Strategies to Increase Exports of Wine Companies of the Valle de Guadalupe Region in Baja California, México

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KEYWORDS
Valle De Guadalupe, Wine Company, Cluster, Export, PLS-SEM

ABSTRACT
This research analyzes the exports of wine companies in the Valle de Guadalupe region in the State of Baja California, Mexico. The objective is to determine the factors that induce strategic decision making to achieve a high-performance level of productive capacity. The hypothesis suggests that production, technological innovation, and competitiveness are the factors that favor the exports of these wine companies. For the statistical analysis, Partial Least Squares structural equation modeling (PLS-SEM) is used, including the evaluation of the out-of-sample predictive power by means of PLS predict. The methodology used includes a qualitative analysis of the current situation on the subject and a quantitative study of data obtained by applying a 41-item instrument to ninety-two companies. The main findings show that the variable that presents a higher degree of association is competitiveness and the variable that presents a lower degree is production. Another finding is that there is a need to strengthen collaborative projects with a Cluster Approach, in which the collaboration network between these companies, government agencies, wine associations and educational institutions must be actively involved. The main strategies proposed are three: the first in relation to competitiveness is to improve operational planning to increase productivity. The second is to achieve a more competitive price by purchasing supplies collaboratively between companies; the existing common bond and business cooperation will allow exports to increase. The third is to manage a greater participation of the government, in terms of financing and support, investment in highway infrastructure, reduction of taxes on this item and the sustainable administration of the State’s water resources.

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Introduction
The aim of the study is to find out some of the factors that would favor exports by making strategic decisions to increase productive capacity. This work contributes to obtain information on these factors, the export process of the wine industry and the collaboration networks of Valle de Guadalupe in the State of Baja California, Mexico. The problem detected is the limited or scarce
number of exports of bottles of Red Wine. The reason for conducting this research is to promote the development of companies and related sectors that have an important participation in the economic and social development of the State. In addition to the diffusion of information, debate, and future lines of research.

The international market for vineyards, wine and wine products has been present in the world since the Bronze Age when the first grapes (vitis vinifera sylvestris) began to be cultivated and fermented. Globalization, the competitiveness of exporting wine companies and the increase in global demand, especially from new consuming countries, contribute to making the wine industry one of the most productive (Casa Madero, 2021). The country has enormous potential for wine production due to its climatological characteristics, its ground, and its quality. The implementation of technology and innovation in its oenological processes has allowed a great advance in the sector. Currently 14 of the 32 states in the Mexican Republic carry out wine activities: Aguascalientes, Baja California, Baja California Sur, Chihuahua, Coahuila, Durango, Guanajuato, Jalisco, Querétaro, Puebla, Nuevo León, San Luis Potosí, Sonora and Zacatecas. In the country 39,000 hectares are used for viticulture, of which 22% are used for wine production.

The Mexican Wine Council (CMV) oversees promoting the development of vine cultivation, the industrialization of grapes, marketing, as well as the promotion of the products obtained from it. Due to their work, the country has a Collective Brand of Mexican Wine, a hallmark of quality and origin at an international level. The International Organization of Vine and Wine (OIV) is an intergovernmental scientific and technical organization in charge of coordinating the activities of the wine sector, made up of 47 member countries. This organization annually holds a World Congress of Vine and Wine; and fortunately, the venue scheduled for October 2022 will be the municipality of Ensenada in Baja California, Mexico.

The State of Baja California is the main producer and exporter of wine in the country with approximately 70%; it has 8 valleys in which there are more than 260 vine-producing companies, of these 110 companies produce and market wine. Of 6,474 hectares of wine grapes, 57% is in Baja California, that is, 3,100 hectares, and 1,400 hectares are distributed in the Valle de Guadalupe (Provino Committee [PROVINO], 2021). The Valle de Guadalupe region concentrates 95% of the wine produced in Baja California, due to its geographical location, which has similar weather conditions to the Mediterranean areas of Europe (southwest France).

Theoretical perspectives

*Export*

The concept of export refers to the sale, exchange or donation of goods and services, or transfer of property to residents of different countries done under a commercial agreement in compliance with the provisions of the Law and current Customs Regulations at the time of the exchange (National Institute of Statistics, Geography and Informatics [INEGI], 2021). The importance of exports lies in the effect they have on economic growth, productivity, and employment in the country in question (Chiquiar & Ramos, 2005).

According to the country's business leaders interviewed by the World Economic Forum's Executive Opinion Survey, the main obstacles to exports in Mexico are (in order of importance):
identify the markets and potential buyers, (2) access to financing, (3) standards or requirements requested abroad and (4) high costs or delays caused by transportation within the country (World Economic Forum [WEF], 2014). The cost of transporting goods from production points to shipping points (i.e., ports, airports, etc.) can become so high for certain regions of Mexico that it inhibits exports. In Mexico, the reduction of one percentage point in transportation costs translates into a 2.6% increase in exports (Inter-American Development Bank [IDB], 2013).

The aim of the study is to establish the factors that induce strategic decision making to achieve a high-performance level of productive capacity. The objective of these strategies is to increase exports including the productivity of companies, identify the sectors that work in collaboration with these companies and achieve greater government participation in terms of financing and sustainability of the state. This research focuses on three forms of internationalization from the economic perspective, the process perspective, and the network perspective. These strategies, as Porter (1982) says, can give a sustainable competitive advantage that allows it to overcome rival firms with which Wine Companies compete outside the country. In the first, Porter's theory of competitive advantage explains how companies manage to develop competitive advantages in competitive markets and not only in imperfect markets (Porter, 2010). Dunning's eclectic theory says that the decision to enter markets with direct investment is based on a rational decision considering cost analysis and the advantage of producing abroad.

The company must have its own advantages compared to local companies: in its structure, organizational and work capacity, diversification, experience, ease of access to resources, operational flexibility that enables arbitration, global supply of supplies, as well as the ability to take advantage of geographic benefits. In other words, it is more profitable for them to internalize these advantages through the expansion of value chains or the execution of new activities (Dunning, 1993).

The network perspective contemplates the continuous interorganizational interactions between local companies and their networks focused on the transmission of information contemplating the business opportunity (Trujillo et al., 2006). This model considers that foreign market opportunities are communicated to companies through members of their own network and that they are also useful for researching and evaluating potential partners. In international business it is necessary to establish a social commitment before a formal negotiation, in the sense of the good history and good reputation of each company. The risk of this incursion into international markets must be minimized through agreements between agents and intermediaries (Anderson & Gatignon, 1986; Johanson & Mattsson, 1988).

The model defended by Johanson and Mattsson (1988) considers business networks to be those that companies maintain with their customers, distributors, competitors, and the government. When companies internationalize in a network approach, relationships are formed with partners in new countries, commitment to established networks is increased, and network positions in different countries are integrated, allowing the company to maintain relationships for have access to resources and markets. This also favors small and medium-sized companies with no experience in
the international market. The authors classify companies into four, according to their degree of network internationalization: starter, laggard, loner, and international with other companies.¹

Some criticism of the network model is that it does not determine how companies will overcome the problems that arise in the process of internationalization through networks. Likewise, this perspective excludes the influence of external factors (uncontrollable variables) that drive the company towards internationalization, such as local competition and government policies of the country of origin or destination (Johanson & Mattsson, 1988).

Production

Ronald Coase (1937) was the first to propose that firms and markets were alternative means of governance that differed from transaction costs. For Williamson (1999, p. 1088), the fundamental problem of economic organization is adaptation. The ability to adjust (that is, to design adequate incentives, to choose the correct contractual and market modalities, and to create an efficient corporate governance system) allows the company to achieve positive performance levels, constantly attending to efficiency and thereby minimizing transaction costs.

Tirole (1990, p. 17) states that an essential part of the Industrial Organization Theory is the market; under conditions of perfect competition, economic theory defines it as the relationship established between suppliers and demanders without the participating agents being circumscribed to a physical location. The products are different in the following aspects: location, availability, appearance, consumer information, advertising, technology, brand, and production costs. Raymond Vernon (1966) proposed the product life cycle theory, based on observations of American companies during most of the 20th century. This theory includes four stages that a product or service must go through when it goes to market. And he affirms that the competitiveness of companies is not constant over time. In the theory of economies of scale, the price of a product in a competitive market is determined by supply and demand, this market will be in equilibrium in the long term; when the price is equal to the average cost, and this in turn is equal to the marginal cost (Mansfield, 1997).

Technological innovation

Sherman Gee (1981) defines innovation as: “the process in which a useful product, technique or service is developed from an idea, invention or recognition of a need until it is commercially accepted”. Joseph Schumpeter (1982) defines the production process formed by a combination of material forces (work, ground, and capital) that cause a gradual and slow change in the growth of the economic system; and by immaterial forces (technical facts and social organization) that provoke social technological changes, which in turn exert a more dynamic and decisive change in

¹Internationalization in industrial systems a network approach, in N. Hood and JE Vahlne (Eds), Strategies in Global Competition, Croom Helm, London, pp. 287-314
economic development. What is important are radical innovations capable of bringing about revolutionary changes in the capitalist system, society, and the economy.

In resource-based theory the nature and essence of the firm can usefully be viewed as one. They are reduced to the diagnosis, configuration and combination of knowledge assets and organizational capabilities to allow the directors of these organizations to capture value (benefit) from both the creative and routine operations of the firm (Pitelis & Teece, 2009). The theory of the innovative environment, by environment refers to the ability of a certain territorial area to capitalize on the geographical proximity of the actors in the form of skills and behaviors aimed at the production, transmission and accumulation of knowledge linked to productive activities. Either by the combination of productive inputs of the companies, via outsourcing, organic internationalization, or integration (Quevit, 1991).

**Competitiveness**

Paul Krugman (1994) thought that competitiveness should only apply to corporations, which were destined to compete in the market. It is these companies and their performance that define their survival or failure; on the contrary of a market economy or a country that cannot go bankrupt. The Urban Theory of Jane Jacobs that considered that cities were the main factor of wealth. Michael Porter's Theory where operational efficiency and the establishment of geographical "clusters" was necessary to be competitive. And the Schumpeterian Theory that considered the innovative entrepreneur as the driver of the technological advancement process of the company, as the most key role for economic growth (Hategan, 2012).

Competitive intelligence (CI) that emerged in the eighties as a need to adapt to technological development and globalization, reached its maturity with the degree of complexity in the field of products and services. The increasingly demanding standards, the greater diversification, as well as the reduction of waiting time to satisfy the needs throughout the production chain; have forced companies to consider variables and information databases that allow them to anticipate the behavior of potential consumers (Antia & Hesford, 2007). Competitive surveillance arises as a need to observe and analyze the company's environment to respond to changes. This studies data regarding customers and suppliers, competitors, available technologies; and the environment in areas such as sociology, politics, and the environment (Benavides & Quintana, 2006).

In strategic management, the concept of dynamic capabilities is a term that reflects the ability to renew and adapt to the changing environment (Pavlou & Sawy, 2011) and mainly includes three concepts: administrative capabilities related to the integration and coordination of resources and activities; organizational capabilities, which are related to improving the performance and productivity of its assets to generate a sustainable competitive advantage; and strategic capacities, which are related, as the name implies, to the implementation and evaluation of the impact of strategies.

Wernerfelt's approach provides a basis for formulating strategy and knowing which resources a firm should rely on, which resources it should develop, which markets it should diversify into, etc. Resources are understood as those tangible and intangible assets that are semi-permanently linked
to the firm, such as: brands, employment of qualified personnel, commercial contracts, machinery, knowledge of technology developed within the firm, among others (Wernerfelt, 1984).

“Born Global or new international companies” have a presence in many countries around the world, due to commercial globalization that has favored the formation of networks (personal, commercial, and institutional) and strategic alliances that facilitate their insertion into international markets. Coupled with the use of information technologies and reduction of transportation costs. Only those belonging to services and high technology are classified as Born Global; however, this trend today is open to a wide range of industries (Andersson & Wictor, 2003).

After reviewing the theoretical background, Table 1 shows some works that serve as a basis to support current theoretical perspectives.

Table 1.
Review of the current trend’s literature.

<table>
<thead>
<tr>
<th>Font</th>
<th>Evaluation</th>
<th>Dimension / indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adu-Gyamfi &amp; Korneliussen</td>
<td>Background to Export Performance: The Case of Emerging Markets</td>
<td>Firm size, internationalization, emerging markets</td>
</tr>
<tr>
<td>Erdil &amp; Özdemir</td>
<td>The effects of firm characteristics and marketing strategies on export performance</td>
<td>Export performance, characteristics of the firm</td>
</tr>
<tr>
<td>Syropoulouet al.</td>
<td>Strategic objectives in exporting companies: capabilities, knowledge, and environment</td>
<td>Strategic objectives, internationalization, and performance</td>
</tr>
<tr>
<td>Gokcekus &amp; Gokcekus</td>
<td>Effect of expert ratings on wine prices</td>
<td>Categorization, wine, corporate reputation</td>
</tr>
<tr>
<td>Guinéet al.</td>
<td>The duality of food innovation and development</td>
<td>Consumer acceptance, introduction of new products and services to the market</td>
</tr>
<tr>
<td>Oehler</td>
<td>Technological change and innovation decomposition: Upgrading of newcomers</td>
<td>The changing conditions of the global economy</td>
</tr>
</tbody>
</table>

Source: Own elaboration based on the review

**Fieldwork**

The study group for this work is made up of the one hundred wine companies located in the Valle de Guadalupe region, registered with the Secretary of Tourism, Economy, and Sustainability of the State of Baja California (2020).

The distribution of the companies is as follows: on the wine route that includes Valle de Guadalupe, San Antonio de las Minas, Francisco Zarco and El Tigre, there are 57 companies; on the El Porvenir wine route, 27 companies; on the old wine route that includes La Grulla, Santo Tomás and San Vicente, 5 companies; in the North Gate, which is made up of Valle de Tanamá and Valle de San Valentín, 4 companies; in Ojos Negros 2 companies; and finally in El Sauzal 5 companies are located.

**Methodology**

For this research, the analysis of the information was carried out through the modeling of structural equations Partial Least Squares PLS-SEM (Hair et al., 2017). The estimate was made using the SmartPLS version 3.3.3 software (Ringle et al., 2015). The first step was to specify the activities to
measure the variables: exports, production, technological innovation, and competitiveness. This was done in a variable operationalization table which 14 items were determined and applied in a questionnaire to the 92 wine companies. Due to the nature of the variables to be measure, the scale used was Likert-type (1932) with five response options: totally agree (5 points), agree (4 points), neither agree nor disagree (3 points), disagree (two points), and strongly disagree (one point). The data collection was done in an Excel sheet to later load the information in the statistical program SmartPLS. In this, a path model was built with the constructs an indicator. The model evaluated internal consistency reliability, convergent validity, and discriminant validity (Hair et al., 2017).

For data analysis, the evaluation of the reflective measurement model (internal consistency, convergent validity, and discriminant validity), the saturated measurement model (fit indices and exact fit test based on Bootstrap), the structural model (collinearity, $R^2$ value and $f^2$ value) and hypothesis testing (Chin, 2010).

In the reflective model to evaluate the reliability of internal consistency, the measures used are the Cronbach's Alpha Coefficient and the composite reliability ($\rho_c$) and ($\rho_A$). For the convergent validity, the reliability of the indicator and the average variance extracted (AVE). And the discriminant validity is evaluated using the Fornell and Larcker criteria, the cross loads and the heterotrait-monotrait ratio (HTMT) (Cepeda-Carrion et al., 2019).

The evaluation of the saturated model recommended by Henseler (2018) includes the goodness-of-fit indices and the Bootstrap-based exact fit tests. The fit indices (approximate value) of SRMR are $<0.08$ (Hu & Bentler, 1998) or $<0.10$ (Williams et al., 2009). Bootstrap-based exact fit tests are $\text{SRMR} \leq \text{HI95} \leq \text{HI99}$, $\text{dULS} \leq \text{HI95} \leq \text{HI99}$, and $\text{dG} \leq \text{HI95} \leq \text{HI99}$.

The evaluation of the structural model includes the coefficient of determination ($R^2$), the cross-validated redundancy measure based on ($Q^2$), the statistical significance and the relevance of the trajectory coefficients. The predictive power of the model and the relationships between the constructs can also be evaluated using the PLSpredict procedure (Shmueli et al., 2016).

**Results**

The structural model is the diagram (path model) where the research hypothesis and the relationships between the variables, the constructs and indicators based on the review of the literature and the operationalization of the variables were established. The hypothesis suggests that production, technological innovation, and competitiveness are the most important factors that would increase the exports of wine companies.

For the estimation of the structural model proposed by Hair et al. (2017) that includes the evaluation of the measurement model, the structural model and the interpretation of results, the software SmartPLS version 3.3.3 (Ringle et al., 2015) was used. The results of the reflective measurement model are shown in Table 2 below.
Table 2.
Evaluation of the reflective measurement model

<table>
<thead>
<tr>
<th>Latent variable</th>
<th>Convergent validity</th>
<th>Internal consistency reliability</th>
<th>Discriminant validity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ave</td>
<td>Composite reliability</td>
<td>Cronbach’s alpha</td>
</tr>
<tr>
<td></td>
<td>&gt; 0.50</td>
<td>0.60-0.90</td>
<td>0.60-0.90</td>
</tr>
<tr>
<td>Competitiveness</td>
<td>0.257</td>
<td>0.754</td>
<td>0.638</td>
</tr>
<tr>
<td>Production</td>
<td>0.509</td>
<td>0.755</td>
<td>0.512</td>
</tr>
<tr>
<td>Technological innovation</td>
<td>0.330</td>
<td>0.737</td>
<td>0.611</td>
</tr>
<tr>
<td>Export</td>
<td>0.320</td>
<td>0.820</td>
<td>0.756</td>
</tr>
</tbody>
</table>

In the evaluation of the estimated model to perform the calculation of the goodness of fit indices, the constructs were calculated in the form of compounds, specifying mode A in the indicator weighting method, performing a complete bootstrapping of 1000 subsamples, a test of one tail and a significance level of 0.05 (Roldán & Cepeda, 2020). The results of the estimated model according to Henseler (2018) are shown in the following table 3 in which the three indicators meet the thresholds. Therefore, the measurement model is considered good (it cannot be considered false); since the model fit is true. The data does not contain more information than what the model transmits, that is; indicators work better within the construct than separately.

Table 3.
Evaluation of the estimated model

<table>
<thead>
<tr>
<th></th>
<th>Original sample (OR)</th>
<th>Sample mean (M)</th>
<th>95%</th>
<th>99%</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMR</td>
<td>Saturated model</td>
<td>0.084</td>
<td>0.075</td>
<td>0.086</td>
</tr>
<tr>
<td></td>
<td>Estimated model</td>
<td>0.084</td>
<td>0.075</td>
<td>0.086</td>
</tr>
<tr>
<td>dULS</td>
<td>Saturated model</td>
<td>2.868</td>
<td>2.292</td>
<td>3.038</td>
</tr>
<tr>
<td></td>
<td>Estimated model</td>
<td>2.868</td>
<td>2.290</td>
<td>3.036</td>
</tr>
<tr>
<td>dG</td>
<td>Saturated model</td>
<td>0.835</td>
<td>0.935</td>
<td>1.308</td>
</tr>
<tr>
<td></td>
<td>Estimated model</td>
<td>0.835</td>
<td>0.937</td>
<td>1.343</td>
</tr>
</tbody>
</table>

The results of the structural model in table 4 show that the exogenous constructs: Competitiveness, Production and Technological Innovation do not have multicollinearity problems between them. The relationships between the constructs are positive, that is; statistically significant other than zero. The confidence intervals show that there is no change in sign so that the hypotheses are supported.

Table 4.
Evaluation of the structural model

<table>
<thead>
<tr>
<th>Latent variable</th>
<th>Collinearity (VIF)</th>
<th>R² value</th>
<th>F² value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; 3 ideal value</td>
<td>0.50</td>
<td>0.02 ≤ f² &lt; 0.15 small effect</td>
</tr>
<tr>
<td></td>
<td>moderate value</td>
<td>0.558</td>
<td>0.15 ≤ f² &lt; 0.35 moderate effect</td>
</tr>
<tr>
<td></td>
<td>large effect</td>
<td>0.222</td>
<td>F² ≥ 0.35 large effect</td>
</tr>
<tr>
<td>Competitiveness</td>
<td>1,270</td>
<td>0.333</td>
<td>0.033</td>
</tr>
<tr>
<td>Production</td>
<td>1,139</td>
<td>0.475</td>
<td>0.070</td>
</tr>
<tr>
<td>Technological innovation</td>
<td>1,341</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Own elaboration based on the estimates
The hypothesis test is accepted because the independent variables: production, technological innovation, and competitiveness, have a positive influence and a meaningful relationship with the dependent variable Export. Table 5 shows the results where it is observed that all the effects are significant at a 5% level.

Table 5.
Significance tests

<table>
<thead>
<tr>
<th></th>
<th>Original sample (OR)</th>
<th>Sample mean (M)</th>
<th>t-statistics</th>
<th>P Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. COMP -&gt; 4. EXP</td>
<td>0.413</td>
<td>0.431</td>
<td>4.318</td>
<td>0.000</td>
</tr>
<tr>
<td>2. PROD -&gt; 4. EXP</td>
<td>0.152</td>
<td>0.162</td>
<td>1.660</td>
<td>0.048</td>
</tr>
<tr>
<td>3. T.I -&gt; 4.EXP</td>
<td>0.239</td>
<td>0.271</td>
<td>2.493</td>
<td>0.006</td>
</tr>
</tbody>
</table>

Table 6.
Analysis of predictive power outside the sample

<table>
<thead>
<tr>
<th></th>
<th>PLS PREDICT</th>
<th>LM</th>
<th>PLS-LM</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RMSE</td>
<td>MAE</td>
<td>Q² predict</td>
<td>Asymmetry</td>
<td>RMSE</td>
<td>MAE</td>
<td>RMSE</td>
</tr>
<tr>
<td>Exp4</td>
<td>1,208</td>
<td>0.995</td>
<td>0.125</td>
<td>0.562</td>
<td>1,526</td>
<td>1.214</td>
<td>-0.318</td>
</tr>
<tr>
<td>Exp8</td>
<td>1,275</td>
<td>1.091</td>
<td>0.072</td>
<td>0.166</td>
<td>1,577</td>
<td>1.275</td>
<td>-0.302</td>
</tr>
<tr>
<td>Exp2</td>
<td>1,752</td>
<td>1.635</td>
<td>0.071</td>
<td>0.084</td>
<td>2,165</td>
<td>1.827</td>
<td>-0.413</td>
</tr>
<tr>
<td>Exp1</td>
<td>1,568</td>
<td>1.354</td>
<td>0.148</td>
<td>-0.460</td>
<td>1,787</td>
<td>1.440</td>
<td>-0.219</td>
</tr>
<tr>
<td>Exp10</td>
<td>1,250</td>
<td>1.064</td>
<td>0.074</td>
<td>0.205</td>
<td>1,445</td>
<td>1.167</td>
<td>-0.195</td>
</tr>
<tr>
<td>Exp7</td>
<td>1,237</td>
<td>0.993</td>
<td>0.015</td>
<td>0.738</td>
<td>1,417</td>
<td>1.110</td>
<td>-0.180</td>
</tr>
<tr>
<td>Exp5</td>
<td>1,231</td>
<td>0.996</td>
<td>0.088</td>
<td>0.662</td>
<td>1,473</td>
<td>1.165</td>
<td>-0.242</td>
</tr>
<tr>
<td>Exp6</td>
<td>1,330</td>
<td>1.113</td>
<td>0.049</td>
<td>0.500</td>
<td>1,533</td>
<td>1.213</td>
<td>-0.203</td>
</tr>
<tr>
<td>Exp9</td>
<td>1,201</td>
<td>0.977</td>
<td>0.117</td>
<td>0.137</td>
<td>1,478</td>
<td>1.191</td>
<td>-0.277</td>
</tr>
<tr>
<td>Exp3</td>
<td>1,244</td>
<td>1.035</td>
<td>0.030</td>
<td>0.857</td>
<td>1,487</td>
<td>1.208</td>
<td>-0.243</td>
</tr>
</tbody>
</table>

Source: Own elaboration based on the estimates of the algorithm in the SmartPLS software (Ringle et al., 2015).

The evaluation of the predictive power outside the sample (out of sample) by means of PLS predict is shown in table 6, the results obtained after subtracting the RMSE and MAE (PLS-LM) values are negative (negative sign). In other words, the errors that occur when predicting the Export indicators are lower compared to the theoretical model. This means that the model has predictive capacity.

The results of this research show that of the three independent variables used; competitiveness is the one that presents a greater degree of association with export competition; followed by technological innovation and production. In addition to that the model has predictive capacity.

Conclusions

I. In this field work, several factors that intervene in the export process of the wine companies of Valle de Guadalupe in Baja California were analyzed. For the statistical calculations, only the three independent variables mentioned above were analyzed. In this sense, the variables that most influence are competitiveness and technological innovation. The production variable influences a
smaller percentage in terms of exports, however, the factors included in the three independent variables must be considered for the diagnosis and implementation of the strategy in the company.

The importance of this study to the Wine Companies of the state of Baja California which by the year 2022 included more than 175 companies according to the fieldwork of this research; it is fundamental in the generation of jobs and income at the national level. Its significance lies in the participation they have in the economic and social development to the State, as well as the economic flow in the country. The field work of this research includes the statistical analysis of the data and the qualitative analysis of the information with the interviews carried out with the entities that intervene directly and indirectly in the process. The opinions of the personnel of each company allowed to know the reality of the situation.

The most important contribution that justifies this research is that it was determined that together with the integrated approach where strategies and activities for the socioeconomic development of the region are contemplated; financing is sought so that small and medium-sized companies can invest in resources to increase wine production, which is the main limitation for increasing exports. An investment destined to local supplies so that they can provide equipment, tools, bottles, barrels, stoppers, corks, labels, fertilizers, pesticides, and everything necessary for the production of wine that is currently imported from other countries.

The above elements have been essential for Baja California to be formally considered a business cluster. Porter (1998) defines a cluster as a geographical concentration of interconnected or related companies, institutions, and sectors in a common workplace. These are related by knowledge, skills, technologies, or resources. Porter (2000) includes the wine industry in the cluster concept. The long-term economic viability of viticulture systems must have processes that seek sustainable growth that includes innovative practices that protect the environment and natural resources. The Wine Promotion Law approved on May 23, 2018, has favored companies and government agencies to adopt efficient technologies to increase wine production capacity and its competitiveness (Rodríguez et al., 2021).

The findings of this study suggest that the main limitations are limited or scarce water resources, lack of financial resources, private and public economic support, limited production, and investment in technological innovation.

According to those surveyed, the strategies that would favor the export performance of companies would be:

1. Promote a state strategic planning process in which the main stakeholders participate companies, input suppliers, supply chains, government agencies, educational institutions, and wine associations.
2. Government support to improve the infrastructure of the state in relation to the supply of drinking water, sewerage and sanitation, highway infrastructure, support for the international distribution network, as well as for all members of the state's value chain.
3. Achieve a more competitive price through the collaborative purchase of supplies between national companies: equipment, tools, bottles, barrels, stoppers, corks, labels, fertilizers, pesticides, and everything necessary to produce wine that is currently imported from other countries.
Suggestions for future research

The following lines of research are proposed to complement the information presented here:

- Include all the wine companies in the state, considering those considered micro or author, which tend to be family businesses but also participate in the supply chain.
- Identify other factors or variables in the supply chains that influence the generation of the added value of the product.
- Conduct an analysis of foreign direct investment in the state, including other items such as infrastructure, tourism activity and real estate.

Reference


Secretary of Tourism of the State of Baja California, (2020). Baja California Wine Route. Tijuana, BC: Government of the State of Baja California.


**Acknowledgments**

Not applicable.

**Funding**

Not applicable.

**Conflict of Interests**

No, there are no conflicting interests.