Export Competitiveness of Indian Spirits: The Method of Revealed Comparative Advantage (RCA) with Special Reference to Wine

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Abstract

In this research paper, wine's export competitiveness is analyzed. Indian vineyards are the fastest-growing agricultural sector in the country, with the seventh-highest productivity. India has a comparative advantage in agriculture and expanding agro-based exports can significantly increase agricultural returns and employment. A REVEALED COMPARATIVE ADVANTAGE study framework is used in order to assess the structural transformation in India's share of the global export market in terms of competitiveness and structural repercussions during 2001-to 2021. The REVEALED COMPARATIVE ADVANTAGE Approach is extensively used to empirically evaluate a country's export performance. With the technique used, the process of benchmarking International and Intra-national exports is made much easier. In a multitude of contexts, the key competencies can be used to model industrial export competitiveness. Using the REVEALED COMPARATIVE ADVANTAGE METHOD, this paper attempts to determine a region's export potential.
Keywords: Export, Wine, Export competitiveness, RCA, Competitiveness, Wine Competitiveness

Introduction

Wine has become one of the most flourishing industries in recent years. The alcohol content of this unrefined beverage ranges from 5 to 13%. (Alexandru Mihai Grumezescu and Alina Maria Holban , 2019). Grapes are the most important ingredient in making many types of

wine. Still, many other fruits such as apple, pear and plum are used for making cider, perry, table and protected wines. (Umesh Jagtap, 2014). Probably wine is the oldest form of brewed alcoholic beverage known to humanity, with a genesis dating back to around 6000 BC in Georgia. (Fabrizio Benedetti, 2018). India has been growing as a major wine market since around 2000 BC. Fine flavours, sugar, aldehydes, easters, acids, high alcohols tannins, amino acids, minerals, vitamins, etc. are mixed in a quality wine. (**Mohd. Faisal Khan**, 2013). In India, wine is primarily produced in Maharashtra and Karnataka. (Debjit Ghosh ,2017) According to in-hand data related to sale of wine, India's national wine consumption is 30 million liters per annum. (Ajeet Kumar Gandhi, 2017). In 2019, it was predicted that India's wine manufacture will increase to 17.6 million litres (1.96 million boxes each box containing 12 bottles and having 750 millilitres each) in an area of 6,000 acres. (**John F Odgers**, 2007).In Europe there are deeply-rooted wine markets. In addition, wine markets are also established in the USA, China, and France on account of having high populace on the other hand top buyers from overseas are Germany, the USA, and the United Kingdom, wherein the consumption exceeds the production.(**Kym Anderson**,2001).The value of the wine market in Canada was forecast to reach approximately 10.85 billion Canadian dollars by 2019, an increase in over 2.7 billion Canadian dollars since 2014. (**Johan Bruwer**,2012).The International market of wine has risen over mean rate towards trade marketing of alcohol.(Angela Mariani, 2012).It is expected to touch about 439 billion dollars regarding taxes up to the year 2023. There are many reasons for increase in import market share. Foreign manufacturers invest a lot of money and endeavour to clinch the US market as it is internationally most alluring market.(**Ulrike Rohn**,2004). Wine market of USA is disintegrated to a large extent so it is perilous to it. World's Top Wine Importing Countries are United States of America, United Kingdom, Germany, China, Japan, Hong Kong, Netherlands, Belgium, Russian Federation, Sweden, Denmark, Singapore, Norway, Brazil (Eugenio Pomarici, 2012). US mostly imports wine from France and Italy to the tune of 33.5% and 32.1% respectively. Similarly U.K. imports wind to a large extent from France and Italy too to be tune of 30.6% and 21.5% of the share of U.K (Jan Conway, 2020). Zero import levy on wine is obtained by U.K. from France, Italy and Spain on the other hand tax amounting to 4.9% is imposed two exporting countries out of five.(HASSAN QAQAYA, 2008). Germany majorly imports wine from Italy and France to the tune of 36.7% and 26.7% respectively of its total contribution of imports, while both South Africa and USA makes approximately 23% of the contribution of imports to Germany. (Sabine Lieberz, 2020). Res and gold labels are considered to be profitable. It is expected that a lot of wine labels will include these two colours contrarily brand name wines are incomparably famous in China. It primarily imports wine from France and Australia to the tune of 37.4% and 27.3% of its share. (Angela Mariani,2012).France and Italy are the major wine exporting countries to U.K. accounting for 30.6% and 21.5% of the share of purchase from overseas.. In addition, Australia, Spain and New Zealand accounts for 10% of the wine supply to UK. (Leonida Correia,2019). Other than this, France & Italy are also the leading exporters of wine to Sweden accounting for 28%, 24% of the Sweden's imported wine share respectively. (Emma

Moberg, 2020). Russia imports wine from Italy and France to a large extent to the tune of 29% and 18% (Anton Moiseenko, 2020)

Literature Review

(N. Petrova & A. Stefanova, 2020) Empirically analysed the key parameters influencing production of wine and concluded that the substantial shift from wine production units to supply chain management, where the indicators like terroir, technical efficiencies and quality of the processes with substantial control on the externalities in the environmental conditions and agri-environmental conditions were examined in the study.

(Correia, Gouveia, & Martins, 2019) The model outlined is based on a macroeconomic approach to business cycles using time series, standard deviation and spearson correlation for understanding past changes in the wine trade and assessing the future of the international trade of European wine. Several indicators related to wine export performance for the ten most important wine-producing countries in the EU over the six most relevant phases of the European economic integration process since the EEC's inception. It was also discovered that the growth in wine exports from 1957 to 2016 was far from consistent. It has varied a lot, with times of rapid expansion followed by periods of moderate or negative growth. The majority of nations have a high level of linkage with the European wine cycle, resulting in a large degree of synchronisation between the national and aggregate European wine export cycles. Greece's and Austria's wine export cycles have the lowest correlations/concordances with the European cycle and the most volatility. The rolling correlation and concordance coefficients also suggest that synchronisation with the EU cycle has improved with time. The analysis for exports by volume indicates a significant difference: by volume, all countries have a weaker cyclical relationship with the European wine cycle, with Italy and Spain being the only nations with a strong correlation/concordance with the EU cycle.

(Anderson, 2018) Analysed and concluded the key parameters which affected Australian Wine Competitiveness using timeline from 1890-2016. Factors such as high expense of shipping, limited size of Australia's economy and domestic wine market and inability to reap economies of scale benefits, unstable tariff import and export protection and quotas practices impacted Australia's production and exports of wine.

(Lombardi, Bianco, Freda, Caracciolo, & Cembalo, 2016) The intra-EU economy has the world's most prolific wine producers, led by Italy, France, and Spain. The augmented gravity model analyzed trade competitiveness empirically. Transportation costs, cross-border supply chains, pricing policies, trend effects and export volumes have all been identified as critical determinants of export competitiveness. The market share of French wines has decreased considerably in Germany, whereas Spanish wines have seen a significant increase. Italian sparkling and semi-sparkling wines, as well as red wines, did really well in the competition. White wines from Italy and semi-sparkling wines from Spain fared particularly well in the UK market. France's results were mixed: on the one hand, it improved its position in white wines, red wines, and PDO bulk wines; on the other hand, it weakened its position in white wines, red wines, and PDO bulk wines. France improved its position in white wines, red

wines, and PDO bulk wines; on the other hand, it lost ground in the other three wine categories.

(Koutroupi, Natos, & Karelakis, 2015) Using Gravity Model concluded the rippling effect on the supply dissemination in Europe due to reduction in the prime cost and expansive revenue opportunities. But the vying factor of changing taste and preferences towards U.S., Argentina, Chile and other countries wines has affected the business segment of European wines. However, Quality Economies of scale of Greek wine can increment the gainful chances in the global market.

(Fleming, Mounter, Grant, Griffith, & Villano, 2014) Revealed comparative advantage index using four performance measures concluded the Australian wine industry had faced competition from other 'New World' makers in the 2000-2009. Penetration in the export market, export value proposition, overall wine productivity, and proposition were identified as variables to improve export competitiveness in the study.

(Crescimanno & Galati, 2014) The application of the Vollrath index to Italy's bilateral trade with its main trading allies and measuring Italian competitiveness, has indirectly emphasised the high degree of competitiveness in some markets that do not have a winemaking tradition, where local production is insufficient to meet domestic demand, and where realisation of the analysis identifies wine as an expression of an Italian lifestyle are strategic factors for Italian wine's success. The competitive challenge can be viewed from two perspectives: on the one hand, achieving new consumer markets that account for 33.3% of global consumption, and on the other hand, maintaining longstanding partners through the provision of higher-quality wines. The findings of this study show how Italy have taken advantage of growth possibilities proposed by the recent change in the international wine market, gradually opening itself to foreign countries, not only in traditional consumer markets but also in emerging economies.

Objective

1. To study and analyze the India's overall trade competitiveness over time for wine
2. To analyze the shift in wine exports in terms of comparative advantage over a period of 2000 to 2018.

Research Methodology

$H1_0$: There is no significant change in India's overall trade competitiveness over time.

$H2_0$: There is no significant change in pattern of specialisation in India for wine exports in the world market.

RCA values over the years for various products

Year	2201	2202	2203	2204	2205	2206	2207	2208	2209
	RCA	RCA	RCA	RCA	RCA	RCA	RCA	RCA	RCA
2001	0.009431	0.026784	0.14578	0.002532	0	0.011631	1.610426	0.152538	0.095708
2002	0.015072	0.011551	0.085932	0.006388	0.004593	0.00249	0.491691	0.160377	0.027408
2003	0.051977	0.043591	0.09817	0.004372	0.086144	0.000344	0.254446	0.134171	0.05902
2004	0.027615	0.040769	0.107015	0.002778	0.007603	0.003733	0.125624	0.137016	0.060686
2005	0.046111	0.043093	0.079021	0.005843	0.034299	0.030589	0.490093	0.165366	0.04432
2006	0.024004	0.040612	0.074229	0.00527	0.002256	0.014058	0.505633	0.164332	0.078356
2007	0.022759	0.021465	0.062989	0.008573	0.004547	0.022195	0.384063	0.193067	0.078672
2008	0.011893	0.025691	0.074465	0.010191	0.005299	0.095752	0.128871	0.314459	0.277771
2009	0.006389	0.031734	0.082712	0.01201	0.007474	0.216037	0.143099	0.286414	0.186512
2010	0.007333	0.031641	0.112521	0.005583	0.090208	0.033198	0.454919	0.289046	0.026709
2011	0.005418	0.027432	0.127148	0.009783	0.008919	0.006037	0.636193	0.284832	0.029086
2012	0.01551	0.033605	0.148061	0.008383	0.000254	0.013341	1.040798	0.336889	0.070906
2013	0.004445	0.038082	0.143944	0.012325	0.005319	0.00231	1.27411	0.337004	0.025479
2014	0.005171	0.038262	0.147055	0.012524	0.004912	0.007599	1.136168	0.340437	0.031222
2015	0.006839	0.044429	0.174654	0.008383	0.023249	0.010628	1.081251	0.358967	0.024259
2016	0.005298	0.046605	0.201567	0.014072	0.007652	0.00637	0.810385	0.314099	0.021645
2017	0.00764	0.052622	0.188311	0.014611	0.001323	0.001264	0.720483	0.312656	0.026732
2018	0.007298	0.052875	0.160516	0.01411	0	0.001745	0.617954	0.300968	0.027586
2019	0.005736	0.066373	0.14705	0.01383	0.000631	0.00019	0.24891	0.276271	0.045437
Mean Value	0.01505	0.037748	0.12427	0.00903	0.01551	0.025238	0.639743	0.255732	0.065132

Looking at the data from years 2000 to 2019; it is found that the RCA values for all the products for all the years is less than1 other than Product: 2207 Undenatured ethyl alcohol of an alcoholic strength of >= 80%; ethyl alcohol and other spirits, whose RCA values are more than 1 at various years. This indicates that India is having an export advantage as per RCA only in 2207 and not in others. But further looking at import amounts and calculating the RC values, it is evident as follows:

RC values for various products over the years

| Year	2201	2202	2203	2204	2205	2206	2207	2208	2209
	RC	RC	RC	RC	RC	RC	RC	RC	RC
2001	-1.55281	-0.13673	1.140921	-1.95362	#NUM!	#NUM!	3.798591	0.795074	-2.80722
2002	-0.32375	-0.86301	0.872109	-0.01978	2.464266	-1.38449	0.729033	1.215214	-3.68628
2003	0.145566	-1.31412	1.899219	-0.6655	3.738469	-0.41632	-0.57316	0.463026	-3.04748
2004	-0.32104	-1.59036	1.93767	-1.87671	0.755878	-1.48039	-3.81675	0.155199	-2.77607
2005	-0.95329	-1.56287	1.567967	-1.53886	1.653454	2.860967	-2.25825	0.081457	-2.82058
2006	-0.88444	-1.38923	1.880022	-1.78506	-0.99045	1.540108	0.571634	0.070535	-2.10972
2007	-0.41123	-2.14101	1.454939	-1.34043	-0.14179	3.58707	0.850079	0.067195	-2.09582
2008	-0.52358	-1.65156	1.941658	-0.96519	-0.7198	7.349057	-1.25681	0.425276	-0.04113
2009	-0.48132	-1.47363	2.297845	-0.29348	0.026359	#NUM!	-2.3455	0.587683	-0.93287
2010	-0.33433	-1.49959	2.345204	-1.23653	1.63179	6.628206	-0.15416	0.37153	-2.24495
2011	-0.77588	-1.59239	2.308147	-0.97028	-0.2168	2.612762	1.31356	0.225292	-1.61354
2012	0.935647	-1.50062	2.391518	-1.20351	-4.21581	2.714933	2.234423	0.201161	-0.89633
2013	-0.39774	-1.7662	2.454112	-0.8268	-1.82138	0.343356	1.812605	0.114239	-2.04678
2014	-0.34176	-2.06823	2.363972	-0.59172	-0.95288	0.660764	0.817417	-0.05427	-2.21773
2015	0.008687	-1.9142	1.903645	-1.26649	1.116205	1.125518	0.195256	-0.09642	-2.46923
2016	-0.97286	-1.99239	1.696169	-0.70872	0.196158	1.809128	-0.39211	-0.31894	-2.47263
2017	-0.66231	-1.6585	2.323651	-0.61511	-1.13435	3.83046	-0.55133	-0.19607	-2.01449
2018	-1.15791	-1.35717	1.666485	-0.67932	#NUM!	0.823095	-0.64528	-0.22366	-2.00782
2019	-1.57516	-1.33194	1.673374	-0.53167	-1.90968	-1.90771	-1.69934	-0.39965	-1.37314
Mean Value	-0.55682	-1.51599	1.90098	-1.00362	#NUM!	#NUM!	-0.07211	0.183362	-2.08809

The RC values as indicated in the above table is more than 1 for following products:
Product: 2203 Beer made from malt

Product: 2205 Vermouth and other wine of fresh grapes, flavoured with plants or aromatic substances

Product: 2206 Cider, Perry, mead and other fermented beverages and mixtures of fermented beverages and non-alcoholic...

Product: 2207 Undenatured ethyl alcohol of an alcoholic strength of >= 80%; ethyl alcohol and other spirits.

This indicates the India has a comparative advantage in these above products.

It is further also evident from the data that there is no significant change in India's overall trade competitiveness over time.
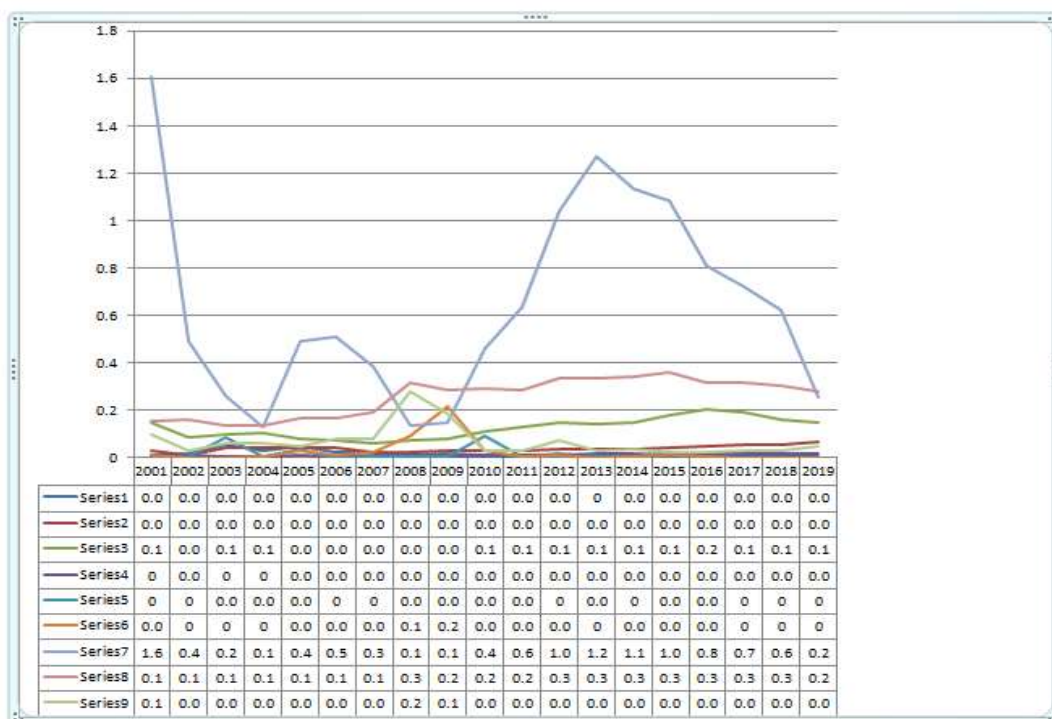

Looking at various flows of data it may be inferred that though there is no export competitiveness till now but it can be there with the improvement in certain policies and mechanisms/.

S Code	RCA(Mean Value)	RMA(Mean Value)	RC(Mean Value)
2201	0.015049643	0.027339843	-0.556816304
2202	0.037748277	0.188052135	-1.51598672
2203	0.124270449	0.019822422	1.900980458
2204	0.009029539	0.023462243	-1.003619664
2205	0.015509538	0.009474734	0
2206	0.025237551	0.002411107	0

2207	0.639743032	1.10114093	-0.072110508
2208	0.255732108	0.238285754	0.183361739
2209	0.06513225	0.51968287	-2.088094762
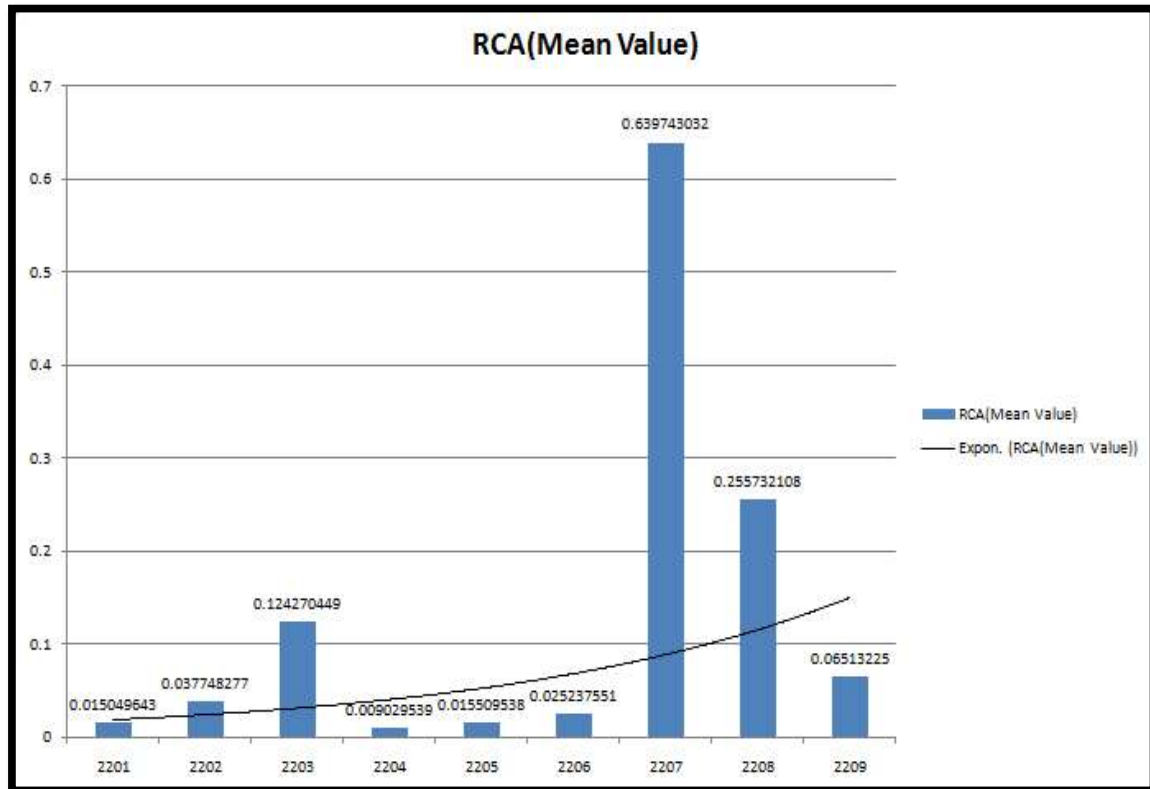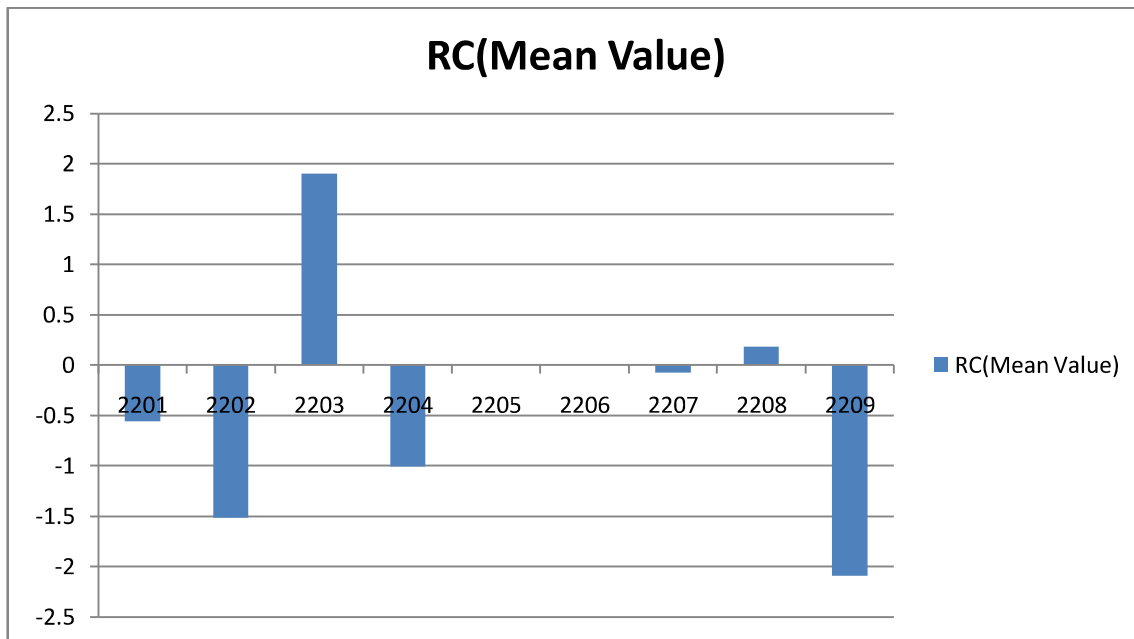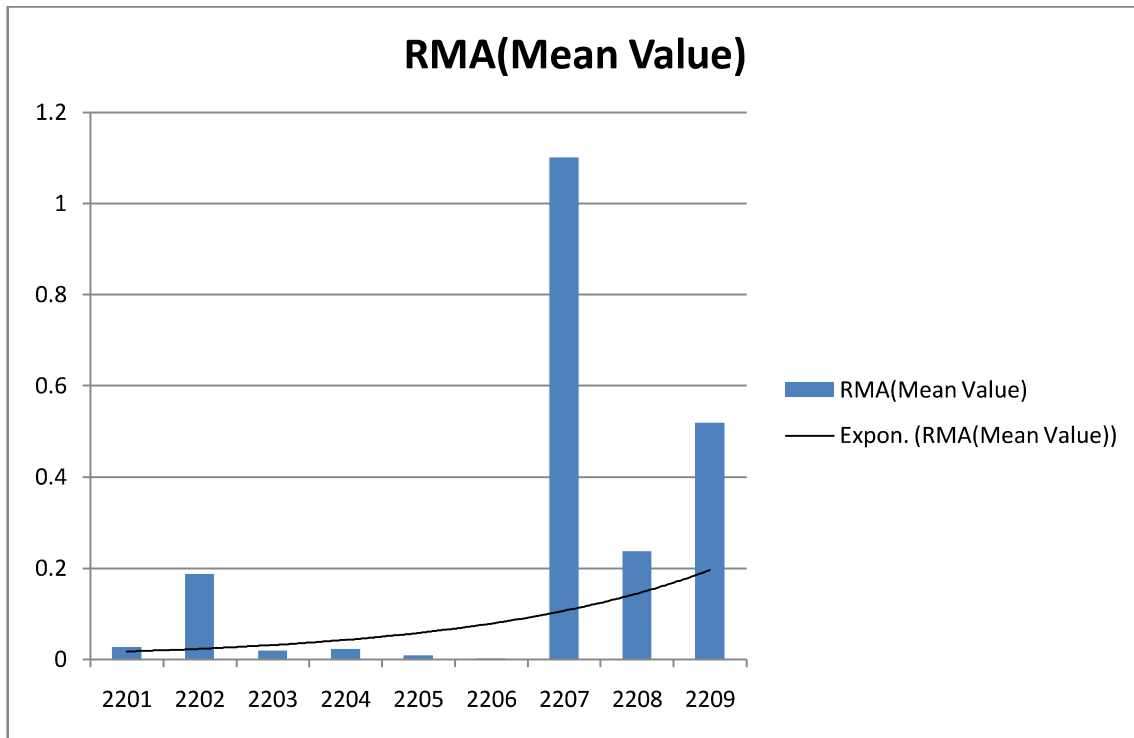
Looking at the mean values of RCA, RMA and RC over the years it may be inferred that there are very few products displaying the export competitiveness. As discussed above also the trends are not changing over the years and thus a need to look for policy changes now.

Further on applying one sample Chi square non parametric test at the value of each product over the years, it was found to be significant at alpha=0.05 to retain the null hypothesis.

The output is as follows:

	Null Hypothesis	Sig.	Decision
1	The categories of 2201 occur with equal probabilities.	1.000	Retain the null hypothesis.
2	The categories of 2202 occur with equal probabilities.	1.000	Retain the null hypothesis.
3	The categories of 2203 occur with equal probabilities.	1.000	Retain the null hypothesis.
4	The categories of 2204 occur with equal probabilities.	1.000	Retain the null hypothesis.
5	The categories of 2205 occur with equal probabilities.	1.000	Retain the null hypothesis.
6	The categories of 2206 occur with equal probabilities.	1.000	Retain the null hypothesis.
7	The categories of 2207 occur with equal probabilities.	1.000	Retain the null hypothesis.
8	The categories of 2208 occur with equal probabilities.	1.000	Retain the null hypothesis.
9	The categories of 2209 occur with equal probabilities.	1.000	Retain the null hypothesis.

The test results are as follows:

Product	Total N	Test Statistic	Degree Of Freedom	Asymptotic Sig.(2-sided test)
2201	20	0.000	19	1
2202	20	0.000	19	1
2203	20	0.000	19	1
2204	20	0.000	19	1
2205	20	3.400	17	1
2206	20	3.400	17	1
2207	20	0.000	19	1
2208	20	0.000	19	1
2209	20	0.000	19	1

Thus finally it may be concluded that there is no change over the years for exports of product of HS 22 and products also do not have the export competitiveness.

Further the studies and research shows that if following parameters may be settled in Indian context then India may achieve the export competitiveness in the wine exports in due course

of time. India is presently considered to be a likely market by worldwide wine organizations. With increasing regulatory modifications, new administrative arrangements, and improved technical efficiencies, the Indian wine market is likely to increase in the near future. The following are some of the main aspects that highlight India's global competitiveness.

India, in the contemporary era, is considered to be a potential market by the global wine organizations. With the recent enhanced regulatory modifications, new administrative arrangements, and improved technical efficiencies, the Indian wine market is likely to augment in the coming future. There are many aspects that highlight India's global competitiveness.

To begin with our country's multifaceted climate, which ranges from tropical to temperate, is favorable for the cultivation of a wide range of grape varieties (including indigenous varieties) such as Anabeshahi, Arkavati, Arkashyam, Syrah, Cabernet Sauvignon, Merlot, Chardonnay, Sauvignon Blanc, Zinfandel, Shiraz, Chenin Blanc, and Clairette Blanche. Presently there are approximately 110 wineries in India, out of which 72 are located in the Maharashtra province. Basically, India's wine production is divided into five distinct regions: Nasik and Pune for Maharashtra state and Bangalore, Hampi Hills, and Bijapur in Karnataka state, where Maharashtra (90%) and Karnataka (7%), while the states Goa and Himachal Pradesh generates less than 3% of production. (Sood, 2019) acknowledges 5% increase in the production over 2018 as the cultivated area is expected to expand due to the increase in commercial factors and tax adjustments

Another important aspect of India's global competitiveness is that it has a set of differential government norms followed by different states. Some states have recognised and provided ease in liquor manufacture and distribution by establishing National Wine Boards in Pune, Maharashtra, and Wine Clubs in Delhi, Bombay, Bangalore, and Hyderabad, while other states have completely abandoned the practice. The wine industry's overall competitiveness is boosted by a number of incentives like simplified licensing, VAT, Excise Duty, Custom Duty, Nominal to No Label costs, tax holidays, etc. Apt advertising and marketing strategies are extremely significant for the successful launching of any product. Despite the fact that India prohibits all forms of direct advertising of liquor, the indirect marketing tactics used by various firms have always outperformed their counterparts. Consequently, to capture the national and international market base, a number of innovative strategies such as organizing Wine Expo, Wine shows such as IFE, Vinitaly India (Delhi), Annapoorna India (Mumbai), and setting up online platforms such as Indianwine.com and Sommelier India have always fascinated the attention of the masses, especially the tourists. To capture and dominate the global export market many more such creative promotional ideas are being incorporated thereby enhancing export competitiveness and hence gaining worldwide popularity. To manage the supply chain, a number of government policies, such as the Gatishakti National Master Plan, which aims to align all seven engines in the National Infrastructure Pipeline, is expected to be very successful in raising export competitiveness for all sectors. It is projected that many more such initiatives are expected in the coming future, which will certainly benefit the wine industry as well.

India also has a competitive advantage in terms of labour availability and pricing, As a result, significant drop in the cost of raw materials like corks and bottles, along with improved technical efficiency, will encourage the realization of economies of scale.

Conclusion

Thus if the government and other organisations look into the factors discussed in the study then there are prominent chance that India may achieve the export competitiveness in the wine exports.

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SUMMARY:

The RCA model is used to assess the export competitiveness of Indian spirits in this study, which is structured into five sections. Following the research study, there is a brief outline of wine's competitiveness. The goal of the study is to determine India's total wine trade competitiveness over time, as well as the shift in wine exports in terms of comparative advantage, from 2000 to 2018. The revealed competitive advantage paradigm was applied to access the competitiveness of wine. The findings suggest that India has the potential to enhance its wine export competitiveness over time.