Geographical indications in the wine industry: does it matter for South Africa?

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Abstract

Purpose – This paper aims to assess the impact of protected geographical indications (GIs) on the trade performance of South Africa's wine industry within the European Union (EU). This is critical in enhancing informed policy decisions towards securing more GIs for wines and other products. The unearthed evidence may provide a basis for more government interventions in support of the initiative while protecting the good reputation in communities where production occurs.

Design/methodology/approach – This paper uses the gravity flow model framework. The Rand value of wine exports was used as a trade performance measure whereas GIs data was extracted from the E-Bacchus database, and three proxies are used to capture the GIs variable.

Findings – GIs foster South Africa's wine exports into the EU. When GIs were proxied as a dummy variable, results suggest that GIs led to about 170% increase in wine exports. However, when the actual number of GIs was used, the estimate also indicates 0.7% rise in exports, whereas using the difference between South Africa's and the EU's number of GIs, results suggest that GIs are associated with 87% increase in wine exports.

Research limitations/implications – This paper did not take into consideration protected designation of origins (PDOs) on the side of the Europe given that South Africa has no registered PDOs. Further research at industry level should be undertaken to ascertain whether some of South Africa's wine meets the specifications required to register as a PDO.

Originality/value – This paper adds empirical evidence to the existing literature on the competitiveness of South Africa's wine industry. The role of GIs in international markets remains a silent feature in the literature yet the industry exhibits an outstanding footprint in GIs. This paper, in part, responds to Biénabe and Marie-Vivien's (2017) recognition for the need for interdisciplinary empirical analyses to better understand the GI concept. To the best of authors' knowledge, this is the first paper to analyse the impact of GIs on the industry's trade performance.

Keywords Economics, Panel data, European Union, Gravity model, Negative binomial regression, South Africa, Wine industry

Paper type Research paper

1. Introduction

The export performance of South Africa's wine industry has improved over the years, with a growth rate in value of 153% between 2005 and 2019, representing an annual growth rate of

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10%. During the same period, South Africa's wine exports destined for the European Union (EU) alone grew by 77% in value. The competitiveness of South Africa's wine industry has generally been assessed and findings suggest that a number of factors influence the industry's good performance. Identified factors (good or bad) include macroeconomic factors, market size, crime and theft, inefficient governance systems, inadequately educated workforce and infrastructure limitations, among others (Esterhuizen and Van Rooyen, 2006; Srivastava *et al.*, 2006; Van Rooyen *et al.*, 2011). The existing literature is, however, largely based on analytical methods such as the Porter's diamond approach and the computable general equilibrium models, which do not quantitatively pin down the impact of the identified factors on the response variable (i.e. quantity of wine, value of wine traded and growth rates in wine trade). Crous and AgabuPhiri (2017), for instance, used qualitative and exploratory research methods to assess the various brand-marketing strategies through which South Africa can increase awareness of the wine brands. Without going in details of their findings, it is worthwhile to note that the scholars posit that South African wine fits to be positioned as a premium brand because of its high quality.

A few studies by Conningarth economists (2015) and Ndanga *et al.* (2010) used quantitative methods. Furthermore, the role of geographical indication (GI) in international markets remains a silent feature in all the studies, yet South Africa's wines globally exhibit an outstanding footprint in this domain. Work by Biénabe and Marie-Vivien (2017) somehow identifies with our study, but their focus was on Basmati and Rooibos, whereas work by Roselli *et al.* (2016) and Curzi and Olper (2011) was undertaken in developed economies. In terms of trade, GI is perceived as a strong policy tool through which commodities may become more profitable and competitive while preserving the unique characteristics of agricultural product(s) (Ponte and Ewert, 2009; Cusmano *et al.*, 2010; Dogan and Gokovali, 2012; Agostino and Trivieri, 2014, 2016). In addition, Rangnekar (2004), Blakeney (2009), Blakeney (2017), Bramley *et al.* (2009), WIPO (2009), Belletti *et al.* (2017) and Chabrol *et al.* (2017) argue that GI is at the forefront of enhancing local sustainable development while protecting indigenous knowledge. Biénabe and Marie-Vivien (2017) recognise the need for interdisciplinary empirical-based analyses to better understand the GI concept, so that governments in the Southern countries may intervene. Therefore, this paper provides the empirical analysis to fill this knowledge gap.

2. Literature review

GI is a generic term used to describe the various legal mechanisms used to protect geographical designators that inform consumers about the geographic origin of a product and the product's quality and characteristics (Department of Trade and Industry, 2016a; Hughes, 2016; Juma *et al.*, 2016). GI labels are generally perceived as measures through which specific products may have access to niche markets of high value, thus GIs can also be interpreted as an internalisation tool. According to Köhr *et al.* (2017), such developments in the international trade are likely to influence how firms allocate resources with interest in producing more export-oriented products than for domestic supply. Cei *et al.* (2018) note that GIs generate positive welfare effects for both consumers and producers whereas Belletti and Marescotti (2011) contend that GIs foster rural development processes, thereby leading to environmental sustainability through the protection of environment, amenities and indigenous cultures. With regard to trade, the direct impact of GIs on the local economic conditions in the areas of origin arises through supply chains. A detailed account of the linkage between GIs, environmental sustainability and trade is described by Belletti *et al.* (2017, 2015), Blankeney (2017), Miglietta *et al.* (2018) and Lamastra *et al.* (2017).

2.1 Legal perspective of geographical indications

In terms of intellectual property, GIs relate to the use of a name derived from a geographical location and it is regarded as an exclusive right of producers who reside in that area (Biénabe and Marie-Vivien, 2017). Therefore, recognition of a GI is a matter of national law. However, given that GIs are used as a tool in international trade, protecting GIs renders it a multi-jurisdictional exercise. At the international level, protection of intellectual property is organised under a number of treaties and South Africa is party to a number of intellectual property (IP) treaties, including the World Intellectual Property Organisation (WIPO) Convention, the Agreement on Trade-Related Aspects of Intellectual Property Rights and the Patent Cooperation Treaty. While IP treaties provide an important tool for enforcement across borders, they do not in and of themselves ensure enforceable protection of GIs. Therefore, fraudulent use of such GI trademarks is only prosecutable under the national law(s). Thus, the need for enhanced international standards prescribing how third parties may use protected GIs (Gangjee, 2011). This renders recognition of protected GIs in a country or region where the infringement is bound to happen. Thereby, implying that legislation is put in place to impose a penalty for those who partake fraudulent products. It is in this regard, where the provisions of the Economic Partnership Agreement are of significance to the use of South Africa's GIs in Europe and vice versa.

Although at present, South Africa does not have specific legislation regarding the use of GIs, the protection of GIs is achieved through four main legislative measures, namely, the Trade Marks Act 194 of 1993, Liquor Products Act 60 of 1989, the Merchandise Marks Act 17 of 1941, and to a lesser extent, legislation for the Protection of traditional knowledge. South Africa's Trade Marks Act allows for the registration of both "Certification Marks" and "Collective Marks". Certification marks are used to indicate that the goods are of a certain quality or geographic origin whereas collective marks are used to indicate that the producer belongs to the certifying organisation. The wine industry applied the Liquor Products Act 60 of 1989 to protect wines based on historical geographic origin. The "wine of origin" concept is controlled and enforced by the Wines and Spirits Board, which gives certification to producers according to the region from which their product originates. The Traditional Knowledge legislation makes reference that GIs can be registered as certification marks or collective marks under the Trade Marks Act. On the other hand, the Merchandise Marks Act makes provision for marking of merchandise and of coverings in or with which merchandise is sold and the use of certain words and emblems in connection with business. Section 15 of the Merchandise Marks Act empowers the Minister of Trade and Industry to prohibit, either absolutely or conditionally, the use of any mark or word in connection with any trade or business whenever there is a need. Therefore, the Merchandise Marks Act may be conjured to prohibit the use of GIs in South Africa.

2.2 Profiling protected geographical indications

Globally, there are 2,885 names of the GIs for wines, broadly categorised as: protected designation of origin (PDO), protected GI (PGI) and GI. The distinction between the categories lies in how much of the raw material is sourced from that specific area or how much of the production process is done in that particular region. The European Commission [1] clarifies that for a product to qualify as a PDO, each and every activity relating to the production, processing and preparation must be occurring in that specific region whereas for PGI, the specifications are relaxed in a sense that it allows for at least one of the stages of production, processing or preparation to take place in that particular region (Cei *et al.*, 2018). For the case of GIs, which applies to spirits and aromatised wines, specifications indicate that at least one of the stages of distillation or preparation must occur in the specified region. Therefore, it is not mandatory for the raw materials to be sourced from that same region.

According to the E-Bacchus[2], a database for the names of protected GIs and protected traditional terms, South Africa accounts for 35% of third countries involved in wine trade and slightly more than 5% of all countries worldwide. In this context, "third countries" refer to countries that are not members of the EU but have GIs protected in the EU under bilateral agreements. The uniqueness of South Africa's wine-producing areas and farms became legally protected after the establishment of a scheme entitled, *Wine of Origin* in 1972, through which wines made from vintage or specific cultivars was also protected. As presented in Figure 1, the EU has 439 protected GI names, with Italy assuming the largest number (118).

For the third countries, there are 437 protected GI names in the wine industry, with South Africa accounting for 153 names. Table 1 shows the distribution of wine GI names by country.

In terms of the volume of wines traded, Europe is South Africa's major export market but it also exhibits a high level of protection for GI names of wines and spirits unlike other agricultural goods. These wine GI names are protected by the Alcohol and Tobacco Tax and Trade Bureau (Kuźnar, 2020).

2.3 Phases of growth in South Africa's wine industry

We undertake econometric analysis using panel data for 19 EU importers while keeping track of the various phases of growth identified by Van Rooyen *et al.* (2011) that South Africa's wine industry has gone through since 1996. First, the competitive phase (1996–

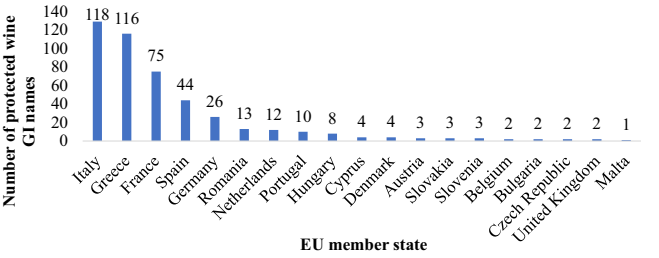

Figure 1.
Distribution of protected GI names among EU member states

Source: Authors' calculation basingon E-Bacchus database

Country	No. of wines with GI name	% share of all GI names
Albania	36	8.24
Australia	78	17.85
Bosnia and Herzegovina	7	1.60
Canada	7	1.60
Chile	61	13.96
Georgia	18	4.12
Montenegro	9	2.06
Republic of Moldova	2	0.46
Republic of Serbia	29	6.64
South Africa	153	35.01
Switzerland	37	8.47
Total	437	

Table 1.
Distribution of wine GI names by country

Source: Authors' calculation based on E-Bacchus database

2000). During this period, Van Rooyen *et al.* (2011) notes that South Africa's wine industry was tasked to produce internationally accepted "new world" wines, characterised by less tannins, non-grassy and fruity, among other attributes. During the same period, South Africa faced stiff competition from Australia, which aggressively conquered the UK and South Africa's major wine export market. In response to the competition, the industry embarked on using advanced innovations, hence giving rise to increased volume of wine exported. Between 2000 and 2005, South Africa become a key player in the wine industry globally, a phase hereafter referred to as the phase of excellence.

During this phase, the industry embraced the Vision 2020 and set up the South African Wine and Brandy Company to coordinate industry activities. In addition, government partnership arrangements anchored on the Wine Industry Strategy Plan were also initiated, among other developments. Many concepts aligned to the uniqueness of South Africa's wines came to light and over 100 protected GI names of wines were registered. This phase witnessed the integration of modern lifestyles amongst the various wine stakeholders (Ndanga *et al.*, 2010). For about 10 years, post-2005, a period referred to as the constrained competitive phase was characterised by a relative decline in the industry's competitiveness as compared to the performance of the industry in other competing countries. The industry's declining competitiveness was attributed to global economic slowdown, which occurred at the time of high exchange rate volatility coupled with the government's inability to render support services (e.g. certification and poorly maintained export facilities) to meet the needs of the wine industry. Other growth phases that occurred before 1996 are discussed by Van Rooyen *et al.* (2011) and South African Wine Industry Council (SAWIC, 2007).

Of recent, South Africa's wine industry entered into a new phase of repositioning, consolidation and reinvestment (Vinpro, 2019). This phase is characterised by tough climatic conditions and changes in production and demand, coupled with financial pressures. This phase is compelling the industry to become smaller while producers and wineries are required to rethink the way they do business. For instance, because of the financial pressures faced by wine-grape producers in the past five years, the area under wine grapes reduced by almost 6% given that producers planted less as compared to the ageing vineyards that were uprooted. To consolidate and reinvest, the industry's transformation unit is providing support to black-owned enterprises, black farmers and entrepreneurs participating in the wine value chain.

South Africa is a net exporter of wine, with an average share of 68% of wine exports (by value) destined for the 27 EU member states since 2001. The UK accounts for the largest share (20.1%) of South Africa's wine exports in the EU, followed by Germany, the Netherlands and Sweden in that order, among other EU member states. In relation to EU member states with protected wine GI names (Figure 1), trade data suggests that countries with more GI names import less of South Africa's wine. For instance, Italy (with 118 GI names) is a net exporter to South Africa. However, it is worthwhile to note that some of the wine imported into the EU (mostly in bulk through Rotterdam and Hamburg) is re-exported into non-producing countries. Generally, EU states with protected GI names import less wine from South Africa as compared to EU member states without protected GIs. However, affirmation of this school of thought requires empirical evidence.

3. Methodology

A gravity flow model analytical framework developed by Tinbergen (1962) and Poyhonen (1963) was used, based on panel data of South Africa's wine exports into the EU, spanning a 20 years' period (1996–2015). Only 19 EU member states (Austria, Belgium, Bulgaria,

Cyprus, Czech Republic, Denmark, France, Germany, Greece, Hungary, Italy, Malta, the Netherlands, Portugal, Romania, Slovakia, Slovenia, Spain and UK) were considered in the analysis, given that they had at least one protected GI name. When using high-disaggregated trade data, as in this case, estimation of the log-linear form of the gravity equation becomes problematic, because such data tend to have a high proportion of zero-trade flows. Notably, the logarithm of zero is not defined and the zero-trade flows are not randomly distributed (Salvatici, 2013), thereby rendering the basic gravity model not being suitable in this context. Furthermore, Figure 2 and Table 3 reveal that the series for wine exports were over-dispersed and not normally distributed. These issues present challenges (biased estimates) that cannot be addressed by the log-linear form of the gravity equation.

Without dropping observations for country-pairs with zero-trade flows, a negative binomial regression (NBR) model was used to control two estimation problems, that is, zero-trade flows and over-dispersion exhibited by the dependent variable (wine exports by value).The NBR is one of the modified Poisson estimators not susceptible to heteroskedasticity (Lubinga, 2014). The generic specified model was expressed as follows:

$$EXP_{kjt} = gi_{k/jt} + lnX_{1kt} + lnX_{1jt} + Z_{k/jt} + \varepsilon_{ijt}$$

where subscripts k, j and t denote South Africa (exporter), importing EU member state ($j = 1, \ldots, 19$) and the year, respectively. *ln* represents the natural log whereas *gi* represents the various scenarios used to capture the effect of GIs on wine exports as detailed in Table 2. Z denotes a vector of other variables described as follows. The natural log of the difference in the number of protected GI names between South Africa and EU states ($\ln gi_{kj}$) was computed as follows:

$$\ln gi_{kj} = \ln\left(X_{2k} - X_{2j}\right)$$

X_{2k} and X_{2j} represent the number of protected wine GI names by South Africa and each of the EU states, respectively. Multilateral trade resistance term (X_{13kt}) is a proxy for trade barriers that South Africa encounters while trading with the EU. Computation of the proxy follows the framework proposed by Baier and Bergstrand (2009) and extended by Carrère *et al.* (2009).

$$X_{13kt} = \sum_{k} (X_{1kt}/X_{wt}) lnD_{kj}$$

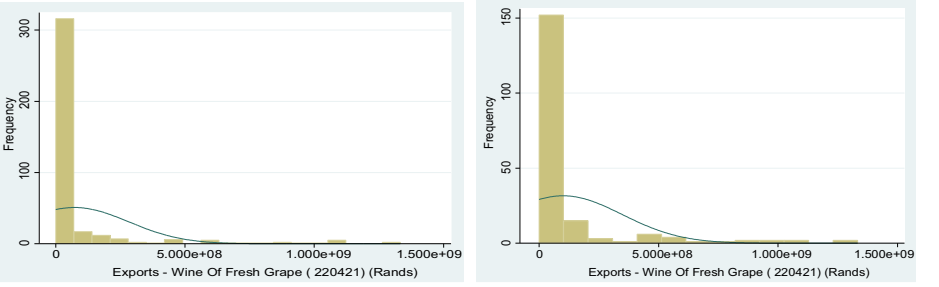

Figure 2.
Kernel's density normality function for wine exports (R)

Source: Authors' calculation

Variable	Factor	Proxy used	Data source
EXP	Export performance	Value of South Africa's wine export (Rand)	Department of Agriculture, Forestry and Fisheries (DAFF) (2017)
$X_{1k}$and X_{1j}	Market size for South Africa and the EU states	Real per capita GDP (Constant US$ 2010)	World Bank's Development Indicators (WBDI) (2017)
Gi (X_{2k}, X_{2j} and $lngi_{kj}$)	Geographical indicators for South Africa and the EU, respectively	Three proxies were used *i*) A dummy variable (= 1 if country had a GI name, = 0 otherwise); *ii*) the actual number of GI names; and *iii*) the natural log of the difference in the number of GI names between South Africa and EU states ($lngi_{kj}$)	E-Bacchus database
X_{3k}	Production capacity	Quantity of wine produced by South Africa (litres)	FAOSTAT database (2017)
X_{3j}	Production capacity	Quantity of wine produced by the EU (litres)	FAOSTAT database (2017)
X_{4k}	Crime and theft	Property-related crime: actual reported cases per 100,000 of the population	South African Institute of Race Relations (IRR) (2016)
X_{5k}	Inefficient governance systems	Government effectiveness: estimate (percentage)	World Bank's governance indicators
X_{6k}	Inadequately educated workforce	Share of the non-educated 15% or more of country's population (Percentage)	Barro-Lee's indicator
X_{7k}	Export promotion	Statutory levy expenditure on export promotion (2006–2015) (Rand)	NAMC annual publications
X_{8k}	Investment in Agricultural sector	Percentage of arable land equipped for irrigation (%)	FAOSTAT (2016)
X_{9j}	Protectionism by the EU	Total ad valorem equivalent tariff (percentage)	Market Access database (2017)
X_{10j}	Contiguity	Length of coastline EU state (Kilometres)	
X_{11k}	Trade facilitation	Time to export by South Africa(days)	WBDI (2017)
X_{12k}	South Africa's export capacity	Export capacity index, expressed as a proportion of South Africa's wine exports with respect to the world's wine exports divided by the share of South Africa's wine production with respect to what is produced globally	FAOSTAT database and DAFF (2017)
X_{13kj}	Third country effect on trade	Multilateral trade resistance term	Computed based on WBDI data and distance between trading partners

Notes: WBDI = World Bank Development Indicators; GDP = gross domestic product

Table 2. Variables and data sources

where X_1 and X_w denote real gross domestic product in US dollars of South Africa and the world, respectively. *ln*D is the natural log of the distance in kilometres between economic centres of South Africa and each of the EU member states considered in the analysis.

Prior to the econometric analysis, diagnostic tests were carried out to ascertain the properties of the series. Diagnostic tests undertaken include Pearson's correlation test for multicollinearity, Kernel density function for normality (Figure 2) and descriptive analysis to test for over-dispersion (Table 3 – for over-dispersion).

4. Results and discussion

Results (Table 4) suggest that GIs play a fundamental role in fostering the export performance of the wine industry. This implies that consumers value the information

Table 3. Descriptive analysis of exports – Wine of fresh grape (220,421) (million rand)

Period	Observations	Mean	Std. dev$^{\pm}$	Variance	Minimum	Maximum
1996–2015	380	72.70	209.00	43700000000.00	0.00	1330.00
2005–2015	191	100.00	247.00	61200000000.00	0.00	1330.00

Source: Authors' calculation, $^{\pm}$denotes standard deviation

Table 4. Impact of protected GI names on South Africa's wine exports (Rand value)

Variable	Dummy (1996–2015)	No. of GI names (1996–2005)	Difference in the number of GIs between South Africa and EU (2005 –2015)
$\ln X_{1k}$ (Constant US$ 2010)	3.24(4.37)	−0.57(4.32)	6.79(13.59)
$\ln X_{1j}$ (Constant US$ 2010)	2.23***(0.13)	2.24***(0.13)	2.34***(0.15)
gi (X_{2k}) (Number of GIs)	0.99*(0.56)	0.007*(0.004)	
gi (X_{2j}) (Number of GIs)	−0.66***(0.24)	−0.01***(0.002)	
$\ln gi_{kj}$ (Difference in number of GIs)	–	–	0.87***(0.11)
$\ln X_{3k}$ (Litres)	0.76*(1.93)	0.72*(1.87)	−1.71(6.12)
$\ln X_{3j}$ (Litres)	−6.51e-07***(4.11e-08)	−5.49e-07***(4.09e-08)	−6.00e-07***(3.64e-08)
$\ln X_{4k}$ (Reported cases per 100,000 of the population)	2.76**(1.14)	2.34**(1.13)	1.19(2.16)
$\ln X_{5k}$ (%)	−0.23(1.78)	−0.01(1.65)	−0.02(1.53)
$\ln X_{6k}$ (%)	0.52(0.34)	0.45(0.32)	0.31(1.02)
$\ln X_{7k}$ (Rand)	−2.26e-08(1.72e-08)	−2.44e-08 (1.59e-08)	−0.02(0.30)
$\ln X_{8k}$ (%)	6.56(6.34)	8.59(5.97)	
$\ln X_{9j}$ (%)	−0.03(0.02)	−0.03*(0.02)	
X_{10j} (Kilometres)	−1.52e-05(2.75e-05)	3.39e-05*(2.73e-05)	
$\ln X_{11k}$ (Days)	–	–	−0.50(1.38)
$\ln X_{12k}$	−0.49(0.61)	−0.40(0.58)	0.58(0.73)
X_{13kt}	8.87***(0.60)	7.76***(0.42)	7.58***(0.39)
Constant	−98.8**(40.34)	−65.46**(37.63)	−47.69(54.49)
Number of observations	380	380	191
Wald χ^2	1562.48	1831.47	1783.10
Pseudo R^2	0.030	0.031	0.035
Log likelihood	−5829.98	−5824.95	−3175.80

Notes: Significant values are highlighted by *<0.1; **<0.05 and **<0.001
Source: Authors' calculation

availed on the GI labels. Depending on the proxy used, the impact of GIs on the value of wine exports ranges between 0.7% (*number of GI names used*) to 169% (*difference in number of GI names used*). As the dummy variables ($gi[X_{2k}]$ and $gi[X_{2j}]$) and the proxy-based number of GI names were not transformed into natural logs, the estimated coefficients must not be interpreted as elasticities.

Following the transformation into percentage change in the value of wine exports[3], the statistically significant coefficients (0.99 and 0.007) of the non-logarithmic variable ($gi[X_{2k}]$) for the GI in the second and third columns imply that protecting of wine geographical names leads to 1.69% and 7.02% increase in the value of South Africa's wine exports, respectively. This positive trend was expected given that GIs are seen as marketing tools that differentiate related products based on quality attributes. In addition, protected wine GI names command higher prices, given that some consumers may be interested in buying wine of a specific origin and quality attributes unlike the other standard wines. GI variables in this case are associated with the factors "opportunities in 'environmentally aware' markets of wine" and "quality production services and processes" identified by Van Rooyen *et al.* (2011) as being among the most competitiveness enhancing factors in the industry. Furthermore, study findings concur with those by Malorgio *et al.* (2008), WIPO (2009) and Agostino and Trivieri (2014, 2016). On the contrary, the EU's increasing number of protected wine GI names has a deterrent effect on South Africa's wine exports into the EU. This negative relation was also expected given that if the EU has more protected wine GIs, it implies that their consumers will be in position to appreciate their own products, hence buy more of domestically produced wine than imports from South Africa.

When GIs were proxied as a difference between the number of GI names for South Africa and EU and then transformed into the logarithmic form ($\ln gi_{kj}$), the statistically positive coefficient (0.87) means that South Africa's having more protected wine GI names leads to 87% increase in the value of wine exports to the EU. Therefore, the results generally support the notion that protected GI names in the wine industry are effective tools in enhancing the value of wine exports to the EU. Other factors that have a significantly positive impact on the value of South Africa's wine exports include EU's market size ($\ln X_{1j}$), South Africa's production capacity ($\ln X_{3k}$) and the third country effect on trade ($\ln X_{13k}$). The aforementioned factors were also among the top five competitiveness enhancing factors identified by Esterhuizen and Van Rooyen (2006) and Van Rooyen *et al.* (2011). On the contrary, crime and theft were found to positively enhance the value of wine exports to the EU, yet Esterhuizen and Van Rooyen (2006) and Van Rooyen *et al.* (2011) identify it as a key competitiveness constraining factor to the wine industry. This peculiar finding may be because of the large time span used (1996–2015), given that results based on a shorter time span (2005–2015, *fourth column*) suggest that the factor is insignificant.

5. Conclusion and policy implications

GIs have become of both political and economic significance as marketing tools and drivers through which rural development could be attained. They are perceived as a vehicle through which rural communities can penetrate into domestic and international markets to benefit from their cultural/natural identities while conserving indigenous knowledge. Following the increasing competitiveness of South Africa's wine industry in the international markets coupled with the fact that South Africa commands a large share of protected wine GI names among third countries, this paper analysed the impact of these GI names on South Africa's wine exports. Findings concur with earlier studies that GIs enhance the trade performance of South Africa's wine exports into the EU.

Trade performance enhancement is achieved when consumers get access to correct information and wine of high quality, which is provided through the functions of GIs. GIs therefore instil confidence amongst consumers about the premium nature of South Africa's wines, thereby directly enhancing trade performance. There is a need to have more wines with protected GI names, if there is hope in remaining competitive in the EU market. The development of protected GI names should also be done in other agricultural industries. To add, given that South Africa's wines have a good reputation in the EU, among other international markets, there is a need for the industry players to work towards implementing quality assurance policies to avail consumers with the right information and discourage wine producers who may masquerade or misrepresent by providing wrong information.

6. Limitations and areas for further research

For proper comparison purposes between South Africa and Europe, the paper did not take into consideration PDOs on the side of the EU, given that South Africa has no registered PDOs. Further research at industry level should be undertaken to ascertain whether some of South Africa's wine meets the specifications required to register as a PDO. To add, more empirical analysis should be carried out in the near future, taking into consideration the EU's PDOs. Also, in this paper, the authors did not consider how the wine industry applies intrinsic knowledge to avoid the misuse of the protected GIs, given that there are no formal enforceable institutional frameworks tailored to match with the local context. In addition, the paper did not consider how the impeding provision of the Competition Act 89 of 1998 relates to the GIs. Therefore, the state in collaboration with the industry players should establish an institutionalised framework that represents the national context while taking cognisance of sufficient harmonization of institutional frameworks of other countries. Further research should also consider how intellectual property protection (protected GIs in particular) and Competition Act 89 of 1998 overlap in South Africa and also possibly consider how conflicts (if any) might be resolved. Further research taking into consideration all third countries should be undertaken.

Notes

1. https://ec.europa.eu/info/food-farming-fisheries/food-safety-and-quality/certification/quality-labels/quality-schemes-explained
2. http://ec.europa.eu/agriculture/markets/wine/e-bacchus/index.cfm?event=statistics&language=EN (Accessed on 16 September 2016)
3. The specified formula was used : $\%\ change = \{exp\ (coefficient) - 1\}$.

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