

Automotive cluster in Coahuila

Clúster automotriz en Coahuila

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Abstract

In this article we all consider as the strongest automotive cluster in the country in the state of Coahuila and was formed as the automotive cluster in Coahuila through SIECCA CIDIAC and put the cluster model for one of the best at the country level.

Cluster, Automotive, Coahuila

Resumen

En este artículo todos consideramos como el clúster automotriz más fuerte del país en el estado de Coahuila y se formó como el clúster automotriz en Coahuila a través de SIECCA CIDIAC y poner el modelo de clúster para uno de los mejores a nivel país.

Clúster, Automotriz, Coahuila

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Introduction

Theory of automotive clusters

Cedillo-Campos, M.G. & Piña-Monarez, M.R. & Noriega-Morales, S.A. (2007). A study of the Mexican automotive industry in Saltillo Coahuila. Where the basis of the research is the competitiveness seen from the supply chain, which is totally dynamic, since the demand is not predictable and the markets are too competitive. The central point is that the interaction of suppliers generates competitive advantages by covering needs in a complementary and specialized way. These advantages are not permanent, so the relationship and interaction between suppliers must be dynamic, in order to anticipate or adapt to changes in the market by integrating into the supply chain.

Cedillo-Campos, M.G. & Sánchez-Garza, J. & Sánchez Ramírez, C. (2006). They clearly define the existence of two types of clusters, which they call:

- Survival cluster composed of third grade companies with opportunistic behavior, little capital and no innovation.
- Transnational Cluster, composed of car manufacturers, first level, and foreign suppliers, second level.

Klepper, S. (2007) Develops research to explain the development of the Detroit area and the automotive cluster on parameters different from the agglomeration theories described in other articles. He makes an econometric model of the different indicators, to demonstrate the hypotheses, the contribution to the research, to learn how Detroit, one of the traditional clusters in the USA, developed and the model applied for its explanation. It is observed that this is a cluster in which Porter's theory is not fulfilled, Klepper explains that this is basically due to its age.

Barnes J. Kaplinski R. (2000) determined that globalization and its effect on the South African domestic automotive sector was based on the following development paradigms:

- Sustained growth in the sector would depend on preserving fixed assets, developing technological capacity and increasing production by raising economic scales.

- International competition would allow for growth in the economic scales and technological development of local companies.

Reality and counter-arguments:

- Growth has been achieved through foreign investment and international production chains where technology is developed.
- The global environment is developing to generate agreements, treaties and organizations on the basis of trade openness and growth based on foreign investment.
- Technology is generated within the international production chain.
- Foreign investment, among other aspects, is attracted mainly by the human factor.

The automotive sector, and especially the auto parts sector of local entrepreneurs, has been oriented to highly competitive niche markets with mature technology, in spare parts for old used vehicles.

Mexico has 12 states in the country with vehicle assembly plants, but Coahuila is the only one with 3 assembly plants. Mexico is one of the countries that supplies auto parts to the United States.

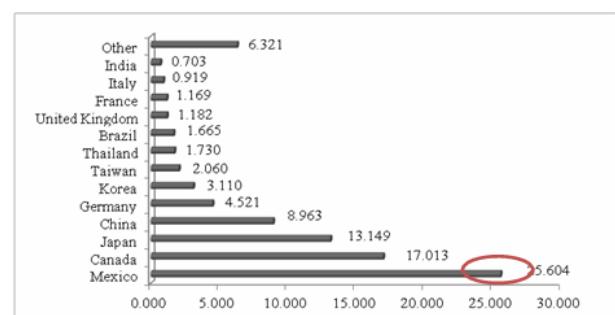


Figure 1

Imports of Auto Parts from EE UU

Although a couple of assembly plants have arrived in the center of the country, Coahuila continues to be the strongest automotive cluster in the country.

Automotive Cluster in Coahuila

The cluster is located in the Saltillo-Ramos Arizpe metropolitan area, in the southeastern region of the state, surrounded by productive infrastructure and industrial parks.

In this area are located 10 of the most important industrial parks in the state that support the development of the automotive industry. More than 300 auto parts manufacturers are located in the Saltillo - Ramos Arizpe metropolitan area alone.

Automotive Cluster of Coahuila



Figure 2

The automotive sector accounts for 37.8% of the state's GDP, and 25 out of every 100 automobiles in the country are produced in Coahuila.

Coahuila has 2 vehicle assembly plants and 1 dedicated to the manufacture of tractor trucks. 70 thousand jobs depend on the automotive industry in the region, for this reason it can be said that it is a key point for the generation of jobs in the state of Coahuila for this industry. More than 200 companies installed in the Saltillo-Ramos Arizpe area and 40 thousand direct jobs make up the auto parts industry in the state.

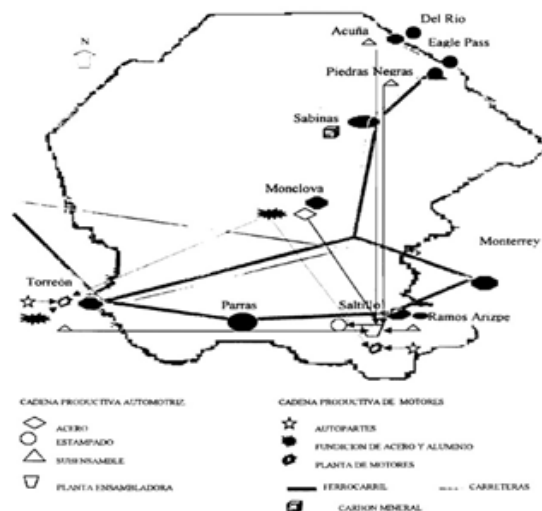


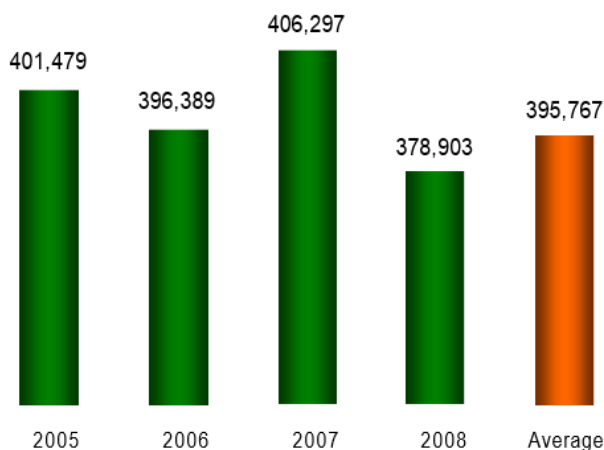
Figure 3

Production

Coahuila is one of the most representative states in the automotive industry.

400 thousand units per year and 25 out of every 100 automobiles are produced in the state of Coahuila. 27.9% of production corresponds to vehicle manufacturing.

72.1% to automobile and tractor-trailer assembly.



Graphic 1

Automotive production in Coahuila 2005-2008 (units).

The automotive products assembled in Coahuila are:



Figure 4

Competitiveness

The most outstanding competitiveness factors that support the automotive cluster are:

- Strategic location and significant access to global markets.
- Easy access to the main markets: to the North with the USA and Canada, to the East with Europe, to the West with Asia and to the South with South America.



Figure 5

Highly qualified human resources

First place nationally in manufacturing productivity.



Figure 6

- Competitive incentives applied to the industry.
- Wide availability of industrial parks: 52 industrial parks in the State.
- Suppliers with strong ties to the automotive sector.

- Adequate coordination between educational and research institutions and the automotive industry.
- Easily accessible road and rail infrastructure.
- Exceptional quality of life.
- Stable relationship with labor unions.

CIDIAC

Center for the Integration and Development of the Automotive Industry of Coahuila (CIDIAC)-Center for the Integration and Development of the Automotive Industry of Coahuila (CIDIAC)-Central node/cluster coordinator.

It was formally created on October 16, 2004.

Initial purposes of CIDIAC:



Figure 7

- Supplier development / increase of regional content.
- Mapping of the regional automotive cluster.
- Detect relevant projects to be developed.
- Find the most frequent needs of the sector.
- Designate the supplier that will solve the technological requirement.
- Conduct matchmaking events.
- Manage sources of financing and funding.

Operational difficulties and resurgence of CIDIAC:

As CIDIAC fell into operational problems and lack of involvement of key business actors, it ceased operations in 2006-2007. It was retaken by Canacintra and presented again just 8 years after its initial foundation in the event called "13th Meeting of Productive Chains", coincidentally on October 16. On this second occasion, CIDIAC seeks to be supported by a board of directors that is more committed and representative of the industry.

The approach of the new CIDIAC.

Mission: To promote the automotive supplier industry in Coahuila to have certified capacity in material, finished product and manufacturing process.

Vision: To be the strategic center of information and technical analysis that facilitates the integration of regional and national companies in the automotive sector.

Renewed CIDIAC objectives:

- Consolidation of the supplier development process.
- Human development based on an analysis of the need for technicians, engineers and professionals.
- Boosting the sustainable development of the automotive industry.
- Promotion of technology and innovation.

The SIECCA model.

Innovation System of the State of Coahuila for the Automotive Cluster. SIECCA is made up of Research Centers, Higher Education Institutions, CONACYT and the Government of the State of Coahuila, which provide infrastructure, technological capabilities, human and financial resources to support the automotive sector with technology, innovation, technological services and human resources training in the areas of Materials, Foundry, Metal Forming, Tooling, Plastics Transformation and Manufacturing Systems.

Mission: To contribute to the development of the companies that make up the Automotive Cluster of the State of Coahuila, by working together with them in the search for innovative solutions to their problems.

Vision: To consolidate as a technological partner of the companies of the Automotive Cluster of the State of Coahuila, through the effective and integral response to their requirements, in the areas of its competence.

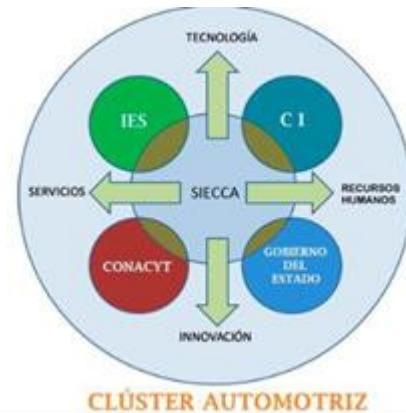


Figure 8

SIECCA Collaboration Model

Characteristics of SIECCA:

SIECCA is considered the Strategic Program of the State of Coahuila for the automotive cluster. It is inter-institutional and multi-stakeholder. In addition, it proposes specific actions in applied scientific and technological research, training of specialized human resources, as well as adoption, innovation, assimilation and technological development, seeking to find the best solutions to the challenges faced by the state's automotive industry.

The SIECCA seeks to meet a clear demand of the companies that make up the cluster, which is the formation of technological capabilities and human resources for the design of products and processes to compete globally. In this sense, and based on a previous study, this need was detected in three major areas for the automotive sector, which are:

Metal smelting.

Plastic transformation processes.

Metal forming.

Major Advances: INFRASTRUCTURE.

Design Unit and Forming Laboratory.

Laboratorio de Prototipos Rápidos, reorientado luego a un Centro de reparación de Tooling.

Dimensioning Laboratory.

Virtual room for product development simulation.

Design Unit and Foundry and Casting Laboratory. Properties Analysis Laboratory for Plastics.

Manufacturing cells laboratory, metrology, automotive manufacturing processes.

Diffractionmetry laboratory.

Conclusions

In conclusion, the automotive clusters determine that there are two elements that make up competitiveness and must be developed by third grade or survival cluster companies in order to integrate into production chains.

The analysis of the clusters reveals differences in the degree of specialization or integration with the productive chain that they achieve. Automotive clusters are still modest by international standards CIDIAC's work scheme allows for strict control and evaluation of the goals to be developed for each period. This is due to the fact that the Director is permanently accountable to the Committee entrusted by the Board of Directors. Likewise, the authority exercised in the Board by the main companies of the industry (as well as by the authorities of the economic development of the State and the country) and Funtec, allows concentrating efforts in the development of the same industry.

The state of Coahuila has a great automotive tradition and is a leading player in the production and export of vehicles as well as in the development of this industry.

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