Oaxaca Mezcal, A Natural Growth Stage Cluster The Mezcal de Oaxaca, A Natural Cluster in Growth Stage

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Abstract

This article aims to analyse the influence exercised by the performance of the cluster of mezcal in their competitiveness, in order to build a scale that allows you to measure the performance of industrial clusters. To do this, is reviewed the cycle of life and performance of cluster theory, proposed by Andersson, Schwaag, Sörvik y Wise, (2004), Sölvell (2009) and De Langen (2004). The methodology ascribed to the mixed research paradigm, using the techniques of document review, observation, interview and questionnaire. The Statistical analyses include descriptive statistics, analysis of bivariate correlation and linear regression model. Arose as a working hypothesis, which, It was accepted since performance influences positively and significantly on the competitiveness of the cluster of mezcal. To test the hypothesis were selected 50 companies on-site, same, they are located in the central valley Region of Oaxaca. The results show that there is talk of a natural cluster in growth stage, where competitiveness is based on the comparative advantages that provides its local structure. Are currently recognized a change in the way of competing, condition that has generated the creation of competitive advantages in aspects such as; quality, technology, critical mass, value-added and diversification of products.

Keywords: Cycle of life; Cluster; Mezcal; Performance; Competitiveness

Introduction

There is a wide variety of studies and evaluations to political clusters that bring the proximity between companies, institutions and support agencies within a specific geographic area, has advantages ranging from proximity to raw materials, market access and infrastructure, availability of skilled and obtaining support of government [1-8] work. However, with all the hype that has been given to the benefits of geographical proximity and the formation of clusters, there is a lack of studies in principle, analyze the performance of clusters and on the other hand demonstrate the competitive improvement of companies [9-12].

In Mexico several states promote cluster model in sectors such as ; footwear and automotive (Guanajuato), electronics (Jalisco), denim (Coahuila), aerospace (Querétaro), auto parts and agribusiness (Puebla), automotive (Aguascalientes), tourism and electronics (Baja California), tourism and mezcal (Oaxaca), between others [13,14]. It seems as state governments for the implementation and development of these models can be carried out both in regions and sectors developed and developing regions and sectors. The theoretical framework on clusters does not exclude or delimits the promotion thereof.

The cluster model to have gestated in developed countries where their burgeoning industries are quasi-homogeneous and high-tech [15-19], worth pondering and identify those adaptations that central governments should reconfigure especially in areas, regions and business sectors where local conditions and capacities do not favor the traditional concept of cluster model. In addition to this, it has been shelved for the implementation and development of these models, the particular analysis of its genesis, life cycle and the factors that determine their success. An analysis of these aspects help to design more in line with the conditions, characteristics and capabilities of the clusters in question [9,20,21] shares.

Given the characteristics of cluster model promoted by the state government of Oaxaca in strategic sectors, it is intended that the theory regarding the life cycle and performance of the

cluster, help to better understand the competitiveness of all companies representing the cluster of mezcal Central Valleys of Oaxaca Region, as the literature on these concepts only shows research conducted in developed countries and in sectors with large companies. From a practical approach, it is expected that the performance obtained by each of the actors involved in the cluster of mezcal influence directly and positively on the competitiveness of companies that comprise mezcal.

The cluster of Mezcal of the central valley of Oaxaca

Mezcal is an alcoholic beverage and diverse odor, flavor colorless or slightly amber when resting or aged in wooden containers white oak or oak. According to the provisions of NOM- 070- SCFI–1994 [22], it is considered mezcal ; to that regional alcoholic beverage obtained by distillation and rectification of musts prepared direct and originally with sugars extracted from the mature heads of agave.

In this research the cluster of mezcal represents a population of companies clustered geographically in the region of the Central Valleys of Oaxaca, which is characterized by mutual relations between associations and organizations for collaboration around a distinctive and specialized activity as production and sale of mezcal. The cluster of mezcal for Oaxaca is one of the productive activities of greater economic and social importance. According to the Ministry of Tourism and Economic Development of the Government of Oaxaca [23,24], the entity 2/3 of the total produced in Mexico mezcal produced. This cluster consists of 590 factories and 41,948 families belonging to 603 locations. Bill annually 115 million. Although the Government of Oaxaca in its National Development Plan (2011-2016) has considered the mezcal as one of the strategic sectors, in 2012 launched a project that was to integrate, formalize and develop the cluster of mezcal. The purpose was to improve the competitiveness of companies mezcal, because the mezcal in terms of market share, production, price and quality, not contained within spirits most important worldwide.

Theoretical framework

From a political and economic perspective, there has always been interest in studying the factors driving economic development. This subject has been discussed at different levels; in national [25], company level [26] and the regional [27], the latter level who is receiving increasing attention. Regionalist scientists have adopted the cluster concept as a means to transform the local reality, so in principle have identified these groups and have designed policies and strategies for improving the development of clusters [28].

The cluster concept is one possible modern descriptions that explain a phenomenon observed, at least in the last 100 years and talks about the territorial concentration of economic activities, concentration is believed, very widely, which is a factor important for economic development, territorial development, innovation and competitiveness. Porter [29] defines clusters as "geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries

and associated institutions (eg universities, standardization bodies, trade) associations in a particular field that compete but also cooperate "(p. 15). The author presents research supporting the idea that clusters emerge as efficient mode of production and which has spread to the design of industrial policies appears to be a central feature of advanced economies. In introducing the idea of clusters, Porter argues that industries become internationally competitive, generally, are not companies or sectors diverse and disconnected, but develop as clusters of complementary activities within the same territory. The cluster approach differs from the traditional policies of state promoting the creation of free zones or industrial parks, in the sense that they are not decisions or laboratory designs created by the government to lift a depressed area, but rather areas where detect any comparative advantage of its location and therefore have been gathering spontaneously related industries and embryonic form, these include native industries which are usually very small scale but with great potential because they start from a unique location advantage.

According to Porter [29], competitiveness cluster reflects the capabilities developed and the results of the companies that make up the cluster. These results characterize the ability possessed by the companies to obtain and maintain competitive advantage in terms of price, quality, internationalization, diversification, inter alia, that allows the cluster to achieve, sustain and improve a position in the socio-economic environment that develops. It points out that the competitive advantage of a cluster is the ability, resources, knowledge and attributes, etc., of those who have them and those who lack competitors or have a lesser extent, making it possible to obtain a higher yield to those. Successful clusters comparative advantages obtained through acts of innovation by incorporating new technologies or introducing new methods or new ways of doing things and taking advantage of and exploiting the commercial opportunities offered by the market. De Langen [9] explains that a cluster is not a population despite an entity characterized by the formation of networks, elements such as; heterogeneity, confidence, barriers, competition, etc., must be taken into account in the design and implementation of collective actions that contribute to the performance and success of clusters. The specific model of this research takes as a theoretical reference to the work on competitiveness and industrial clusters exposed by Porter [17,26]. In addition, it is complemented by proposals Andersson, et al. [30], Menzel and Fornahl (2007), Aranguren [31], Sánchez-Mondragon, M., Sesma, J. and Regional Development Group Tecnologico de Monterrey [32], Sölvell [7] and Aragon, et al. [10] studying same identification and genesis of clusters. Finally, for the analysis of performance cluster model exposed by De Langen is resumed [9,33] and Garcia-Martinez, B., González, R. Leal, F. [34], which considers the following variables and dimensions **(Figure 1)**.

According to De Langen [9], the performance of the cluster is the sum of value added generated by each of the members of the population, which does not imply that the companies grouped this core have to be more profitable than the rest companies, as high profitability in companies indicates a lack of competition and balanced participation of internal costs to the cluster, a condition that does not favor the performance of the cluster over time [35,36]. This author explains that while it is true the
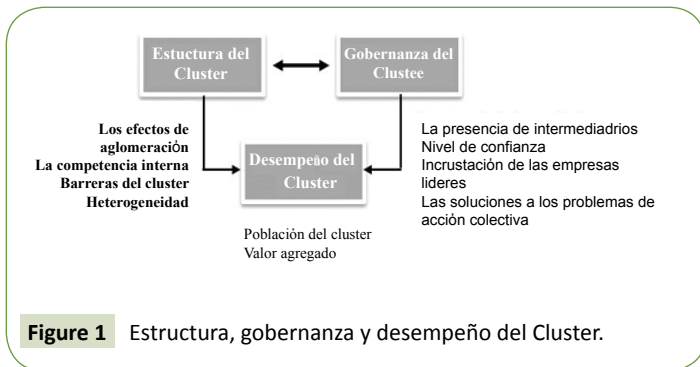
Figure 1 Estructura, gobernanza y desempeño del Cluster.

performance of the cluster shows the result of the action of various agents, behavior (governance) and structural elements (structure) present in the nature of the clusters, mediate the performance of clusters. The central theme of behavior in a cluster is the interaction of business and this interaction reflects the performance in terms of governance. On the other hand, the structure and governance of a cluster are interdependent. And this interdependence is largely related to the performance of the cluster, because in the structure influence aspects such as:

- Competition and internal cooperation, which promotes efficiency and is an important engine for growth and change.
- Agglomeration economies, same as external economies and are derived from an increase or reduction in the scale of production, depending on the overall development of the industry.
- Heterogeneity of the population, a condition that expresses the diversity of skills among smaller companies and large.
- Barriers cluster, understood these as barriers to entry, exit or to start a new business in a cluster.

Similarly, for governance this relationship between structure and performance lies in the performance of individual agents cluster because:

- A better presence of trust reduces coordination costs and increases the extent of coordination and reducing the risk of parasitism.
- The presence and involvement of leading companies generates positive externalities for companies in their network, mainly by innovation, promotion of internationalization, investment in infrastructure and human capital formation.
- Quality of collective action regimes, because a better contribution of the population cluster (business, government and support agencies) to an argument underpins community and the use of voice appropriately.

Studies have tried to agglomerations in particular, seen as generating economies of knowledge, labor, customers and suppliers, but not with a reference to agglomeration economies. In this regard, De Langen [9] explains that no work to study the conditions and factors inherent performance of the cluster, in order to understand the causes of inadequate involvement of customers and suppliers, of distrust between agents clusters, etc.

Competitiveness cluster as the dependent variable and independent variable performance cluster: Based on the

arguments of the literature reviewed a research model with the following variables is proposed. This model aims to contribute through the case study of mezcal, with performance analysis and the influence this has on their competitiveness. H1: the following hypothesis is proposed cluster performance impinges directly and positively on the competitiveness of the cluster of mezcal of the region of the Central Valleys of Oaxaca.

Methodology

This work corresponds to a (quantitative and qualitative) mixed research, cross-sectional, descriptive, correlational and explanatory type. The unit of analysis was the cluster of mezcal of the Central Valleys region of Oaxaca. During the period from August 2015 to November 65 polls, 50 of which were applied by means of questionnaires to representatives of mezcal companies and 15 through interviews with actors supporting the cluster of mezcal. Statistical analysis of the results of each index, was made using a bivariate correlation analysis Pearson (simple and multiple) linear regression.

Sample description

The sampling was non-probabilistic and the selection of the sample was determined to convenience, the stakeholder group support by all institutions and social organizations that annually invest resources in support of mezcal as is the Secretariat of Economy (SE) was integrated, the National Institute of Forestry, Agriculture and Livestock (INIFAP), the Regulatory Mexican Council of Mezcal AC Quality (COMERCAM), among others Para the selection of companies was necessary to consider two specific times ; the first was the characterization and geographical boundaries of the cluster of mezcal and the second in the selection of companies with competitive skills with potential to represent and formalize the cluster. These companies had to meet the following criteria:

Agglomeration process ; be a manufacturer or distributor of mezcal, be located in the region of the Central Valleys of Oaxaca, have at least 5 years of working as a company, produce mezcal permanently (at least one cycle each month), be duly constituted (Federal Taxpayer Registration) and work collaboratively with at least a supporting body and, a) competitive capabilities ; comply with NOM- 070, have export capacity, have a brand, have defined the product price/category/market, have communications infrastructure and basic services.

Once selected potential companies and stakeholders to support the cluster, the type of production was constructed, which, helped classify the general systems for the production of mezcal and design the following code: A composed of 23 companies and characterized by craft production with manual milling and distillation crock pot (earth oven, milling deck, fermentation in wooden vats and/or concrete, distillation crock pot), B composed of 19 companies and characterized by artisanal production system under traditional; earth oven or covered with stone, Chilean mill, fermentation in wooden vats, distillation in copper stills), C consists of eight companies and characterized by artisanal production under traditional system with technological innovations; oven coated stone, Chilean mill or wrenching use distillation alembic copper and/or steel fermentation vats

wood and/or plastic and use of gas) and D consists of 15 actors (civil servants, representatives of educational institutions and organizations business). The data were coded and analyzed using the Statistical Package for Social Sciences (SPSS version 19).

Treatment variables

For the construction of each dimension, measure and index the theoretical elements that best represent the concept of business competitiveness and industrial clusters were identified. To operationalize the variables, a questionnaire which facilitated the integration of first-hand information was designed; this allowed applying two indexes and obtaining a value for measuring the influence of performance on the competitiveness of the cluster.

Dependent variable: Competitiveness Cluster.

Cluster competitiveness index. Measures the ability that owns the whole enterprise of a cluster, expressed in the (market share, innovation, quality, etc.) competitive advantages that make it easier to achieve, sustain and improve a position in the socio-economic environment that develops.

ICCL=Cluster Competitiveness Index.

ICCL=SRCL+SPMCL+SCPCL+SLCCL+SICL+SCMACL.

SRCL=Profitability subscript Cluster.

SPMCL=subscript Market Share Cluster.

SCPCL=subscript Product Quality Cluster.

SLCCL=subscript Customer Loyalty Cluster.

SICL=subscript Innovation Cluster.

SCMACL=subscript Environmental Care Cluster.

Independent Variable: Performance Cluster.

Independent Variable: Performance Cluster.

IDCL=Cluster Performance Index.

IDCL=SECL+SGCL+SDECL.

SECL=subscript Cluster Structure.

SGCL=subscript Governance Cluster.

SDECL=subscript Economic Development Cluster.

The variables and indicators of the research model was quantitatively measured using the questionnaire with closed questions (ordinals), using the combination of Likert scales, as shown below: Strongly Disagree (1), Disagree (2), Ni disagree or agree (3) under (4) and strongly agree (5).

To determine the level of development of the cluster, in principle, it was necessary to construct a typology that would represent the main characteristics of cluster lifecycle of mezcal, see Table 1. Subsequently, this typology was incorporated through a closed question questionnaire the employer, which identified according to their perception of the level of development of the cluster of mezcal. **(Table 1)**

Results and Analysis

Characterization cluster

One of the main features of mezcal of Oaxaca, is the process of handicraft production, which has been transmitted from parents to children. For processing cultivated or wild agaves and other raw materials are used, it is presumed that during the process of fermentation and distillation no chemicals are added or substitutes (sugar cane, pineapple, brown sugar, etc.) are used, ensuring the production and consumption of natural mezcal and also according to the NOM. 070 categories hold 100 % agave. The general process for the preparation of mezcal integrates seven steps: 1) production or harvesting of agave, 2) wrought and carry maguey 3) baking, 4) grinding 5) fermentation, 6) distilled and 7) packaging.

The value chain of mezcal is directly associated with the planting or harvesting of agave, raw materials processing, distribution and consumption of mezcal. This chain as a whole integrates six main links:

1) Auxiliary industry (fertilizers, bottles, wooden vats, stills, breathalyzers, fillers, filters, etc.).
2) producers or harvesters of maguey (Agave angustifolia Haw, asperrima Jacobi Agave, Agave weberi Cels, Agave potatorum Zucc, among others).
3) Production of mezcal (factories with manual milling and distillation crock pot, factories and factories with traditional system traditional system with technological innovations).
4) Producers and/or packers mezcal (with hitching and private label or packaging maquila only).
5) Distributors (brand promoters, importer, supermarkets, specialty stores, etc.) and,
6) Points of sale and consumption (households, bars, nightclubs, mezcalerías, etc.).

The actions of coordination among actors in the chain are still emerging and are framed exclusively in the purchase of supplies on a consolidated or sporadic. Maguey producers represent the link with lower economic benefits, some of the causes attributed is the unwillingness to complete the purchase and agree a fair price. This has led to the increase of maguey in periods of scarcity. Mezcal producers represent the link that has managed to formalize partnerships with educational institutions and social organizations, such as; Benito Juarez Autonomous University of Oaxaca (UABJO), Mexican Council Regulatory Quality Mezcal (COMERCAM), State Committee of Sistema Producto Maguey Mezcal-(CESPMM), among others. Where it is worth noting that the COMERCAM is the only organization supporting the mezcal industry has economic autonomy, as the rest of the organizations are still dependent on government.
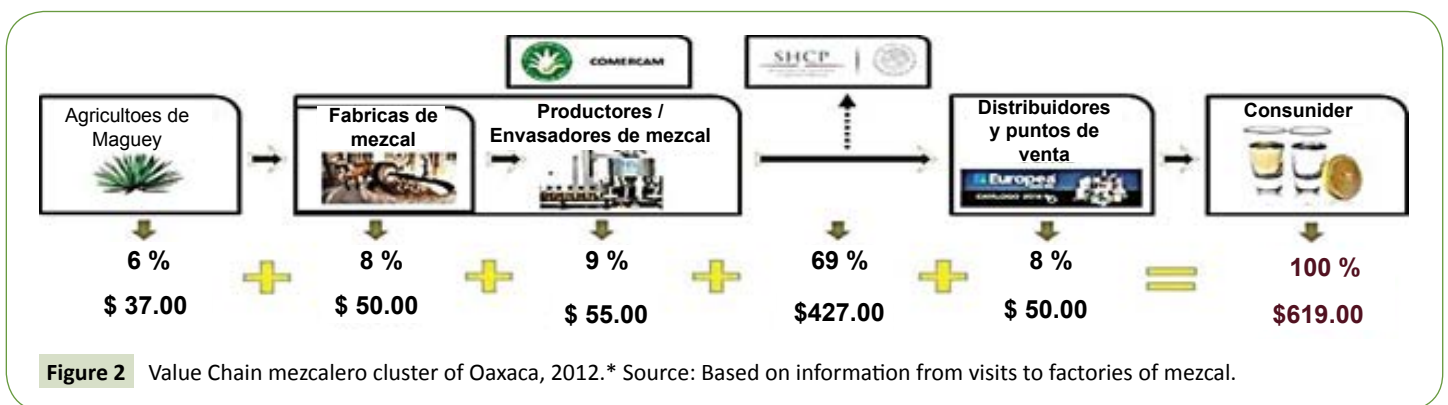
Greater integration and associativity between links in the production chain-mezcal maguey is between the producers-packers and distributors of mezcal. Currently it exists in Oaxaca a significant presence of national and foreign investors who have started a phenomenon of maquila, where the producer of mezcal is only responsible for delivering your product in bulk or packaged to prearranged mark. Distributor is the link that greater economic benefits obtained from the rest of the chain **(Figure 2)**.

Table 1 Typology of the main characteristics of the life cycle of a cluster.

stages	characteristics
Step 1. Agglomeration	* Weak cooperation between mezcal companies.
	* Almost no trust between companies
	* Machinery and inefficient for mezcal production technology.
	* Nula diversification of products and services.
	* Nula product certification (NOM 070).
	* Sales are at regional and state level (Central Valleys and Oaxaca) .
Step 2. Growth	+ Collaboration of institutions of state and federal government.
	+ Collaboration of universities and support agency (UABJO , ITO , ITVO , CIIDIR , others)
	+ Diversified products with a brand (young, Reposado, aged, creams and cocktails) .
	+ Certified Product (NOM 070 , organic and kosher)
	+ Sale at regional, state, national and international level (incipient) .
Stage 3. Development	* Strategic integration of companies (distribution and marketing in niche markets) .
	* Collaboration of government and institutions to improve and strengthen the business environment of the industry.
	* Techniques and sophisticated procedures in the production , distribution and marketing (e-business) .c
	* Further development of products for special editions and products with high added value.
	* Collective investment in research and infrastructure projects .
	* Sale to regional, state, national and international level (evolution).
Step 4. Maturity	+ Full productive integration between business, government and supporting institutions .
	+ Optimal levels of innovation, technological development and productivity.
	+ High demand for premium and super premium products.
	+ Suppliers and local traders with competitive prices internationally.
	+ Sale at regional, state, national and international level (sophisticated and high value-added products)
Step 5. Transformation	* Weakening of the main activity (production of mezcal).
	* EPrsencia of new national and international companies with high technology.
	* Processes and substitute products (steroids, biofuels, insulin, etc.) , focused on meeting new requirements of global market and higher value-added products .
Source: Prepared with information Andersson, et . tothe. (2004), Menzel and Fornahl (2007) and Sölvell (2009) .	

Agricultoes de Maguey	Fabricas de mezcal	Productores / Envasadores de mezcal		Distribuidores y puntos de venta	Consunider
6 %	8 %	9 %	69 %	8 %	100 %
$ 37.00	$ 50.00	$ 55.00	$427.00	$ 50.00	$619.00

Figure 2 Value Chain mezcalero cluster of Oaxaca, 2012.* Source: Based on information from visits to factories of mezcal.

In the state of Oaxaca, there is no formal organization under the figure of cluster. However, the story about the mezcal in the entity and the interpretation of the specialization index applied to the economic censuses of 2004 and 2009 reflect a concentration of companies producing mezcal mainly in the Central Valleys region of Oaxaca. In addition, this concentration of mezcal companies and suppliers of raw materials, constantly collaborating organizations and institutions to support the development of this economic activity, without necessarily being a formalized cluster, which allows defining spoken of a natural cluster associated with the mezcal production.

The genesis of the cluster of mezcal is associated with three fundamental aspects: the first has to do with the natural evolution of productive activity in Oaxaca and the conditions that generated this ancestral activity, to encourage the establishment of new businesses and organizations without the government intervention. The second aspect is associated with the progressive

allocation of production factors naturally also has the region such as ; agave, labor, land for cultivation, water, investment capital, technology infrastructure, etc. And the third aspect is part of the evolution of the economic benefits it has had activity as a whole. It is important to recognize that we are talking about an economic activity dating back over 200 years and there are several companies that have managed to overcome the threshold of the technical, financial and infrastructure.

According to the analysis of information obtained from the questionnaires and based on the typology of the main characteristics of the life cycle of a cluster, the results show that 87 % of employers surveyed consider that the cluster of mezcal of the region Valles Oaxaca plants are in the growth stage (stage 2).

Hypothesis testing

The research hypothesis of a type of work, which is presented as an early response to the problem of low competitiveness cluster of mezcal of the Central Valleys region of Oaxaca. a correlation bivariate Pearson was conducted to analyze the level of influence between the study variables and whether the following research hypothesis is true: H1: The performance of the cluster has a direct and positive impact on the competitiveness of the cluster of mezcal of the Region the Central Valleys of Oaxaca.

Pearson bivariate correlation showed that there is a positive and significant relationship between performance and competitiveness of the cluster (r=0.812, p ≤ 0.01), see **Table 2**.

A complementary bivariate Pearson correlation analysis was simple linear regression analysis. The results show that the coefficient of determination obtained in 66% explains the influence of the performance variable (independent) in the variable competitiveness cluster of mezcal as the dependent variable (r2=0.660, p ≤ 0.01), see **Table 3**.

To check on level of aspect ratio varying performance and competitiveness of the cluster, a second bivariate Pearson correlation, which is presented in **Table 4** was performed again.

It was identified that the profitability dimension was related positively and significantly with the dimensions : structure of the cluster (r=0.655, p ≤ 0.01) and economic performance of the cluster (r=0.697, p ≤ 0.01). Both results explain the way how integration and agent performance cluster have favored quality, innovation, design and image of products, generating customer satisfaction and strengthening the profitability of the business cluster. The results also help to understand why employers consider the mezcal as a business with favorable levels of profitability and as this productive activity has improved the living conditions of their families, as well as improving the infrastructure and equipping their factories.

The innovation dimension in the cluster was related positively and significantly with the economic performance of the cluster (r=0.625, p ≤ 0.01) dimension, this relationship explains the progress that mezcal companies have achieved in recent years regarding economic performance, partly it attributed to the introduction of more efficient equipment in the milling process, distillation and packaging of mezcal. In the cluster there are innovative companies that the last 10 years have been

Table 2 Pearson bivariate correlation between research variables.* ** The correlation is significant at the 0.01 level (bilateral).

	Media	Deviation typical	Performance Cluster	Competitiveness cluster
Performance Cluster	3.235	0.6151	1	
Competitiveness cluster	7.428	1.2000	0.812**	

Table 3 Simple linear regression between cluster performance and competitiveness of the cluster.

Competitiveness cluster	
Constant	2.300
R	.812
R²	.660
Durbin-Watson	1.818
F value	93.168
significance 0,000	

Source : Prepared based on the SPSS version 19 program , 2015.

characterized by work on specific segments, with promoters of product identity, improvements in quality, design, authoring products, among other things, creating a specialization in supply and product differentiation from the rest of mezcal. However, it is worth recognizing that there are still few cases where companies have decided to invest in innovation, for example, of the 50 companies selected in this research, only 3 of them permanently and has made innovation own actions. The rest (92%), acquires knowledge, equipment or tools already created and justifies no resources. They also note that hardly invest in collaboration with other companies, which helps explain the relationship between innovation and governance cluster (r=0.277, p ≤ 0.51), governance in the process of consolidation and even characterized by lack of trust, cooperation and partnership between actors in the cluster.

Other relationships between dimensions is important to note, is environmental care and governance of the cluster size, these relate positively and significantly (r=0.484, p ≤ 0.01), indicating that the governance or management form cluster considered today need to implement actions to help mitigate pollution problems liquids (slops) and solid waste (bagasse) which are becoming more severe in locations where factories producing mezcal are established.

It was identified that the participation dimension in the market positively and significantly associated with the dimension of economic performance cluster (r=0.744, p ≤ 0.01). This relationship explains that the economic performance of the cluster is favorable and that the productive framework has generated the conditions and capabilities to offer a mezcal with higher added value and in accordance with the requirements of national and international growth market.

Based on the results obtained in this research hypothesis is accepted, because there is a positive and significant relationship between performance and competitiveness of the cluster of mezcal of the Central Valleys region of Oaxaca (r=0.812, p ≤ 0.01). Complementary to the bivariate correlation Pearson, a multiple linear regression analysis was done to identify as the dimensions of the independent variable explains the dependent variable **Table 5**.

Table 4 Pearson bivariate correlation between dimensions of the research variables .

	Cluster structure	Governance cluster	economic performance cluster	Cluster Performance	Market share	Product Quality	Customer loyalty	Innovation in the cluster	Care for the environment
Cluster structure	1								
Governance cluster	.694**	1							
economic performance cluster	.784**	.569**	1						
Cluster Performance	.655**	.451**	.697**	1					
Market share	.652**	.319*	.744**	.534**	1				
Product Quality	.522**	.352*	.563**	.471**	.368**	1			
Customer loyalty	.534**	.475**	.524**	.436**	.386**	.463**	1		
Innovation in the cluster	.478**	0.277	.625**	.435**	.443**	.396**	.439**	1	
Care for the environment	.462**	.484**	.530**	0.276	0.277	.496**	0.236	.388**	1

**. The correlation is significant at the 0.01 level (bilateral).
*. The correlation is significant at the 0.05 level (bilateral).

Table 5 Multiple linear regression between cluster performance and competitiveness of the cluster.* Source : Prepared based on the SPSS version 19 program , 2015.

Competitiveness cluster	
Constant	1.489
Cluster structure	.770
Cluster governances	.551
economic performance cluster	.867
R	.879
R^2	.773
Durbin-Watson	1.947
F value	52.089
sIGNIFICANCE	0.000

As can be seen in the regression analysis of the performance of the cluster, specifically the structure, governance and performance of the cluster dimensions affect the competitiveness of the cluster of mezcal of Oaxaca Central Valleys Region. The structure of the cluster with value β=0.770, governance cluster with β=0.551 and economic performance of the cluster with β=0.867, p ≤ both significant at the.01 level.

CCM=β0+β1SECL+β2SGCL+β3SDECL.

CCM=1.489+0.770X1+0.551X2+0.867X3

Conclusion

The mezcal of Oaxaca Central Valleys region is an economic and social reality concocted more than two centuries ago. This productive activity today has the anatomical elements of an industrial cluster (company, government. Collaborating institutions, financial institutions and research community). Its genesis is not attributed to the implementation of policies and government projects rather talking about a natural cluster where its formation has been associated with both comparative

and competitive advantages, such as : the availability of natural resources, infrastructure, hand skilled, tacit knowledge work, among others, which have generated the attractiveness of the location of businesses.

In this research the relationship between performance and competitiveness of the cluster of mezcal of Oaxaca Central Valleys region was analyzed, variables and dimensions that influence the competitiveness of companies producing mezcal representing the cluster described. This research is based on the theories of cluster and business competitiveness, which, present empirical evidence confirming that industrial clusters revitalize the competitiveness of enterprises and help respond favorably to the economic environment of global competition that demands rapid changes in organizational structures companies.

The contribution of this research was the development of scales to measure the performance of the cluster of mezcal, generally these scales can be used in other industrial activities with necessary adjustments. Regarding the hypothesis, it is found that there is a positive and significant relationship between performance and competitiveness of the cluster of mezcal. This hypothesis is accepted because the performance impact for companies that represent the cluster, achieve to be competitive.

The research results coincide with those found by De Langen [9], which states that the effects generated by an agglomeration contribute to strengthening the competitiveness of a cluster because: a hand of shared work, knowledge, customers and suppliers favors the business environment and attracts companies to the cluster; greater confidence, commitment to intermediaries and firm behavior of the leading companies, generated as the resulting improvement in the quality of governance in the group; internal competition adds to the performance of the cluster, it encourages specialization and improved cluster from a perspective of how to address specialized market segments. The results of the survey show that 42% of employers considered

that the cluster of mezcal is at a level of growth (stage two). This condition explains the evolution of an activity based on the above factors lead production to an industry that begins to work in areas such as (water, land, labor, and others.); quality, innovation, cooperation, sophisticated demand and product identity.

Employers match that has been favorable engage in production and sale of mezcal. They also argue that competitiveness depends on the internal workings of their businesses, strategies and chosen markets. They emphasize that the way to compete has changed and this has led to the orientation of actions towards innovation, internationalization, quality and continuous improvement. They also recognize that support organizations and institutions have contributed in strengthening the cluster, however, not agree on a common agenda, generate fragmentation of the sector and resources. They also consider that it is necessary to work on an agenda that favors the creation of an environment of relationships based on trust, solidarity, cooperation, honesty, credibility, honesty and integrity between agents of the cluster.

In conclusion, the influence of the performance variable in the competitiveness cluster of mezcal is checked, this analysis reflects the conditions under which the set of characteristics and conditions inherent in the performance of the cluster and determine its global competitiveness, either in terms of exports, quality and price of products. The competitiveness cluster of mezcal of Oaxaca Central Valleys region, continues rooted in the comparative advantages offered by its local structure, despite the globalization of the economy. A change is displayed on the way to compete and this condition has generated in recent years creating competitive advantages in areas such as creating technology, critical mass, value added and product diversification.

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