6.5.4.2 Collaboration for transformation

The Wine Industry Transformation Charter (SAWIC, 2007) presented a model for accelerating transformation in the wine industry while maintaining competitive performance. The charter was never implemented at the time but it remained relevant in its scope and focus areas. The charter supported the government priority for transformation and highlighted the wine industry's commitment to address this national need in a relevant and realistic approach (SAWIC, 2007). The charter also supported the ongoing competitive performance of the industry while overseeing a shift in the distribution of wealth, skills, and ownership (SAWIC, 2007). By approaching transformation in a systematic and collaborative manner and giving all stakeholders a voice, the constraining government factors of "land reform policy in general" (GP2), "BEE (transformation) policy" (GP6), and "land expropriation without compensation proposals" (GP17) can be used to drive transformation and, ultimately, become enhancing factors of competitive performance. The National Development Plan (National Planning Commission, 2011) also provides a viable model for land transformation and redistribution supported through private/public interaction and funding. The wine industry lends itself to interesting land redistribution models within this proposal.

6.5.5 Leveraging favourable exchange rate periods

The chance factor of the "current exchange rate" (CF1) was rated as enhancing, whereas "exchange rate fluctuations" (CF2) were rated as constraining. This inconsistency in exchange rate is challenging because product, technology, and equipment are usually imported on demand, rather than opportunistically in response to a favourable shift in the exchange rate. The exchange rate is, by definition, a chance factor that the industry has very little influence over. However, a financial buffer could be created through an industry-specific short-term finance solution. This buffer would give the industry access to capital, empowering it to procure opportunistically when the exchange rate is favourable rather than having the import timing being dependant on the financial cycle of each industry player.

6.6 Recommendations for future research

Throughout the course of this research assignment, aspects that could not be included in the scope of this research were identified as important considerations for future research linked to the competitiveness of the

South African wine industry. These provide scope for more research to strengthen the stepwise approach for analysing competitive performance in the agribusiness sector.

6.6.1 Wine Executive Survey

While it is important that the general distribution of questions across the Porter's diamond determinants remains similar to those used in this study, future studies should re-assess the validity of the questionnaire and select questions that are relevant to the industry at that time. The inclusion of health-related factors within the "demand factors" determinant was exploratory in this study, but these factors were not found to play a significant role in enhancing the wine industry.

Due to time constraints, there was limited time to follow up with questionnaire recipients to encourage responses from a wider group of stakeholders. The industry receives a lot of surveys, and the length of this particular questionnaire was a disadvantage for attracting participation. Instead of sending out the questionnaire via email to a wide recipient base, it is recommended that – together with an industry partner – specific recipients across the value chain are targeted and engaged on a personal level to encourage participation with a high level of interaction and feedback. Wine traders, marketers, and wholesalers should particularly be targeted.

6.6.2 Proposed addition of a socio-economic/political and transformation determinant

Before the proposed socio-economic determinant (section 6.4) can be used, the factors proposed for this determinant would need to be re-evaluated for relevance. An authentic set of factors that fit the determinant's core definition would need to be compiled.

A socio-economic determinant would relate to and could raise the profile of ethical industry accreditations such as WIETA (WIETA, 2018). It would draw attention to the critical need to address the socio-economic factors that are constraining the competitive landscape of business in South Africa and, ultimately, preventing South Africa from progressing out of its developing status. Future research into this proposed expansion to Porter's diamond is needed to verify the need for a socio-economic determinant in developing countries such as South Africa. Future research should map each factor to national or industry-specific socio-economic projects or programmes to track factor ratings within this determinant against the interventions aimed at addressing these issues.

6.6.3 Application of strategic proposals to firm-level business models, dealing with the diverse typology of the wine industry business

As this study explored the competitive performance of the South African wine industry at the industry-level, the strategic proposals and recommendations made in this chapter are based on industry-level findings. However, the dissemination and application of these findings down to the individual business level have not been addressed in this study. Future studies should consider incorporating these findings and recommendations into business strategies and models across the wine industry to assess the applicability and effectiveness of these findings in driving competitive performance.

6.6.4 Further consideration of the impact that health plays on consumer buying patterns

Although this study did not find health trends to be a leading driver of competitive performance, the incorporation of health as a demand factor should not be dismissed as irrelevant in future research (VinIntell, 2018). The rate of emerging food and beverage trends and their influence on consumer buying patterns means that demand factors are constantly evolving and should therefore be reassessed for their validity in future research.

6.6.5 Determining a scientific system to determine the weight of the different factors and determinants for different points in the value chain

Although the second Delphi round was important for determining the relevance of factors across the value chain, this process can also lose factors that are highly relevant at certain points in the value chain. It is important to address relevant factors with a high consensus, but it is also important to highlight factors that are highly relevant to different points or clusters in the value chain. These factors can serve as bottlenecks that, if targeted and addressed effectively, can result in benefits felt industry-wide.

6.7 Concluding remarks

The major finding from this research assignment was that, although the South African wine industry is influenced by trade-based measures such as the exchange rate, competitive performance is not directly related to, nor solely dependent on, the exchange rate. Many other factors also determine the competitive performance of the industry.

South Africa's competitive performance on a global scale ranks second to Chile, indicating that the industry is competitive with its global competitors. However, although the South African wine industry remains competitive on a global level, its ratings (at RTA values) have followed a declining trend since 2009, which is cause for concern if it continues.

While the empirical results of this study provided important insight into the competitive trends in the South African wine industry and product categories within the industry, these results in isolation are limited in their application. Qualitative data were obtained from the WES that provides insights into constraining and enhancing factors and their relevance to the industry at a role player's view point in time. The combined data collected through Steps 2-4 of the analytical framework provided the basis from which the strategic recommendations in this chapter have been made. The conclusions, recommendation, and strategic proposals identified in this study can be applied in further research and used at the industry level to drive an upwards trend in the competitive performance of the South African wine industry.

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Appendix A Wine Executive Survey template

RESPONDENT INFORMATION	
Name of Respondent:	
Name of the business:	
Contact number:	
E-mail address:	
Geographical Area: (District/Municipality)	

Position in the value chain: **Mark with "x" where applicable** *** More than one position if possible**	**Wine Cellar**	**Producer**	**Wholesaler**	**Other**

If Other (e.g. an Input or Service Provider), indicate with an "x" applicable **% of resources (land, human, capital) spent on Wine Grape operations**	<10%	11%-25%	26%-50%	51%-75%	>75%

If a Producer, indicate with an "x", the applicable area (ha) under Wine Grape Production	<25ha	25ha - 40ha	40ha - 100ha	100ha-150ha	>150

					ha

If a Wine Cellar, indicate with an "x", the applicable volume of Wine Grape (ton) handled by your business	<2500t	2500t - 5000t	5000t - 10 000t	>10 000t

If Other (e.g. a Distributor, Exporter or Marketer), indicate with an "x", the applicable volume of all Wine Exported (litre of wine - bulk and/or packaged)	<5000	5000 - 500 000	500 000 - 2000 000	>2000 000

Please mark only one block: 1 = Negative; 3 = Neutral; 5 = Positive
Any additional comments would be welcomed in the comment space provided

[A] PRODUCTION FACTOR CONDITIONS

1) Skilled labour is:

Difficult to obtain	1	2	3	4	5	Easily accessible

Comment: _____

2) Competency of skilled labour is:

Not very high	1	2	3	4	5	Very high

Comment: _____

3) Cost of hiring skilled labour is:

Too costly	1	2	3	4	5	Very affordable

Comment: _____

4) Obtaining unskilled/ Entry-level labour is:

Difficult	1	2	3	4	5	Easy

Comment: _____

5) The Quality of Unskilled/Entry-level labour is:

Not very high	1	2	3	4	5	Very high quality

Comment: _____

6) Cost of hiring unskilled/Entry-level labour is:

Too costly	1	2	3	4	5	Very affordable

Comment: _____

7) Extent of using labour saving equipment

Currently used	1	2	3	4	5	Will be used in the future

8) How would you describe the general infrastructure used by your project:

Poorly developed and insufficient	1	2	3	4	5	Well developed and sufficient

Comment: _____

9) Is the cost of infrastructure in your industry:

Extremely high	1	2	3	4	5	Very affordable

Comment: _____

10) Is it easy/difficult to obtain infrastructure in your industry

Extremely difficult	1	2	3	4	5	Very Easy

Comment: _____

11) How important is it to have well-developed infrastructure in your industry

Not important	1	2	3	4	5	Extremely important

Comment: _____

12) Establishment and production costs are:

Too costly	1	2	3	4	5	Very affordable

Comment: _____

13) The productivity level of your industry is:

Very low	1	2	3	4	5	Very high

Comment: _____

14) The effectivity (successful in achieving a desired result) level of your industry is:

Very low	1	2	3	4	5	Very high

Comment: _____

15) The efficiency (input : output relation) level of your industry is:

Very low	1	2	3	4	5	Very high

Comment: _____

16) To produce or sell environmentally friendly products is:

Not a very important strategy for your industry	1	2	3	4	5	One of the most important strategies in your industry

17) Does the packaging material for your product:

Constrain your industry's competitiveness	1	2	3	4	5	Enhance your industry's competitiveness

Comment _____

18) Does the packaging used to export your products:

Constraints your industry's competitiveness	1	2	3	4	5	Enhances your industry's competitiveness

Comment _____

19) The transportation used to export your products:

Constraints your industry's	1	2	3	4	5	Enhances your industry's competitiveness

competitiveness						

Comment _____

20) The quality of technology available to your industry:

	1	2	3	4	5	
Generally lags behind other industries						Is outstanding

Comment: _____

21) Access to quality technology for your industry is:

	1	2	3	4	5	
Difficult to obtain						Easy to obtain

Comment: _____

22) The cost of technology is:

	1	2	3	4	5	
Extremely high						Very affordable

Comment: _____

23) Would technology advancement impact on the competitiveness of your business?

	1	2	3	4	5	
No significant change in competitiveness						Enhance business' competitiveness

Comment: Specify the technology _____

24) How is the attainment of long-term finance for your industry : (e.g. loan)

	1	2	3	4	5	
Extremely difficult and too costly						Easy and very affordable

Comment: _____

25) How is attainment of short-term finance for your industry :

	1	2	3	4	5	
Extremely difficult						Easy and very affordable

and too costly						

Comment: _____

26) How is the quality of research available to your industry:

	1	2	3	4	5	
Generally lags behind other industries						Is outstanding

Comment: _____

27) Access to water in your industry is:

	1	2	3	4	5	
Limited						Readily available

Comment: _____

28) Access to land in your industry is:

	1	2	3	4	5	
Limited						Readily available

Comment: _____

29) Does the changing structure of the wine industry (Concentration, regulations, new markets) have a:

	1	2	3	4	5	
Negative influence in the industry						Positive influence in the industry

Comment _____

30) How does the local climate/weather variation (unpredicted conditions) affects your industry:

	1	2	3	4	5	
Negatively						Positively

Comment: _____

31) In general, how is the cost of doing business in your industry is: (i.e. transaction costs).

	1	2	3	4	5	
Extremely high						Very affordable

Comment: _____

[B] DEMAND/MARKET FACTORS

1) Local (SA) market size is:

Unable to handle large volumes (of your produce)	1	2	3	4	5	Large enough and growing in demand

Comment: _____

2) Local consumers' wine preference is:

Slow to adopt new products and processes	1	2	3	4	5	Actively seeking out new products and processes

Comment: _____

3) Local buyers of your industry's product are:

	1	2	3	4	5	
Not concerned about ethics and production methods						Very concerned about ethics and production methods

Comment: _____

4) The growth in volume of the local market (Capacity to handle increasing volumes) is:

Too slow	1	2	3	4	5	Large enough and shows increasing trends

Comment: _____

5) The growth in value of the local market is:

Too slow with decreasing trends	1	2	3	4	5	Large enough and shows increasing trends

Comment _____

6) Consumer education and availability of information for making marketing decisions is:

Insufficient	1	2	3	4	5	Adequate

Comment: _____

7) Your opinion on the bargaining power of your company's customers.

They have no power.	1	2	3	4	5	They are very powerful.

Comment: _____

8) The international Wine export market is:

Too small	1	2	3	4	5	Large enough

Comment: _____

7) Changes in tastes and preferences of international market:

Constraints competitiveness	1	2	3	4	5	Enhance competitiveness

Comment: _____

8) The diversity (based on volume and variety) of new (more lucrative) international markets are:

Similar	1	2	3	4	5	Varied

Comment: _____

9) The influence of adverse weather conditions on buying patterns of in export markets:

Dependent/has impact	1	2	3	4	5	Sovereign/Independent/no impact

Comment: _____

10) Seasonality and availability of the SA Wine grape impacts the industry's competitiveness:

Negatively	1	2	3	4	5	Positively

Comment: _____

11) The availability and characteristics (profile and product) of the SA Wine varietals on offer, in line with market demand:

Insufficient	1	2	3	4	5	Sufficient

Comment: _____

12) The South African Wine Industry's relationship with mega retailers is (Woolworths, Pick n Pay etc.).

Very Poor	1	2	3	4	5	Very good

Comment: _____

13) The opportunity for expansion in the existing markets (both locally &internationally) is:

Less likely	1	2	3	4	5	Very likely

Comment _____

14) The chance of emerging markets to increase your industry's level of competitiveness:

Less likely	1	2	3	4	5	Very likely

Comment _____

15) Changing composition of food demand (food preference);

Constraints competitiveness	1	2	3	4	5	Enhance competitiveness

Comment _____

16) How will the proposed "Brexit-type" trade negotiations influence the SA wine industry's competitiveness

Big impact	1	2	3	4	5	Less impact

Comment _____

17) The potential impact of the USA "closed trade model" (Trump's America first) in the competitiveness of the SA wine industry:

Will constrain the SA Wine industry's competitiveness	1	2	3	4	5	Will enhance the SA wine industry's competitiveness

Comment _____

18) Being in the market with countries like Argentina, Chile, Spain, etc. affects your industry's level of competitiveness:

Negatively	**1**	**2**	**3**	**4**	**5**	Positively

Comment _____

19) How do the changing trends in popular varieties impact on your industry's competitiveness:

Negatively	**1**	**2**	**3**	**4**	**5**	Positively

Comment: _____

20) The increased influence of 'health' on consumer decisions around wine purchases has impacted the industry:

Negatively	1	2	3	4	5	Positively

Comment: _____

21) In your mind, to what extent is the wine industry constrained by negative associations with overuse or overconsumption of alcohol:

Not relevant	1	2	3	4	5	A major factor

Comment: _____

22) In your mind, is the wine industry sufficiently exploiting positive associations between wine consumption and health?

Under-exploited	1	2	3	4	5	Fully exploited

Comment: _____

23) The importance of wine without added sulphur to the consumer is:

Not relevant	1	2	3	4	5	A major factor

Comment: _____

24) The importance of wine labelled 'organic' to the consumer is:

Not relevant	1	2	3	4	5	A major factor

Comment: _____

25) In your opinion, consumers are willing to pay a certain premium for wines with perceived health advantages such as 'organic' and 'no added sulphur'

Not relevant	1	2	3	4	5	A major factor

Comment: _____

26) The impact of health trends on wine consumption patterns has impacted South African (local) consumption

Negatively	1	2	3	4	5	Positively

Comment: _____

27) The impact of health trends on wine consumption patterns has impacted International (export) consumption

Negatively	1	2	3	4	5	Positively

Comment: _____

28) In your opinion, the impact of the IPW system on competitiveness is

Negative	1	2	3	4	5	Positive

Comment: _____

29) In your opinion, the value the consumer places in the IPW system is

Not significant	1	2	3	4	5	Significant

Comment: _____

[C] RELATED AND SUPPORTING INDUSTRIES

1) Financial service providers generally:

Constrains your industry's competitiveness	1	2	3	4	5	Enhances your industry's competitiveness

Comment: _____

2) Government financial support generally:

	1	2	3	4	5	
Non-existent						The best in their field

Comment: _____

3) Government advice generally:

1	2	3	4	5

Non-existent — The best in their field

Comment: _____

4) Privately funded scientific research institutions are:

1	2	3	4	5

Non-existent — The best in their fields

Comment: _____

5) Government-funded scientific research institutions in assisting your industry are (NRF, ARC etc.):

1	2	3	4	5

Doing a poor job — The best in their fields

Comment: _____

6) Evaluation and testing of new varieties according to industry's best practices:

1	2	3	4	5

Improper — Properly evaluated and tested

Comment: _____

7) Wine industry`s expenditure on Research & Development is:

1	2	3	4	5

Insufficient — Sufficient

Comment: _____

8) How innovative is the Wine industry?

Less innovative	1	2	3	4	5	Highly innovative

9) Collaboration with scientific research institutions is:

Non-existent	1	2	3	4	5	Intensive and continuing

Comment: _____

10) Electricity supply (including renewable energy and fossil fuels):

Constraints competitiveness	1	2	3	4	5	Enhances competitiveness

Comment: _____

11) Telecommunication services:

Constraints competitiveness	1	2	3	4	5	Enhance competitiveness

Comment: _____

12) Specialised technology services are: (E.g. computerised irrigation systems/services, consultants etc.)

Not available	1	2	3	4	5	Available from outstanding local institutions/firms

Comment: _____

13) The cost of specialised or hired technology services is:

Too expensive	1	2	3	4	5	Very affordable

Comment: _____

14) Availability of local suppliers of primary inputs (Fertilisers, pesticides etc.):

Largely non-existing and limited supply	1	2	3	4	5	Numerous and provides all necessary input components
					x	

Comment: _____

15) The quality of local suppliers for your industry's primary inputs is:

Inefficient and have little technological capability	1	2	3	4	5	Internationally competitive, innovative and reliable

Comment: _____

16) The sustainability of local suppliers of your industry's primary inputs:

Problematic	1	2	3	4	5	No problem at all

Comment: _____

17) Availability of storage and cellar/product handling facilities:

Not available	1	2	3	4	5	Readily available

Comment: _____

18) The cost of storage and cellar/product handling facilities:

Extremely high	1	2	3	4	5	Affordable

Comment: _____

19) Availability and reliability of transport:

Unavailable and unreliable	1	2	3	4	5	Readily available and trustworthy

Comment: _____

20) Effective management of cold-chain:

Ineffective and inefficient	1	2	3	4	5	Effective and efficient

Comment: _____

21) Necessary infrastructure requirements for export purposes: (E.g. facilities at local ports)

Insufficient and hinders competitiveness	1	2	3	4	5	Sufficient and improves competitiveness

Comment: _____

[D] FIRM STRATEGY, STRUCTURE AND RIVALRY

1) The management of information flow from primary suppliers to your industry is:

Inadequate	1	2	3	4	5	Excellent

Comment: _____

2) The flow and use of information from customers to your industry to inform strategy is:

Inadequate	1	2	3	4	5	Excellent

Comment: _____

3) The management of market intelligence for the Wine industry is:

Inadequate	1	2	3	4	5	Excellent

Comment: _____

4) Competition in the local (SA) market is:

Very limited	1	2	3	4	5	Very intense

Comment: _____

5) Threat of new entrants locally (new Wine farmers/producers) is:

Less likely	1	2	3	4	5	Highly likely

Comment: _____

6) Competition in international market is:

Very limited	1	2	3	4	5	Very intense

Comment: _____

7) Threats of new entrants internationally is:

Less likely	1	2	3	4	5	Very likely

Comment _____

8) To what extent do economies of scale (i.e. extra savings in costs gained by increased production) influence your competitiveness?

Minor influence	1	2	3	4	5	Major influence

Comment: _____

9) Your willingness to reinvest in Wine operations:

Reluctant	1	2	3	4	5	Keen

Comment: _____

10) Your willingness to take risk:

Risk averse	1	2	3	4	5	Risk taker

Comment _____

11) Does your current resource base (in terms of land, human and capital) support the future of Wine operations?

Insufficient	1	2	3	4	5	Sufficient

Comment: _____

12) Competition for resources (land, information, human and capital) used by the industry vs other agricultural related activities:

Not competitive at all	1	2	3	4	5	Very competitive

Comment: _____

[E] GOVERNMENT SUPPORT AND POLICIES

1) Does South Africa's labour policy (e.g. minimum wage):

Constraints your industry's competitiveness	1	2	3	4	5	Enhances the SA wine industry's competitiveness

Comment: _____

2) Does South Africa's land reform policy:

Constraints your industry's competitiveness	1	2	3	4	5	Enhances the SA wine industry's competitiveness

Comment: _____

3) Does South Africa's trade policy:

Constrains your industry's competitiveness	1	2	3	4	5	Enhances your industry's competitiveness

Comment: _____

4) South Africa's macro-economic policy:

Constraints your industry's competitiveness	1	2	3	4	5	Enhances your industry's competitiveness

Comment: _____

5) South Africa's Competitions Act:

Constraints your industry's competitiveness	1	2	3	4	5	Enhances your industry's competitiveness

Comment: _____

6) South Africa's BEE (transformation) policy:

Constraints your industry's competitiveness	1	2	3	4	5	Is an opportunity to increase your industry's competitiveness

Comment: _____

7) The credibility and reliability of the current political system is (i.e. constitutional action, elections, accountabilities, etc.):

Very low	1	2	3	4	5	Very high

Comment: _____

8) The credibility and reliability of politicians as it applies to Wine industry is:

Very low	1	2	3	4	5	Very high

Comment: _____

9) Regulatory standards (e.g. Products standards, energy, safety, and environment) in your opinion are:

Lax or non-existent	1	2	3	4	5	Among the world's most stringent

Comment: _____

10) Complying with regulatory & safety standards:

Obstructs competitiveness	1	2	3	4	5	Increases competitiveness by promoting improvement

Comment: _____

11) Administrative regulations are:

Burdensome	1	2	3	4	5	Routine with minor effort

Comment: _____

12) The taxation system:

Impedes business investment	1	2	3	4	5	Promotes business investment

Comment: _____

13) How do you think the increased VAT will affect your business:

Impedes business investment	1	2	3	4	5	Promotes business investment

Comment: _____

14) Have legal or political factors over the past five years undermined your industry's strategic positioning?

Negatively	1	2	3	4	5	Positively

Comment: _____

15) How does corruption and opportunism affect your industry's competitiveness:

Impedes business investment	1	2	3	4	5	Promotes business investment

Comment:

16) The water regulations Act;

Hinges level of competitiveness	1	2	3	4	5	Does not have an impact

Comment

17) The call for land expropriation without compensation will:

Constraint your industry's competitiveness	1	2	3	4	5	Enhance your industry's competitiveness

Comment

[F] Chance factors (factors over which your firm has no control and are external in nature)

1) The current exchange rate:

Constraints your industry's competitiveness	1	2	3	4	5	Enhances your industry's competitiveness

Comment: Explain

2) The exchange rate fluctuations:

Constraints your industry's competitiveness	1	2	3	4	5	Enhances your industry's competitiveness

Comment:

3) The ability of the Wine industry to fully utilise the effect of unfavourable weather conditions on competitors:

Incapable	1	2	3	4	5	Extremely capable

Comment:

4) Social unrest (such as politically motivated land grabs, labour strikes, xenophobia, farm violence etc.)

Imposes significant threat to your company	1	2	3	4	5	Does not impose significant threat to your company

Comment: _____

5) The South African political system in general:

Hinders competitiveness	1	2	3	4	5	Promotes competitiveness

Comment: _____

6) Crime in general

Imposes significant threat to your industry	1	2	3	4	5	Does not impose significant threat to your industry

Comment: _____

7) Health -HIV/AIDS, TB, etc.:

Imposes significant costs to your industry	1	2	3	4	5	Does not impose significant costs to your industry

Comment: _____

8) Economic development and growth in South Africa:

Constraints your industry's competitiveness	1	2	3	4	5	Is an opportunity to increase your industry's competitiveness

Comment: _____

9) To what extent do international/world events impact on your industry's competitiveness? (E.g. warfare/conflicts/boycotts, exchange rate fluctuations, etc.)

Big impact	1	2	3	4	5	No impact

Comment: _____

10) A global recession will have a:

Big negative impact on your industry	1	2	3	4	5	No impact on your industry

Comment _____

[G] Future projections/expectations- give your opinion on developments in the business structure of your industry over the next 10 years.

Do you assume that over the next 10 years:

1) There will be an increase in the number of existing companies?

Yes	No

2) There will be an increase in the size of companies?

Yes	No

3) There will be an increase in value chains?

Yes	No

4) There will be an increase in supply of long term contracts (along the value chain)?

Yes	No

5) There will be more fragmented/diverse markets?

Yes	No

6) There will be an increase in global companies?

Yes	No

7) There will be an increase in electronic markets/trade?

Yes	No

8) There will be less trust/more opportunism in business relationships

Yes	No

[H] GENERAL QUESTIONS - In your opinion:

1) What are the main factors that influence your decision making?

a

b

c

d

2). Do you think the SA Wine Industry is strong enough to cope with competition? If not, what could be done?

Yes	No

Comment

3). Do you think government is investing enough in the Wine Industry in order to increase its competitiveness status?

Yes	No

4). Who are the most threatening competitors (both international and local)

International

Local

[I] Dominant factors currently shaping the Wine Grape Industry: Please rank according to your view

1) Global economic conditions

No impact/minimum factor	1	2	3	4	5	Dominant factor

2) Increasing urbanization

Less significant factor	1	2	3	4	5	Significant factor

3) Changing demand

No impact	1	2	3	4	5	Big impact

4) Emerging markets

No impact/minimum factor	1	2	3	4	5	Dominant factor

5) Uncertainty and volatility

	1	2	3	4	5	
No impact						Big impact

6) Political factors

	1	2	3	4	5	
Less significant						Highly significant

7) Changing technology

	1	2	3	4	5	
Less significant						Highly significant

8) Changing agri-business structure

	1	2	3	4	5	
No impact						Big impact

9) Trade policy

	1	2	3	4	5	
Less dominant						Dominant factor

10) Market speculation

	1	2	3	4	5	
Less significant						Highly significant

Thank you so much for taking time to complete this questionnaire- it is highly appreciated!

Appendix B Average factor ratings from most constraining to most enhancing

Factor	Impact rating score
Government consultation and interactions	1,17
Government financial support	1,24
Crime perceptions	1,38
Land expropriation without compensation	1,45
Credibility and reliability of politicians	1,55
Impact of a global recession	1,55
Land Reform policy	1,59
Credibility and reliability of current political system	1,62
The South African political system	1,69
Establishment and production costs	1,83
Quality of Unskilled labour	1,86
BEE (transformation) policy	1,86
Cost of infrastructure	1,90
Corruption and opportunism	1,97
Social unrest	2,03
Impact of world events	2,03
Macro-economic policy	2,07
Legal or political factor impact on strategic positioning	2,07
The taxation system	2,10
Exchange rate fluctuations	2,11
Cost of technology	2,14
Impact of local climate	2,14
South Africa's labour policy	2,14
Trade policy	2,14
Water regulations Act	2,18
Local climate/weather variation	2,21
Competing against other new world wines	2,31
Increased VAT	2,31
Competitions Act	2,32
Impact of "closed trade model"	2,34
South African market growth (value)	2,41
Consumer education and information availability	2,41
Availability of local suppliers	2,45
Government-funded scientific research institutions	2,48
Economic development and growth	2,48
Obtaining skilled labour	2,52
Access to land	2,52
Weather conditions impacting export buying patterns	2,54
Impact of Brexit-type trade negotiations	2,55
Electricity supply	2,55
Health -communicable diseases	2,55
Access to water	2,59
Value of IPW for consumers	2,59

Attaining long-term finance	2,62
Availability and reliability of transport	2,62
Cost of skilled labour	2,64
South African market size	2,66
South African market growth (volume)	2,66
Specialised technology services	2,66
Skilled labour competency	2,69
Industry relationship with major retailers	2,72
Export transportation	2,76
South African wine preference	2,76
Financial service providers	2,76
Attaining short-term finance	2,79
Demand for Organic wine	2,79
Threat of new local market entrants	2,79
Administrative regulations	2,82
Cost of hiring unskilled labour	2,83
Reinvestment in Wine operations	2,83
Demand for sulphur free wine	2,86
Efficiency level	2,90
Leveraging link between wine and health	2,90
Price premium for healthier wines	2,90
Productivity level	2,97
Changing structure of the wine industry	2,97
Health impacting consumer choices	2,97
Success level	3,00
Impact of health trends on wine consumption patterns	3,00
Impact of changing demand on varietals	3,03
Health trends vs international wine consumption	3,03
Customer to industry information flow	3,03
Wine grape seasonality and availability	3,07
Negative associations with alcohol overconsumption	3,10
Current resources for future wine growth	3,14
Leveraging unfavourable weather conditions	3,14
Packaging material	3,17
Expenditure on R&D	3,17
Food preference patterns	3,18
Labour saving equipment	3,21
Current Exchange rate	3,21
Export packaging	3,24
Collaboration with scientific research institutions	3,24
Regulatory & safety standards compliance	3,24
South African wine buyers	3,28
Primary supplier to industry information flow	3,29
Private scientific research institutions	3,34
Evaluation and testing of new varieties	3,34

Obtaining infrastructure	3,38
Changes in tastes and preferences of export market	3,38
SA Wine varietal qualities and availability	3,38
Impact of emerging markets	3,38
Infrastructure requirements for export	3,38
Market intelligence management	3,38
Willingness to take risk	3,41
Value of IPW for producers	3,48
Opportunity for expanding existing market	3,52
Wine export market	3,55
Innovativeness	3,59
Availability of storage/cellar/handling facilities	3,59
Competition for resources (wine vs other agric)	3,59
Diversity of new international markets	3,61
Access to quality technology	3,69
Quality of research	3,69
Technology quality	3,72
Cost of storage/cellar/ handling facilities	3,72
Obtaining unskilled labour	3,76
Regulatory standards	3,76
Sustainability of local suppliers	3,79
General infrastructure condition	3,83
Cold-chain management	3,83
Environmentally friendly products	3,86
Threat of new international market entrants	3,86
Customer bargaining power	3,93
Cost of specialised technology services	4,03
Impact of technology advancement	4,07
Influence of scale	4,17
Competition in international market	4,28
Quality of local suppliers	4,34
Importance of well-developed infrastructure	4,52
The Competitiveness drive of the South African product market	4,59