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Journal Economic Development

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The works must be unpublished and refer to topics of trade, international economic activity, aspects of international trade and finance, international relations and international political economy, general aggregate models, quantitative approach, mixed approach and other topics related to Social Sciences.

Presentation of Content

In the first article we present *Local actors and their incipient integration in the automotive industry in Aguascalientes. The case of glove washers*, by ESCOBEDO-TORRES, Cecilia & COTA-YÁÑEZ, Rosario, with adscription in the Universidad de Guadalajara, with a second article, *Economic evaluation of the transformation of a residential property into an Airbnb type property*, by MORENO-MARTÍNEZ, Viridiana, MORENO-MARTÍNEZ, Tonatiuh, PALACIOS-HERNÁNDEZ, Otoniel and MORENO-MARTÍNEZ, Jatziri Yunuén, with secondment in Universidad de Guanajuato and Universidad de Durango, as third article we present *Support to MSME in a municipality of Puebla, Mexico*, by IRIGOYEN-ARROYO, Luis Ernesto, with affiliation at the Tecnológico Nacional de México, campus San Martín Texmelucan, as fourth article we present *Functions of the customs tariff in Mexico; 28 years after Marrakesh*, by MORENO-YEBRA, Felipe, with adscription at the Universidad de Guanajuato.

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Local actors and their incipient integration in the automotive industry in Aguascalientes. The case of glove washers

Los actores locales y su incipiente integración en la industria automotriz de Aguascalientes. El caso de los lavadores de guantes

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Abstract

The objective of this article is to explain the integration of glove washers within the local productive system, how the association between micro and small suppliers occurs and the networks they weave from their integration with the automotive industry, as well as the role played by governmental and non-governmental institutions in the local productive fabric. The underlying hypothesis is that the integration of local companies with transnational capital is minimal. There are companies established in the area, but their integration is not properly constituted with local capital. The case of studying the glove washers arises from the need to visualize those actors that do not play a leading role in the assembly of cars but do have a fundamental participation, although they generate very little added value, but their importance is unavoidable. For the methodological process, a semi-structured interview and non-participant observation were used. Five surveys were applied to managers or owners of companies specializing in glove washing in the locality. Interviews were also conducted with four types of actors: glove washers, managers of subcontracting service companies and representatives of Tier 1 and Tier 2 companies, until the categories were exhausted. The sample is qualitative and representative. The particularity is the non-existence of a specific classification for this type of activity. According to the informants, there are 60 industrial laundries in the State, but only 10 are registered with the Tax Administration System and SEMARNAT. However, upon corroborating the SEMARNAT: Registro de generadores de residuos del Estado de Aguascalientes (Registry of waste generators in the State of Aguascalientes), only three establishments were found: Ricardo Xicotécatl Vega Jasso; LP. Confección y lavado, S.A. de C.V. (located in Aguascalientes) and Lescen, S.A. de C.V. (located in Jesús María). To operationalize the variables through the semi-structured interviews, discourse analysis was applied as a technique. Information was obtained on three aspects inherent to local development: trust, cooperation and competition, as well as expectations and the role of the government.

Local development, Glove washers, Automotive industry, SMEs, Case study

Resumen

El objetivo de este artículo es explicar la integración de las lavadoras de guantes dentro del sistema productivo local, cómo se produce la asociación entre micro y pequeños proveedores y las redes que tejen a partir de su integración con la industria automotriz, así como el papel que juegan las instituciones gubernamentales y no gubernamentales en el tejido productivo local. La hipótesis que subyace es que la integración de las empresas locales con el capital transnacional es mínima. Hay empresas establecidas en la zona, pero su integración no está debidamente constituida con el capital local. El caso del estudio de las lavadoras de guantes surge de la necesidad de visualizar a aquellos actores que no tienen un papel protagónico en el ensamblaje de los automóviles pero sí una participación fundamental, aunque generan muy poco valor agregado, pero su importancia es ineludible. Para el proceso metodológico se utilizó la entrevista semiestructurada y la observación no participante. Se aplicaron cinco encuestas a gerentes o propietarios de empresas especializadas en el lavado de guantes en la localidad. También se realizaron entrevistas a cuatro tipos de actores: lavadores de guantes, gerentes de empresas de servicios de subcontratación y representantes de empresas de nivel 1 y 2, hasta agotar las categorías. La muestra es cualitativa y representativa. La particularidad es la inexistencia de una clasificación específica para este tipo de actividad. Según los informantes, existen 60 lavanderías industriales en el Estado, pero sólo 10 están registradas en el Sistema de Administración Tributaria y en la SEMARNAT. Sin embargo, al corroborar la SEMARNAT: Registro de generadores de residuos del Estado de Aguascalientes, sólo se encontraron tres establecimientos: Ricardo Xicotécatl Vega Jasso; LP. Confección y lavado, S.A. de C.V. (ubicado en Aguascalientes) y Lescen, S.A. de C.V. (ubicado en Jesús María). Para operacionalizar las variables a través de las entrevistas semiestructuradas, se aplicó como técnica el análisis del discurso. Se obtuvo información sobre tres aspectos inherentes al desarrollo local: la confianza, la cooperación y la competencia, así como las expectativas y el papel del gobierno.

Desarrollo local, Lavadores de guantes, Industria del automóvil, PYME, Estudio de caso

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Introduction

Analyzing discourses is a trend that has gained significant acceptance in the Social Sciences. The conviction of considering it useful to read discourses in order to interpret social reality is directly related to the discursive turn, which proposes a new and alternative perspective to that of the philosophy of consciousness with respect to the objects of study and the objectification of what is known. It could be said that with the discursive turn we move from a paradigm that placed ideas and rational introspection at the center of the observation more attached to reality. These discourses, in addition and unlike ideas, are observable and, therefore, constitute a more accurate empirical basis.

Regarding the observation of spaces, tours were made with a previous observation guide and information was collected directly from the supplier companies on forms of organization, hierarchies, leadership processes, frequency of interactions, characteristics of groups, key actors, leaders and decision-makers, forms of product sales for Nissan and purchase of inputs for its production. The analysis of documents allowed finding the forms of articulation of interdependencies between the different actors in Aguascalientes such as Nissan, government and suppliers, the bases of the design of the industrial and institutional policy of the state in accordance with local development.

The case study was considered as a kind of design to be used with which quantitative, qualitative or mixed research processes deeply analyze a unit to respond to the problem statement and develop some theory. In this topic, the case study was used to distinguish and select the key actors. A distinction was made between the supply chain and Nissan's indirect third-level service providers, whose characteristics were defined in terms of the form and type of service they offer. The units of analysis that were included in this study are those referring to industrial and institutional groups, in a first approach. These represent groups of people interacting for an extended period, who are linked to each other by a goal.

The procedure to complete the sample of suppliers and government informants was as follows: "gatekeepers" were the product of close personal social networks, which had the function of approaching the key actors who collaborate in the network of the most important suppliers for Nissan and who are based in the state. The latter have the role of sponsors, since they were used to form the final sample for the project.

The document is structured in three sections: the first one discusses the main postulates regarding local development and its implications through the introduction of transnational activities. Subsequently, the public policies that revolve around the dynamic activity are visualized and, finally, the participation of the glove washers is contextualized in terms of the role they play in the productive framework of the leading company, in this case the automotive company NISSAN.

Theoretical framework. The local productive system and public policies

Local development is framed within the prevailing conditions of each place, be they physical, economic, political, cultural or environmental. Therefore, the concept is not applicable in a generalized manner. It requires particular analysis taking into account the dimension of the problem in its own context and the time in which it develops and involves various aspects that converge at a turning point.

It is possible to find integrating concepts such as that of Cravacuore et al (2004), who defines it as a construction of a set of alternative networks to those of the market and those centered on the State. These relationships need to be configured at a broad level of agreements and commitments between private and public actors, whose actions and omissions condition the territorial dynamics of development, determining for each site a particular configuration and assuming that in every local process the visions, demands and expectations that the strategic actors bring to the negotiation arena are categorical in the articulation and definition of the policies to be implemented. The extraterritorial component should be included here.

This is framed by globalization, which is emerging as the phenomenon that transmutes the processes that can condition the particularities of the regions. In view of the imminent presence of dynamic companies such as the automotive industry, this is considered a globalized industry since in many cases it requires various components with high added value. And of services in two dimensions: highly specialized and others not so much, the latter being those that could be provided by small and medium-sized companies located in the localities where the foreign direct investment is located.

Globalization has widened space, as mentioned by Beck (2000), which implies an increase in the density of exchange in the global financial market and in the power of multinationals and, on the other hand, the information revolution and communication technology has led to a shrinking of space. This means that a delimited local event tends to affect the whole world, forming a local-global link; globalization is thus a process that creates links in transnational social spaces. Its dimensions are greater space, stability in time and social density in its networks of local and global relations.

Therefore, "the local" is a concept relative to a broader dimension. It cannot be analyzed without reference to the broader space in which it is integrated. They interact in such a way that the global. It does not replace the local, but each takes on the role that corresponds to it in the spatial dimension in which it is immersed. The local, then, is the subnational entity of analysis, planning and action for development, which implies a series of common relationships, behaviors, patterns and conventions. The municipality is usually placed as the natural agent of development; others prefer to speak of "local society". This concept is therefore a construction based on the characteristics of its behavioral dynamics. It is a coming and going of external events and how they affect the interior.

There are several attributes that confer a positive perspective to the term globalization, among those who consider it as a factor that favors the promotion of local development through accessibility to opt for the commercialization of local products and services, access to information and attraction of investments that, in turn, exert a multiplying effect on the local economy.

The cities are the ideal place for interactions, constituting attractive poles for investments that companies take advantage of through the economies of agglomeration and scale that are available.

While different conceptions have been reached on local development, it has been reflected upon as a process of growth and structural change leading to an improvement in the standard of living of the local population (Vázquez-Barquero, 1999; 2000; Albuquerque, 2003), which contains collective learning processes that allow it to respond to changes through labor mobility in the local market, exchanges of product, process, organizational and marketing technology, the provision of specialized services, information flows of all kinds or the strategies of the actors.

Thus, local development includes a socio-political strategy of change that must be approached simultaneously from the processes of local economic development, government institutions and social capital. In addition, Boisier (1999) argues that local development is a permanent and massive decision-making process of local actors and requires horizontal coordination networks. This implies the interaction of governmental, social and productive forces in a local context, but related to a global productive scenario. The concentration of all the elements, as well as the promotion through local policies and history, propitiates the impulse towards the creation of creative innovative elements in the productive and entrepreneurial sphere.

Local development depends on the degree of articulation within the local socio-economic base. This considers the demands posed by the structural change from "Fordist" forms of production to forms of production based on the incorporation of knowledge on market segmentation, quality and differentiation of the productive offer and improvement of territorial networks of support for production and cooperation of local public and private actors (Albuquerque, 2003).

A meticulous analysis should consider the fundamental elements that Albuquerque (2004) and Arocena (2002) suggest should be integrated as basic elements of local development initiatives, such as the proactive attitude of local government, elaboration of a territorial development strategy, promotion of micro-enterprises and SMEs, coordination of programs and the fragility of these initiatives, which can be identified by the absence or weakness of any of these components.

These actions must be developed by the local actors themselves in order to establish a scaffolding of common interactions that give them identity, creating a culture of cooperation-competition: everyone participates in one way or another for the benefit of a collective that in turn fosters new forms of support.

The design of local development policy through the automotive industry

The challenge for local governments is focused on finding answers to capital mobility, territorial reconfiguration and new forms of flexible accumulation, as Vázquez-Barquero (1999) points out, stating that local development processes are the result of a strategy emanating from within the territories through local entrepreneurship, business creativity and employment-oriented policies. In itself, through the integration of public and private actors.

Keeping the community active and the existence of strong cultural identities led to the search for locally controlled processes, what Arocena (2002) calls "from the cultural to the economic" where "the need to create wealth and the need to safeguard natural resources converge; the urgency to generate jobs and the urgency to respond to the needs of the population". The answers are given and acquire new forms according to the situation, place, type of organization.

Mexico in the product/employment ratio is placed next to highly productive countries, but the difference with South Korea, Japan and Germany are the asymmetries valued through the high technological level and growing per capita income. Currently, the development of the automotive industry in Mexico is manifested through the investment of Japanese and German firms, consolidating clusters.

Labor competitiveness with technological learning and the expansion of demand in the most dynamic regions are key elements to understand the development of the industry (Basurto, 2013).

Everything seems to indicate that government institutions are betting on the automotive sector for local development, especially in Aguascalientes, which although it has generated benefits, it also implies the generation of high levels of pollution, economic costs and social risks that are just beginning to be identified. Regarding labor resources, the growth of investments, companies and jobs in this industry, far from promoting the improvement and uniformity of workers' income, has been greatly depressing and dispersing them. It is a situation that accompanies the fragmentation of labor and union relations in the sector, while making them more complex (Covarrubias, 2014).

Vázquez-Barquero (2000) argues that it is important to find an explanation of how the political-administrative part has supported the conception of local development. In the case of Aguascalientes, at least from the presence of the automotive sector, in the specific project of Nissan, how was local development conceived? The local level is placed as the main level for the search of convergence between economic objectives and those related to citizenship, increase of popular participation and improvement of quality of life. There is a call for development policies to be designed and adopted at the local level, and the search for social justice and a better quality of life would be united and superimposed on the objectives of economic growth.

Of all these aspects, the one that is most related to Nissan's presence in the state would be the economic objectives, given that the governmental discourse is always focused on the search to position the state as the most productive, without putting the well-being of the citizens first and, in the understanding of local development, they should go hand in hand.

In view of this accumulation of theoretical observations on what local development is, its guidelines and how to achieve it, specific questions remain: What are the main public policies to strengthen the economic growth of the territory? In order to be complete, a public policy must contain planning, programming, budgeting and evaluation. What is the role of the state government in relation to policy intervention in local development aimed at the automotive industry?

To understand what kind of development has been planned by the Government of the State of Aguascalientes in terms of policy design for productive development focused on the automotive sector, the State Development Plan 2004-2010, government report of the same period and State Government Plan 2010-2016 and partial government report of the current administration were inquired in order to know the design of these policies.

In the 2004-2010 State Development Plan, the Government proposed to generate and define projects aimed at the development of economic activities and only reached the elaboration of the State Urban Development Program, where the decentralization of the concentration of social and economic activities in the metropolitan area of Aguascalientes was proposed. Three objectives were proposed: a) to promote competitiveness and technological development; b) to develop innovative financing mechanisms and guarantees for the modernization of MSMEs; and c) to promote a policy of entrepreneurial culture in MSMEs.

As a result, 22 new companies were set up with the support of the Program for the Development of the Software Industry PROSOFT, with an investment of 200 million pesos, which in turn generated 10,000 high value-added jobs, but it is not specified in which companies. High value-added products were exported, from hardware to software. Of note were 2 billion microchips for cell phones from Flextronics and Sensata for the automotive, aeronautical and medical sectors. We promoted the creation of a cluster policy for the automotive and auto parts industry in collaboration with international organizations (FOMAUTO), in the electrical and electronics industry (CELESA) as well as in innovation technologies (INNOVATIA).

Creation of the Aguascalientes Robotics and Automation cluster. Support for MSMEs was capitalized through regulatory improvement, reduction of administrative procedures, low-cost financing, training and positioning of own brands.

Investment increased: there were 349 investments of more than one million dollars, of which 248 were newly created and 101 were expanded, for a total of 4.4 billion dollars, which was reflected in the creation of 56,000 jobs. NISSAN Mexico and Jatco Mexico invested 1.1 billion dollars.

It was not until the following 2010-2016 administration that they reconsidered a similar project to achieve leadership in planning. The project crystallized until 2013 with the publication of planning instruments and was linked to the state territorial and environmental planning systems. What happened? Planning without linking it to the innovation industry? Or in any case, when planning, what type of productive branch was being thought of? What type of development are we talking about?

In the 2010-2016 state development plan, the Government proposed to consolidate corridors of economic and social activities communicated through an efficient system by consolidating the automotive, metal-mechanic, electronics, textile and clothing industries in a specific space (Peñuelas-Cosío corridor). The result was the modernization of highways and works in industrial parks that placed Aguascalientes, according to the Government, in a regional logistics center for the manufacture, distribution and export of new automobiles.

Among the results, emphasis is given to job creation and investment in the automotive sector. For example: the Tachi-S DSP plant began operations with an investment of 143 million pesos and the generation of 700 jobs, which is dedicated to the manufacture of front and rear seats for Nissan and Honda vehicles and will be a supplier of the "JIT" and "PIVA" plants. Several companies were inaugurated: Distribuidora Volvo, with an investment of 26 million pesos; the third plant Cables de K&S Mexicana, with an investment of 182 million pesos, which represents the generation of 104 new permanent jobs; Shoshiba has as its main activity the stampings for air bags and seats and will supply its different customers, such as Tachi-S, Honda, Calsonic Kansei, Takata and Sumitomo Electric; Riken, which is mainly dedicated to the manufacture of piston rings, valves and valve seats, with an Investment of 30 million dollars. This company will generate 200 new direct jobs.

It was proposed to continue supporting micro and small industries in order to promote and strengthen the value chain through local supply, as well as to establish training programs for entrepreneurs. However, there are no results in these areas. It seems that economic policy is mainly focused on attracting foreign capital, which in reality function as an enclave, since the local benefit is only reflected in the creation of jobs and minimal income for local MSMEs.

In this same 2010-2016 administration, it was proposed to position Aguascalientes in the regional context as a knowledge center that would project it as the best educational option in the region. The Japan International Cooperation Agency recognized the school-business linkage model at a national level. It is expected to be a model for all Japanese automotive companies.

An incipient symbiosis between the culture of origin of the main companies is beginning to be observed in the locality. Capital and socio-cultural aspects converge in a transnational space. In the tour of the main avenues of Aguascalientes, sociocultural aspects were observed that were not present 10 years ago. For example, the Alameda promenade was designed to transit between huge trees and there were benches for people to allow themselves to interact.

At least between 2016 and 2018 the spaces were transformed, in such a way that, depending on the season of the year, changes are observed where people coexist with Japanese designs such as figures of lights, small trees designed with paper and metal material that evoke Christmas, but do not represent any essence related to the hydrocalides scenarios, which are alien to this culture. There is a wall where children can interact by moving plastic pieces of Japanese design. In the spring, some paper plants are placed, which again obey the designs of this country.

Little by little, spaces ceded by the State are being located for the exhibition of figures that do not belong to the State. This does not affect socialization, but rather the population identifies less with its own culture and scenarios and more with those of the Japanese country.

Undoubtedly, the Government of Aguascalientes has always contemplated, in one way or another, to include local development, since this is dictated by national guidelines and suggested at the international level within the design of governmental policies. However, the industrial development process in the state of Aguascalientes lacks an articulated, consensual and lasting public policy on industrial development.

There is also no programming and articulation between the different industrial sectors and branches that would allow productive linkages in which local companies participate. Although the establishment of industrial companies increased the levels of investment, production and employment, it did not raise the wages of the working class, so it cannot be said that regional development has been achieved.

More questions remain unanswered than answered: are the companies that exist in the state, in any case SMEs operating in the state, able to link up with the automotive industry and thus achieve local development? How does the state government support SMEs so that they can participate and link up with large companies and thus achieve local development?

The integration of glove washers into the local dynamizing industry

The concept of productive networks confers two guidelines: local and international. Albuquerque (2003), Camagni (1991) and Arocena (2002) coincide in highlighting the importance of the interaction between institutions and agents emanating from the place itself in the creation of the local environment. The creative capacity of companies, through their adaptability to different scenarios, creates the phenomenon of collective efficiency, which can generate a competitive advantage in the face of external economic scenarios.

The direct supplier companies for the automotive industry located in the state of Aguascalientes, according to activity, supply the productive structure as required, given that these companies not only supply Nissan but also other automakers. They are located along the Pan-American Highway that runs from north to south of the state of Aguascalientes. They are concentrated within the industrial parks shown on the map (see Figure 1).

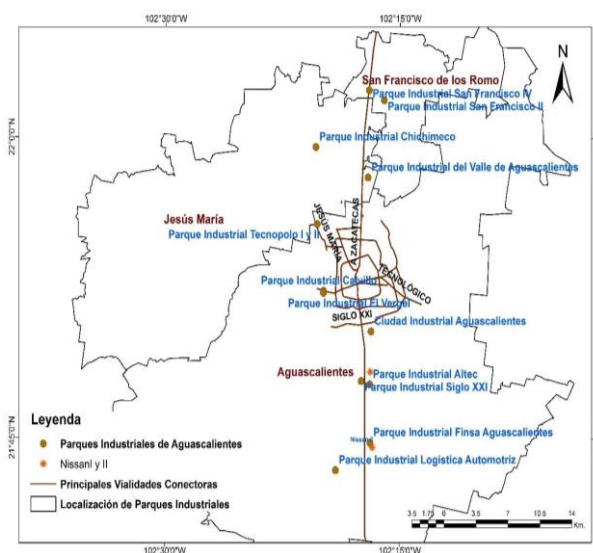


Figure 1 Location of companies supplying parts for Nissan I and II

Source: Own elaboration with data from INEGI. Census 2010

Nissan's supply chain includes an organization called Tier 1, which is responsible for supplying complete parts (suspensions, transmissions, steering). Tier 2 and 3 are responsible for supplying different inputs and parts for the manufacture of complete parts (see Figure 2).

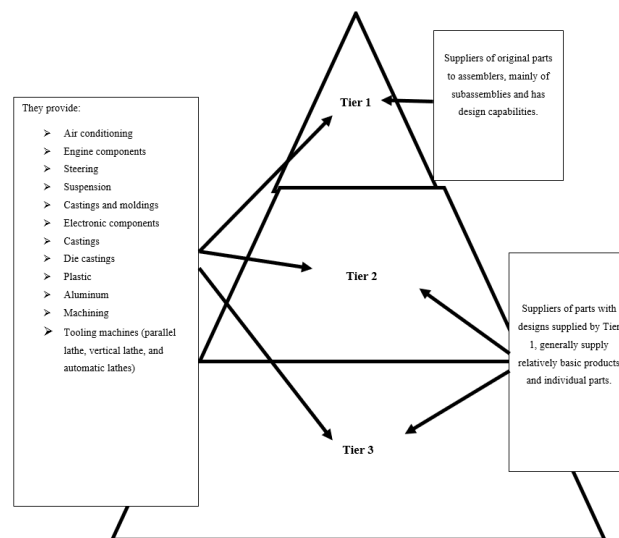


Figure 2 The supply structure for Nissan

Source: Own elaboration with data from: Ministry of Economy. 2013. "La industria automotriz mexicana"

In fact, Nissan's relationship with suppliers is only direct with Tier 1 because they receive complete parts for the assembly of the car. With Tier 2 and 3 the relationship is indirect because the latter only work directly with Tier 1 and not with Nissan. This is the beginning of the supply chain. These companies are located in different points in the state of Aguascalientes.

The automotive industry in general requires, for the manufacture of vehicles, the participation in the supply of different industries according to their activity, such as those shown in the diagram. In the case of Nissan, it also needs suppliers from these companies, which are located in Aguascalientes. The processes carried out by these companies are of low added value compared to the final product required by the large company. Each of these activities has different companies that supply different services and products, which are not among Nissan's large direct suppliers, but are indirect suppliers (see Figure 3). These companies supply products that are required to manufacture complete parts.

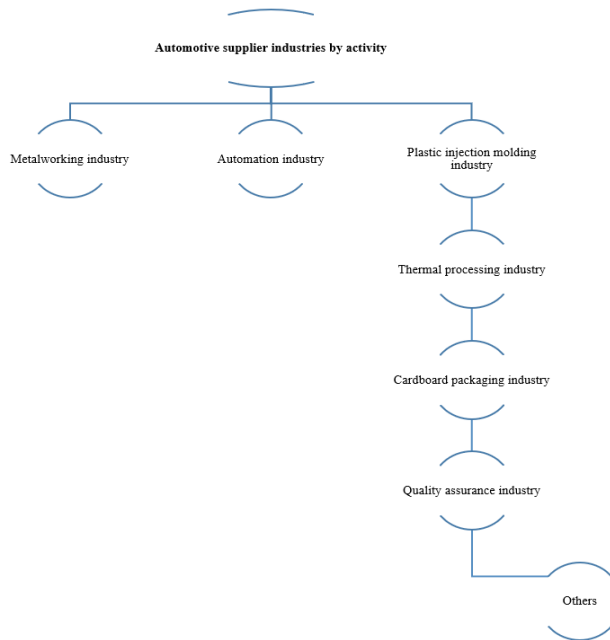


Figure 3

Even though Nissan has changed from one type of production to another, i.e., from the manufacture of parts to the assembly of automobiles, it has always required safety equipment for its workers, so among the service providers, those who persisted in the face of the changes were selected. These are the glove washers, who wash and deliver gloves for Nissan's direct suppliers that are locally based and invested (see Figure 4). They are not part of the large Tier 1 companies, which supply complete parts to the transnational. Nor are they part of Tier 2 and 3, but they do provide gloves for workers at these three levels. Some work directly with these companies and others work through other transnational service providers.

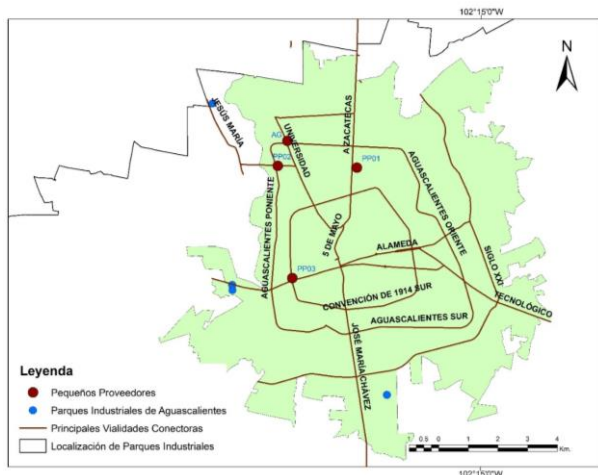


Figure 4 Location of glove-washing SMEs

Source: Own elaboration with data from INEGI. Census 2010

The interrelationship mechanism that these small entrepreneurs have is the provision of indirect services to the automotive industry, specifically to the Nissan I and II plants. The emergence of this type of service has many elements in common: they all worked at NISSAN; they already owned a laundry; the provision of the service is relatively recently created and they did not have experience in glove washing; they do not have family ties within the sector; they have between 10 and 15 years of having started activities, none of them have a kinship (they are only close friends because this activity has made them coincide); They do not use banking institutions because of the high interest costs, and they have been acquiring training in the management of washing through the transmission of empirical knowledge through trial and error, which they then incorporate as an added value in the provision of the service.

In the words of the glove washers, the mechanisms of interrelation began with the history of the construction of this productive network. The first of the interviewees and pioneer of this productive activity, currently owner of an industrial laundry, related that he first worked at Nissan I, left and then joined a laundry that only washed denim. There he learned about waste management, industrial soaps and fabric treatment. He was then approached by an automotive seating company to ask for glove washing. He took care of them on behalf of the laundry he worked for. This one had too much work with denim washing, so he followed up with the firm for glove washing and, further on and being in the same industrial laundry business, he found out that a laundry had "gone bankrupt" and they were selling their machines. He was "entrusted" with them and little by little he was paying for them with the profitability of his business and that is how the business started in 1995¹. Later, and with the portfolio of clients he had already gathered with the seating company, he got in touch with two of the other interviewees, Lavanderías Camacho² and Lavanderías Poseidones³.

¹ Interviewee number 1. Glove washer and laundry owner.

² Interviewee number 2. Lavanderías Camacho, which started in 2003.

³ Interviewee number 3. Lavanderías Poseidones, which started in 2014.

The use of gloves in the automotive industry is currently gaining relevance. Previously, the glove washing activity was not so important due to the management of quality standards. Workers could take the uniform along with the gloves home and wash them, but nowadays gloves may only last one shift because there are gloves with burrs or residues (Figure 5).



Figure 5 Gloves laundered to required quality standards
Source: The purpose of this image, was to show the change between a dirty glove used by company workers, and one already washed in their own laundry, you can see the quality of washing that are required to be able to access the work of washing them. The interviewee referred that, in order to reach these results, several washing tests are made and shown to the customer until they are certified. March 28, 2018.

Their use is indispensable for the prevention of accidents resulting from the handling of sharp tools or materials, cutting edges, metal shavings, certain blows and other physical hazards. There are different types of gloves made of various materials adaptable to the requirements of occupational health and safety standards.

Depending on the type of material, different types of gloves can be used. For handling rough or sharp-edged materials, they can be made of leather or canvas. In welding or foundry work where there is a risk of burns with incandescent material, the gloves must be heat resistant and insulating. In electrical work with insulating material. When handling chemical substances, the use of long rubber or neoprene gloves is recommended.

Safety gloves must be worn by all company personnel, whether production or supervisory, who are exposed to the risks listed above. One third of industrial accidents involve the fingers, hands and arms. Due to the great vulnerability of fingers and hands because of their constant action on tools, machines and elements, they require continuous protection.

Depending on the use of each type of glove, it is decided whether to replace them or clean and reuse them. There are gloves that last up to sixty washes, which are antistatic, used for assembly or final inspection. There are seven or eight types of gloves: welding, stippling, assembly, machining, assembly and quality gloves. The businesses that sell gloves are microenterprises that have often expanded their business offerings, ranging from 0 to 5 workers, and have been in business since the 1990s (see Table 1).

Company	Staff employed	Activity type code
Glove factory	6 to 10 people	316999
Unnamed glove factory	0 to 5 people	315999
Guantes Canito	0 to 5 people	316999
Guantes Guerrero	0 to 5 people	316999
Guantes Industriales del Centro, S. De R.L. Mi	6 to 10 people	316999
Guantes Industriales EPPI	11 to 30 people	316999
Guantes Industriales RC	6 to 10 people	316999
Guantes Industriales Rodríguez	0 to 5 people	315999
Guantes Industriales Salas	0 to 5 people	316999
Guantes LI	0 to 5 people	316999
Guantes Vargas	101 to 250 people	316999
Unnamed glove manufacturing	0 to 5 people	315229
Industrial Gloves and Safety Equipment Production (Suministros Industriales Faves, S. De R.L. de C.V.)	0 to 5 people	316999
Industrial Glove Manufacturing Workshop No Name	6 to 10 people	316999
No Name Glove Workshop	0 to 5 people	461110
PROTEGGA	0 to 5 people	435419

Table 1 Glove Manufacturers Currently Established in Aguascalientes

Source: Own elaboration based on DENEUE: <https://www.inegi.org.mx/app/mapa/denue/>

Code of activity type:

- 435419: Wholesale of other general-purpose machinery and equipment.
- 316999: Manufacture of other leather, fur and leather substitute products.
- 315999: Manufacture of other wearing apparel and accessories not elsewhere classified.

- 315229: Manufacture in series of other outerwear of textile materials.
- 461110: Retail sale in grocery stores, grocers and miscellaneous stores.

On average, the glove washers employ between 5 and 15 workers. These workers earn between 1,000 and 1,800 pesos per week; their contracts are for an indefinite period of time, they are hired directly by the company owners, and they receive legal benefits. In order for these workers to be able to work in these companies, they are trained in the use of machinery and the handling of chemicals.

The main benefit of these glove washers is the client network they establish, in which they not only wash gloves, but also provide their services to different companies, both for the automotive industry and for others who request their services, such as clubs and ranches, for the washing of towels, uniforms and other types of fabrics, for example. If this service is not provided then they diversify their activities with the industrial maquila, as does the pioneer of glove washing based in the state of Aguascalientes.

For local development to really take root among the glove washers and bear fruit in the state, committed government participation is needed. For example, that the courses offered by the Chamber of Commerce are directed to the businessmen of this line of business, so that they are registered as a portfolio of clients for the growing industry that is the automotive industry, but also for other types of industry. This would also offer these small businessmen the possibility of accessing knowledge and financing for other types of machinery to help them respond more quickly and in quantity to the type of glove washing so that these businessmen are not limited to participating only in some quantity, since they do not have the capacity to comply with a greater volume of washing.

It would also be necessary to group them together and represent them before institutions and companies. Without the association of these glove launderers, it is impossible to move forward. With this, they would be gaining ground against companies such as Vallen, which has the knowledge and equipment to respond immediately to their requirements.

The process for the provision of the service is mechanized in a personalized way: they collect the gloves at the doors of the companies for which they perform this activity, select the gloves according to the level of soiling, wash them and pack them in bags of 200 pairs. Only one of the glove washers mentioned that he establishes a contract for one year, thus committing himself with dates, day and time of delivery and establishing a commitment on the part of the company to give him work with this activity.

One of the key actors interviewed is a glove washer. He started in 1995⁴ and is referred to by all the small entrepreneurs as the one who washes large quantities of gloves and as the initiator of this activity, since he washed 2000 pairs per day until he completed 7000 pairs per week. When this dynamism overtook him, he began to invite other launderers (not specifically glove washers) to also start this activity in the service sector and trained them. He noted that he once sold new gloves instead of laundering them, which at the time was profitable, but he gave up because it was more profitable to launder them than to sell them. Even if there are fewer or more gloves to be washed per day, they are expected to collect around 800 to 1,000 pairs. This way they are washed according to the capacity of the machines. The commitment established with the companies to provide this service must be fulfilled in due time and form, since if any production area must stop for lack of this safety equipment, the same company penalizes the glove washer with 600 dollars per hour of lost production.

⁴ The story of how this washer started his business began when a person for whom he worked and who owned the business, closed the business, and passed the machines to the glove washer and paid little by little for each of the industrial machines that were sold to him without resorting to any institution. He assures that he was afraid to go to the banks because they asked him to have a million pesos in real estate to lend him \$300,000. That is why he decided not to resort to any other means of financing since the interest rates were very high, he mentioned; "that is why I am not rich" because I never ask the banks to grow as I should be.

Cost they assume. Some of them do not want to sign contracts that oblige them to work for a specific period with Tier 1 and 2 companies because many times the companies take between three and six months to pay them and this causes them problems in running their business.

Most of the companies for which they offer this glove-washing service are suppliers of Nissan or other companies in the automotive industry. They are located in Aguascalientes and Guanajuato. They are not exclusive for glove washing but take on other types of activities depending on market demand. In times of elections, they are asked to machine aprons or other garments, or they wash other types of material for other companies, for example, washing towels for a spa or "rags" for a ranch⁵.

Collaboration processes are observed through the subcontracting of the service. There are companies that subcontract the glove washing service. They offer to pay them at a price that in their version "enslaves them" because they cannot aspire to earn a little more with this activity and then they are subordinated to the amount of work that they grant them and the price that they offer them, that is to say, fixed. When one of the laundries has a larger workload, they double subcontract to other smaller laundries in order to comply in a timely manner (Figure 6).



Figure 6 Pioneer glove washer in the state of Aguascalientes

Source: Laundry interior. March 28, 2018. This small company is located in the municipality of Jesús María. It currently washes gloves for Yorozu mexicana planta Aguascalientes, Yorozu Celaya, Guanajuato, dsk, Prodomex, and resorts mexicanos, all of these companies operate with transnational capital and are suppliers of Nissan I and II

In the same way, collaboration is associated with the quality of service among the companies dedicated to glove laundering. The owners of the laundries themselves teach how to select gloves, which, depending on their condition, can be washed and which should be discarded. Also, how they should be washed and what types of chemicals to use. Without this filter there are no working agreements. They support each other when someone wants to start a laundry business, they communicate with each other if they have an "old" machine, but it still works, and there are those who definitely "trust" the machines to others, not because they have growth projects, but they do not lend the machines because they cannot be easily disassembled; it takes a whole engineering to do it and this happens only if they are already going to be sold.

The origin of the inputs for glove washing is the same for small entrepreneurs: neutral soaps, degreaser, soda, soda neutralizers, sodium hypochlorite and softener. These are purchased in Aguascalientes from a store called "Don Pulcro" and from other basic chemical distributors located in the state. Although there are different materials used to manufacture the gloves (yarn, vinyl, flesh, acrylic, cotton and leather), they only wash with yarn, cotton and acrylic.

It is important to emphasize the importance of this store dedicated to selling cleaning supplies. It began offering products in 1987 in Celaya, Guanajuato. It offers cleaning products for the home, business, car care and personal care, and distributes them to laundries, hotels and restaurants. It is located in the states of San Luis Potosí, Guanajuato, Querétaro and Aguascalientes. It maintains its own brand, so its products are a chemical combination that it has designed and patented. It not only sells products to companies in the service sector but also in the industrial sector. Nissan and some others in the automotive sector consume degreaser⁶.

The types of incentives for suppliers from the government do not exist; they have started their businesses supported by themselves.

⁵ This glove washer washes "rags" for different ranches, these correspond to small wipes used by cow milkers, who use rags in order not to rip off their udders.

⁶ Telephone interview conducted with the Aguascalientes branch manager. Friday, August 25, 2018.

One of the interviewees points out that if they were supported there would be less pollution and fewer problems because "instead of the companies throwing away what they are no longer going to use, they could give it two or three uses by washing it, but the government does not put pressure on the companies". He assures that "if they washed more, they would grow more, and the large companies would pollute less". They have not been able to consolidate as an association. He comments that they have not made this proposal formally to the Government because they do not have a society as glove washers. He says that the government has put many obstacles in their way. For example, the Government sold him a piece of land for one and a half million pesos, but he had to make monthly payments of 15,000 pesos and he could not pay them. He does not even have that amount as a free profit because, in addition, he must pay Semarnat⁷ to analyze his wastewater and let him work.

The disagreements that have existed among the glove washers are related to prices. They pointed out that some of them washed gloves at "free"⁸ prices to gain market share, and they say that this is "not acceptable" because it is a matter of surviving in the market, but quality should not be compromised because they all get "burned". That is why the companies for which they washed gloves began to distrust the low price. So, they returned to these large companies to require the service with the glove washers with whom they started this activity.

Today they contract integral suppliers such as Vallen, which can supply everything the company needs. Nissan is supplied with 50,000 pairs of new gloves per month, and they wash between 15 or 20% of the gloves that they supply. Only Vallen supplies safety equipment to Nissan in the state. In the past, the glove was disposable and that is why they did not wash them.

⁷ Glove washers, whether or not they are registered with the Secretaría de Hacienda y Crédito Público, must pay Semarnat \$2800 every two months for Semarnat to take a sample of their company's wastewater and determine whether it is harmful or if it is dangerous to discharge it into the public sewage system.

Conclusions

This is an incipient local development in which a disarticulated local productive system has manifested itself. Incipient because it is a productive activity of glove washing that, although it started more than two decades ago, has not yet taken off due to the structure of the organization and the subcontracting system. The emergence is due to a need, through local initiatives that generate little added value and work in uncertainty.

The provision of the glove washing service is mainly governed by subcontracting and has been observed since the 1990s. Its productive base is made up of local capital, driven by the configuration of social networks linked to relationships of trust. The knowledge and management of the laundering processes is sustained through empirical practices. The transformation of knowledge occurs through and by means of traditional and generic knowledge, passed by word of mouth and trial and error. This has created an atmosphere of exchanges of past "trade secrets" between families and collaborating partners in the system.

There is no mutually beneficial policy between Nissan and the small suppliers because, in the first instance, they would not be able to supply the entire plant on their own, either with glove washing or with the sale of safety equipment. They would need government support to organize themselves as a network of small entrepreneurs and the support of large companies.

Government participation is indispensable for local development to be conceived as such. According to Boisier (2005), Vázquez Barquero (2000), Cravacuore et al (2004), government involvement is essential to create solid productive ties.

Therefore, it is also a type of local productive system, because governmental support in terms of dissemination, technological knowledge, transfer of theoretical knowledge, among others, such as administration, are not present on the part of the government.

⁸ Regalado means that they have to charge much cheaper for each pair of laundered gloves, and this leads to a lack of profit and sometimes an inability to cover payroll.

Although there is a struggle to stand out as small entrepreneurs on the part of the glove washers, but without the governmental part, the support to articulate with the other companies that demand their service is limited in the face of this accumulation of theoretical observations about what local development is, its guidelines and what should be considered to achieve it. Specific questions remain: What are the main public policies to strengthen the economic growth of the territory? In order to be complete, a public policy must contain planning, programming, budget and evaluation. What is the role played by the state government in relation to the intervention of the policy in local development, aimed at the automotive industry and other activities that dynamize the environment?

One of the aspects to be reviewed in this governmental structure is in relation to the transnational and is that most of the jobs with the highest added value are those that occupy the lowest percentage in Nissan's companies, so it does not happen that salaries increase for all workers. The other aspect is that there is no productive chaining, so it is also difficult for this structure as such to produce results, so we should question where local development begins and ends in the state.

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Economic evaluation of the transformation of a residential property into an Airbnb type property

Evaluación económica de la transformación de un inmueble con vocación habitacional al tipo Airbnb

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Abstract

The worldwide expansion of the Airbnb platform has allowed the growth of residential properties without a lodging vocation in recent years. The work developed evaluates the economic feasibility in terms of profitability, derived from the transformation of a residential property as an Airbnb type business, quantifying the cash flows (income and expenses) for the adaptation, management, and rental of the property. Three options were analyzed to determine the income per night: a) platform price, b) break-even point and c) average of both, with occupancies of 12, 15, 17, 19 and 20 nights per month, two useful life periods are proposed for the project (10 and 15 years). Similarly, the value of the property is simulated by applying a Minimum Acceptable Rate of Return (MARR) that reflects market conditions, representative of the business, as well as quantifying the risk, to calculate the Net Present Value (NPV) and the Internal Rate of Return (IRR); investment criteria that reflect the acceptability of undertaking the transformation. It was found that options b) and c) at 10 years and only b) at 15 years, show profitability at the lowest investment risk.

Profitability, Investment, Hosting

Resumen

La expansión a nivel mundial de la Plataforma Airbnb ha permitido que inmuebles habitacionales sin vocación de hospedaje se hayan multiplicado en los últimos años. El trabajo desarrollado, evalúa la factibilidad económica en términos de rentabilidad, derivados de la transformación de un inmueble habitacional como negocio en marcha del tipo Airbnb; cuantificando los flujos de efectivo (ingresos y egresos) por la adecuación, manejo y renta del inmueble. Se analizaron tres opciones para conocer el ingreso por noche: a) precio de la plataforma, b) punto de equilibrio y c) promedio de ambos, con ocupaciones de 12, 15, 17, 19 y 20 noches al mes, se proponen dos periodos de vida útil para el proyecto (10 y 15 años). De igual forma se simula incluir el valor del inmueble; aplicando una Tasa de Retorno Mínima Aceptable (TREMA) que refleje las condiciones del mercado, representativa del giro, así como que cuantifique el riesgo, con la finalidad de calcular el Valor Presente Neto (VPN) y la Tasa Interna de Retorno (TIR); criterios de inversión, que reflejan la aceptabilidad para emprender la transformación. Se encontró que las opciones b) y c) a 10 años y únicamente b) a 15 años, muestran rentabilidad al menor riesgo de inversión.

Rentabilidad, Inversión, Hospedaje

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Introduction

In general terms, it can be pointed out that at the beginning, the members of societies used barter as a mechanism to obtain goods or services; then it was enough to locate the one who had "what was needed", proceeding to negotiate "what could be offered in exchange, as well as the amount".

However, sometimes the participants in the barter did not agree on the criteria for determining the resources and amounts to be applied. This led some societies to propose a unique, attractive and generally accepted resource to develop the exchange of goods or services; that is, money emerged. This is a relative means to measure the value of things in consideration of the objectivity and interpretation of societies, so despite being a means of exchange the parties must agree on the amounts that balance the perspectives and interests of the participants (Alvarado, 2015).

Determining the monetary exchange value of a product or service depends on multiple factors, which are partially determined by its controllable characteristics, such as: quantity, types of raw materials used, manufacturing methods and procedures, regulations on which the design is based. It is also partially dependent on circumstances and conditions beyond the designer's control, such as changing market conditions and diversification of consumer demand. Any event that affects the costs of a product will affect its value (Arbones, 2009).

Money is indispensable when we make an investment (any disbursement of financial resources to acquire production goods and that an individual or company uses during several economic cycles to meet its objectives), since we must use an amount of it in the present, which will be transformed into another in the future, taking into account the effects of the circumstances that occur during the elapsed time, this is known as the time value of money, a definition that is accompanied by discount rates, since they reflect this particularity. Since money always shows scarcity, if an individual decides to invest instead of spending, then what he expects is that the payoff in the future will be greater than in the present (Marcelino and Baca, 2016), such compensation is perceived through a recovery rate.

These rates should not only establish the proportion of profit that the investor expects to receive for risking his money, but should also include coverage of all those factors that may affect the change in the value of money over time such as: real rate (opportunity cost of capital), inflation rate (generalized increase in the prices of goods and services (Mankiw, 2012)) and risk premium (conditions of the globalized environment) (Alvarado, 2015).

One of the widely used rates is the Minimum Acceptable Rate of Return or Minimum Acceptable Rate of Return (MARR), it refers to an interest rate that is higher than the rate offered for "safe" investment, such as the one promised by a bank in a promissory note, with yield payable at maturity or the one obtained by investing in Federal Government debt instruments. (Vidaurri, 2013).

In the research to answer the hypothesis and to find out if it is viable to convert a property with a housing vocation into an Airbnb-type business in Morelia, Michoacán, a TREMA will be used that is consistent with the business, speaking in real terms, reflecting market conditions and risk, since Airbnb is not a hotel per se; in order to evaluate the desirability through the calculation of the Net Present Value (NPV) defined as the difference between the sum of the present values of the income and the sum of the present values of the expenses (Mankiw, 2012). To contrast the TREMA, the calculation of the Internal Rate of Return (IRR) of the net cash flows will be used.

The IRR is the interest rate that makes the NPV of an investment project equal to zero (Arbones, 2009). Seeking to warn if the IRR is greater than the IRR, which would indicate a monetary surplus in the useful life of the business.

The Airbnb business model

Founded in 2007 by two industrial designers who shared an apartment in San Francisco; those who developed a digital platform dedicated to the supply of accommodation to individuals and tourists, in which the hosts had the option to advertise and contract the rental of their properties with their guests (Airbnb News, 2022).

Initially, people who wanted to use Airbnb had to meet some requirements, such as bringing inflatable beds to sleep on, no possibility of using the bed of one of the hosts, plus the landlords had to prepare breakfast for the tenants and it was only possible to rent if the owners were in the same house on the days the traveler planned to stay.

When Airbnb began receiving its first investment, those principles quickly changed. The inflatable mattress requirement was eliminated, beds could be rented, and morning breakfast was no longer required. But the most important change was that it was allowed to rent a property without requiring the owners to be there. This change is fundamental in the history of Airbnb because it opened the door for Airbnb to become the speculative market it is today (Gil, 2019).

Airbnb manages a model similar to that of a hotel. It is segmented into two groups which are the host and guest, where mostly the host is the one who must manage several items in the description of his ad to attract potential interested parties and rent his property (Modelocanvas, 2022).

While hotel chains follow a pattern that corresponds to the Disaggregated model, Airbnb follows a multi-client/multi-market business model. That is, for them, as important is the tenant (customer) as the host. Renters are usually looking for accommodation with a homey touch that hotels cannot offer, while most hosts want to rent out their homes to supplement their income. The majority of their revenue comes from booking service fees charged to both guests and hosts, managing to cover the cost of the Customer Care team, this fee is charged once the booking is confirmed.

The commissions paid by the host range between 3% and 5%, for advertising the property; the guest on the other hand pays a commission that can reach up to 20%, which includes: use of the platform, booking fees, cleaning, service, occupancy, additional guests, currency exchange, VAT (Value Added Tax) and local taxes (Maldonado, 2018). Airbnb has an effect on raising rental prices significantly, according to studies based on a microeconomic model, which examined the effect of the app on rents and housing prices.

Using in the city of London between 2016 and 2019, by means of regression models GMM System (Generalized Method of Moments), they indicated that the presence of Airbnb has an upward effect on both home purchase and rental prices. The housing price paid is 0.031 % more expensive for every 100 listings in the municipality (Benítez-Aurioles and Tussyadiah, 2021).

Then whether for business stay or vacation Airbnb hosts can obtain better income by converting housing with short-term rentals, with this business model, than for long periods for residents or locals (Deboosere et al., 2019).

A rooming house rented as Airbnb can perceive higher profits in short periods, even in some cases approaching the profits of a hotel room, but with lower infrastructure investment, maintenance costs and permits, adding the facilities and attractions offered by the platform, to generate a bidirectional trust between the lessor (host) and the lessee (guest).

The economic evaluation of the study seeks to confirm, based on the available information, the suitability of the conversion. It is not clear if the hosts who decide to rent their space, at the time of calculating the income per night, consider the value of the property (product of a previous appraisal), since Airbnb makes the calculation of the price per night, using parameters such as location, number of bedrooms, maximum occupants, bathrooms, parking lots and comfort equipment; a circumstance that should be examined within the economic evaluation, as part of the investment analysis, to establish a more complete and dynamic study.

Object of study

The property under analysis is a residential house, located in Manantiales Poniente (Figure 1) west of the city of Morelia, Michoacán, (19°41'55" N, 101°14'19" W).

Less than 100 meters from Francisco I. Madero Poniente Avenue and the junction of Salida a Quiroga (main road in the city of Morelia); the Universidad Latina de América and the H. Ayuntamiento de Obras Públicas (Figure 2).

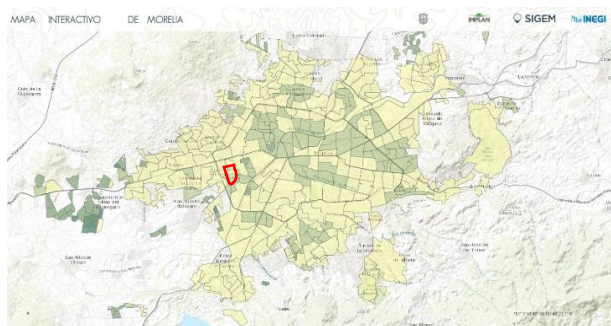


Figure 1 Map of the city of Morelia divided by neighborhoods

Source: (Instituto Municipal de Planeación de Morelia, 2022)

The area is upper middle class, the property has private security and surveillance in the subdivision, at the exit of this, there is a wide range of public transport routes that go to the busiest and most interesting sectors in Morelia.

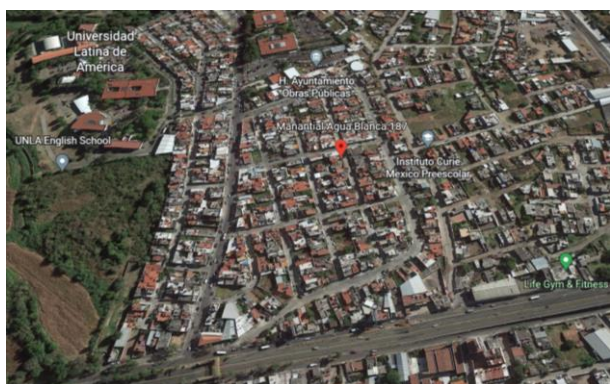


Figure 2 Micro-localization of the study property

Source: (Google Earth, 2022)

To determine the value of the property included in the simulation, a real estate appraisal was performed, an estimate of the value of a property, determining the measure of its exchange power in monetary units and at a given date.

It is also a technical opinion that indicates the value of a property based on its physical characteristics, location, use and market research and analysis (INDAABIN, 2022), performed by a qualified person, the accuracy and usefulness of the value estimate depends on the faculty, experience and judgment of the person performing the analysis (Moreno-Martínez, 2005). The selection of the comparables is delimited in an interval of 18% for the land and building areas and for the age of 5 years (Table 1).

Comparative or market value:	\$85,625.61
Physical or direct value:	\$77,106.99
Residual value:	No aplica
Value by capitalization of income:	\$34,412.86

Table 1 Property values according to valuation approaches in USD

Source: (Moreno, 2022)

It was determined that the most representative value is the market value. Therefore, the property has a value of \$85,625.61 USD as of April 20, 2022 (Moreno, 2022).

Research design

For the purposes of the study, we have the following preliminary considerations:

- Service life

The useful life of the business (N) for calculation purposes is separated into two periods, at 10 years, to try to compensate the expenses and is extended up to 15 years, with the purpose of knowing how the NPV will vary.

- Choice of the TREMA

The calculation of the EIRR depends on the prevailing economic conditions in the country, as well as the degree of risk associated with the investment project. However, in general, the minimum acceptable rate of return is calculated with the following equation (Vidaurri, 2013):

$$\text{TREMA} = \text{actual rate} + \text{inflation rate} + \text{risk premium} \quad (1)$$

A real interest rate of 3.49% was used, representative of the turn (Demuner and Lopez, 2017); the inflation rate used, is the average from May 2021 to May 2022, being 6.7131% (BANXICO, 2022); while the risk premium due to its complexity and subjectivity, coupled with the volatility of the market, derived from the COVID-19 pandemic, where people stopped traveling and because it is a platform that in theory, establishes trust between the host and guest, it is possible to consider that there is a low risk (before a misconduct of the guest that could totally damage the property). A risk premium of 3.1969% average of the financial analysis of two applicable sources of the hotel business was used (Rivera, 2018) and (Demuner and Lopez, 2017). Therefore:

$$TREMA = (3.49\%) + (6.7131\%) + (3.1969\%)$$

$$TREMA = 13.40\% \tag{2}$$

- Proposal of the property as Airbnb

The rooming house that was offered on the platform receives the name "Casa Moreno" the complete house was available (Figure 3), with 3 bedrooms, equipped kitchen, 1 ½ bathrooms, 2 parking spaces, backyard, outdoor furniture, washing machine, iron, cable TV, wifi, basic elements (towels, sheets, pillows, extra blankets, soap, toilet paper and hot water), available 365 days a year for analysis and with seven people maximum to host, in addition to accepting pets.



Figure 3 Baseline ad information on the platform
Source: (Airbnb, 2022)

- Occupancy rate

These values were calculated with the AirDNA statistical program, based on the historical occupancy rate in the area, type of property (whole house), number of bedrooms (three rooms) and the maximum number of guests (seven people), assuming that the object of study will have clients, equal to the statistical average of the ads that there are for Airbnb in Morelia, initially we proceeded with a 50th percentile, from which we extracted a historical record from May 2021 to May 2022 (Figure 4), for greater certainty we obtained the average for the entire year, being 38.46%.

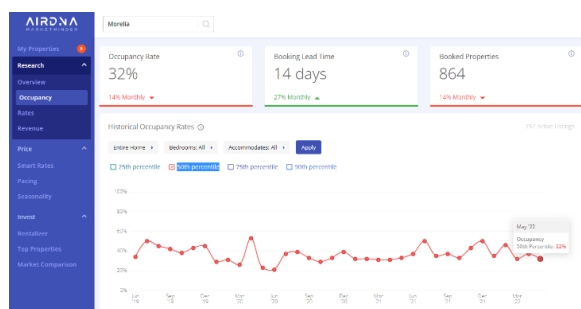


Figure 4 Annual occupancy percentage
Source: (AirDNA, 2022)

To move from occupancy percentage to days, it was multiplied by 31, obtaining 12 days rounded up, this value will be the basis for monthly revenues. As the occupancy percentage is expected to increase over time due to the learning curve and market strategies, a new calculation was made, now based on the statistical graph of the 75th percentile, with an average of 63.69% per occupancy, rounded to 20 days. The occupancy days will be as follows: year one and two, 12 days per month; year three and four, 15 days per month; year five and six, 17 days per month; year seven and eight, 19 days per month; and from year nine to fifteen, 20 days per month.

- Costs per service

Every business always needs an initial investment; in this context, to make the house more attractive, minor remodeling, purchase of furniture and appliances, lighting, white goods, security equipment, front garden and general painting are proposed, for a total of \$3,511.00 USD. For the operation of the business, the fixed costs (Table 2) were quantified, being those expenses that will always be paid month to month, and the variable costs (Table 3), which are a function of the number of nights that the property is rented.

Fixed costs for different occupations	
Nights/month	Fixed monthly cost (FC)
12	\$506.51
15	\$611.79
17	\$681.97
19	\$752.16
20	\$787.25

Table 2 Fixed monthly costs of the property per occupancy in USD

Fixed costs for different occupations	
Nights/month	Variable cost (CV)
12	\$73.59
15	\$85.59
17	\$93.20
19	\$107.97
20	\$119.33

Table 3 Variable monthly real estate costs per occupancy in USD

- Estimated income per night

The economic analysis was performed with three different options, with different amounts per night, including cleaning fee, service and taxes. These range from a static, dynamic and mixed analysis of prices and revenues for the financial run. The three types of revenue that were used to conduct the research are shown below.

a Revenue per night, Airbnb (smart pricing).

Using a smart algorithm, the Airbnb platform calculates an average price per night of: \$96.57 USD or \$1,885.00 MXN (Figure 5), including cleaning fee (10.61%), service fee (13.85%) taxes and fees on accommodation (11.88%) of the total; it should be noted that the pricing algorithm only uses a statistic based on the parameters described above but does not include elements fully appreciated by the traveler (finishes, furnishings, interior design, landscaping, floor area and land); the Airbnb algorithm provides a minimum price of \$34.12 USD or \$666.00 MXN and a maximum of \$146.26 USD or \$2,855.00 MXN with fees and taxes included (Airbnb, 2022), so the income per night is within limits.

Previsualiza cuánto pagan los huéspedes

Selecciona cualquier combinación de noches, huéspedes y mascotas para que te mostremos el precio final.

1 noche	1 huésped	Sin mascotas
\$1,200 MXN por 1 noche	\$1,200 MXN	
Promedio de Precios inteligentes		
Tarifa de limpieza para estancias cortas	\$200 MXN	
Tarifa de servicio para huéspedes	\$261 MXN	
Impuestos	\$224 MXN	
Total	\$1,885 MXN	

Figure 5 Breakdown of prices shown on the platform in MXN

Source: (Airbnb, 2022)

- Revenue per unit at the break-even point (r)

The break-even analysis finds the value of a parameter that makes two elements equal. The break-even point Q is determined from the revenue and costs of a product. It obeys the following mathematical expression (Arbones, 2009):

$$Q = \frac{CF}{r-v} \quad (3)$$

Where:

Q = equilibrium quantity

CF = fixed costs

r = revenue per unit

v = variable cost per unit

For the analysis it is necessary to clear the income per unit or per night (r), since the equilibrium quantity (Q), is the number of nights it is possible to rent, the fixed and variable costs per exhibition were described in Tables 2 and 3 respectively, therefore:

$$r = \frac{CF}{Q} + v \quad (4)$$

It is considered that the minimum number of nights rented per month $Q = 12$, up to a maximum $Q = 20$ (Table 4):

Dynamic income per unit (r)	
Nights/month	r
12	\$115.80
15	\$126.37
17	\$133.32
19	\$147.56
20	\$158.69

Table 4 Dynamic income per unit, r in USD

- Average income per night

As a third option, an average is calculated between the total amount expressed on the Airbnb platform and that of the break-even point of occupancies per night (Table 5). This mixed analysis would complete the picture of possible options to choose from.

Summary of revenue per night (Airbnb and Airbnb average r)	
Nights/month	Income per night
12	\$106.18
15	\$111.47
17	\$114.94
19	\$122.06
20	\$127.63

Table 5 Average revenue per night Airbnb and r in USD

- Inclusion of the value of the property

The object of study is considered as equity, i.e. it was not necessary to go to a lending institution and obtain financing for its purchase. Consequently, the initial investment is \$89,136.61 USD (value of the property, \$85,625.61 USD and initial adjustments, \$3,511.00 USD).

At the end of both useful life periods of the project (N=10 and N=15), the value of the property is added without depreciation, as described in the appraisal, since, at the end of the business, the property is retained.

- Economic evaluation methods

The NPV calculation is used as an acceptability criterion, determined by the expression:

$$VPN = \sum_{n=0}^N \frac{A_n}{(1+i)^N} = \sum_{n=0}^N \frac{A_n}{(1+TREMA)^N} \quad (5)$$

Where:

VPN = net present value

A_n = net cash flow at the end of period N

i = TREMA (13.40%)

N = service life of the project (10 and 15 years)

When the NPV is positive it indicates that the present value of the net income fully covers the cost of the investment; in case of a negative NPV it means that the present value of the net income is not enough to cover the cost of the initial investment (Alvarado, 2015).

The second acceptance criterion is the IRR, to deduce it we follow the method of trial and error or iteration, until we convert the NPV to zero, mathematically:

$$VPN = \sum_{n=0}^N \frac{A_n}{(1+TREMA)^N} = 0 \quad (6)$$

Both decision criteria were estimated for the three nightly revenues: a), b) and c), described above, over the two life spans; 10 and 15 years.

Results and conclusions

Following the application of the proposed methodology, the results are shown for the three options, depending on the revenue per night.

- a) Revenue per night, Airbnb (smart pricing)

For this first option, it is essential to individually perform the NPV calculation (Table 6), with eq. 5 and IRR (Table 7), using eq. 6, for each number of nights rented per month (12, 15, 17, 19 and 20), since the revenue per night provided by Airbnb is a static profit and when calculating net cash flows, fixed and variable expenses, are directly proportional to the number of nights, as shown in Tables 6 and 7.

Airbnb recommendation \$96.57 USD per night				
N	Night /month	VPN		
Useful life 10 years				
10	12	-\$29,031.08	< 0	Rejected
10	15	-\$17,980.86	< 0	Rejected
10	17	-\$10,589.25	< 0	Rejected
10	19	-\$3,656.62	< 0	Rejected
10	20	-\$444.62	< 0	Rejected
Useful life 15 years				
15	12	-\$46,710.30	< 0	Rejected
15	15	-\$33,610.69	< 0	Rejected
15	17	-\$24,848.21	< 0	Rejected
15	19	-\$16,629.84	< 0	Rejected
15	20	-\$12,822.14	< 0	Rejected

Table 6 Summary of 10 and 15 year NPV analysis with Airbnb's recommended static income in USD

Airbnb recommendation \$96.57 USD per night				
N	Nights /month	TIR	TREMA (13.40%)	
Useful life 10 years				
10	12	7.221%	< 13.40%	Rejected
10	15	9.575%	< 13.40%	Rejected
10	17	11.148%	< 13.40%	Rejected
10	19	12.623%	< 13.40%	Rejected
10	20	13.306%	< 13.40%	Rejected
Useful life 15 years				
15	12	1.532%	< 13.40%	Rejected
15	15	5.306%	< 13.40%	Rejected
15	17	7.585%	< 13.40%	Rejected
15	19	9.596%	< 13.40%	Rejected
15	20	10.495%	< 13.40%	Rejected

Table 7 Summary of 10- and 15-year IRR analysis with Airbnb's recommended static income

b) Revenue per unit with the break-even point (r)

For the second option, the revenue per night (r) obtained through the break-even point (eq. 4), it is not necessary to individually estimate the NPV and IRR (Table 8) for each number of nights rented per month, since the net cash flow is direct.

Calculated dynamic revenue per unit (r)			
N	VPN		
10	\$21,223.15	> 0	Accepted
15	\$23,613.86	> 0	Accepted
N	TIR	TREMA (13.40%)	
10	17.300%	> TREMA	Accepted
15	17.306%	> TREMA	Accepted

Table 8 Summary of NPV and IRR analysis at 10 and 15 years with dynamic revenue per unit (r) in USD

c) Average revenue per night

As in option b), it is possible to summarize the net cash flows, for the two life periods (Table 9).

Average income per night (Airbnb and r)			
N	VPN		
10	\$2,641.57	> 0	Rejected
15	-\$2,351.83	< 0	Rejected
N	TIR	TREMA (13.40%)	
10	13.907%	> TREMA	Rejected
15	12.968%	< TREMA	Rejected

Table 9 Summary of NPV and IRR analysis at 10 and 15 years with average revenue per night (Airbnb and r) in USD

In order to have greater certainty in the analysis and to corroborate that it is appropriate to consider the value of the property within the initial investment, a financial run was made, where the start-up expenditure is clearly equal to the initial adjustments (\$3,511.00 USD), i.e., disregarding the value of the property obtained by the appraisal. Showing that the NPV (Table 10) is disproportionate with reference to the investment, the NPV rises to \$109,239.47 USD in comparison with the maximum value of \$23,613.86 USD of the analysis that does consider it.

N VPN			
a) Airbnb revenue per night (average of VPNs)			
10	\$48,936.57	> 0	Accepted
15	\$58,701.37	> 0	Accepted
b) Revenue per unit (r)			
10	\$82,500.21	> 0	Accepted
15	\$109,239.47	> 0	Accepted
c) Average income per night (Airbnb & r)			
10	\$63,918.63	> 0	Accepted
15	\$83,273.77	> 0	Accepted

Table 10 Summary of the 10 and 15 year NPV analysis with the three income per night: a), b) and c); not including the value of the property in USD

The same happens with the IRR (Table 11), obtaining a maximum of 283.627%, 31.17 times higher than the proposal (13.40%).

N TIR			
a) Revenue per night, Airbnb (average IRR)			
10	283.626%	> 13.40%	Accepted
15	283.627%	> 13.40%	Accepted
b) Revenue per unit (r)			
10	283.098%	> 13.40%	Accepted
15	283.099%	> 13.40%	Accepted
c) Average income per night (Airbnb & r)			
10	242.545%	> 13.40%	Accepted
15	242.548%	> 13.40%	Accepted

Table 11 Summary of IRR analysis at 10 and 15 years with the three income per night: a), b) and c); without including the value of the property.

The result of a very high IRR is implausible, it would indicate that the risk of the business is proportional, i.e., that it is extremely volatile, of course this context does not apply in a lodging business. Consequently, the assumption of including the value of the property in the financial simulation is confirmed to be correct.

The results obtained from the financial run through the NPV and IRR, show that, in a first moment, where the useful life is equal to 10 years, acceptability is shown in options a) and b); as well as in option b) when the useful life is 15 years; simplifying, we can answer that, it is convenient to transform a property with a housing vocation into Airbnb, if fixed and variable costs are considered. The analysis discarded at both times (10 and 15 years), the income per night, which yields the Airbnb platform with the intelligent algorithm; the most likely reason lies in the exclusion of the costs mentioned above, because the profits are not real and it would be necessary to keep the property rented for the whole month; to prorate the expenses for the property service. Circumstance that becomes little presumable, because of the occupancy percentages of the city of Morelia. Given that they are distributed at specific times of the year, unlike other cities with higher attendance.

If it were imperative to increase it, we would have to consider extending the useful life of the business beyond 15 years and carefully analyze inflation, micro and macroeconomic conditions, as well as emerging businesses of the same type.

Airbnb despite being a rising business, where more and more owners undertake the adventure of being hosts, begins to show signs of market saturation, if to such context we add the national and international conditions, which momentarily, show a hindered future, at least in the immediate, it is prudent to invite the management of production assets with caution.

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Support to MSME in a municipality of Puebla, Mexico**Apoyo a la MiPyME en un municipio de Puebla, México**

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Abstract

This article arises from a research project that seeks to respond to the needs of micro and small entrepreneurs in the region where the educational institution is located, in which various activities are carried out in favor of the region where it is located. The objective of the first stage is to know the real situation of the Micro and small companies in the region in order to offer actions that help improve their areas of opportunity. The Methodology used is based on the scientific method, and with a mixed cut, using the questionnaire applied with micro and small entrepreneurs as a research instrument. As a contribution from the institution, it has been working to rescue those economic sectors that have been affected as a result of the pandemic caused by the virus that came from China and that we are still suffering its consequences. Various activities aligned to help those who invest in favor of their family and the region.

Diagnosis, Entrepreneurs, MSMEs**Resumen**

El presente artículo surge de un proyecto de investigación que busca responder a las necesidades de micro y pequeños empresarios en la región donde se encuentra localizada la Institución educativa en la cual se gestan diversas actividades a favor de la región donde se encuentra ubicada. El objetivo de la primera etapa es conocer la situación real que guardan las Micro y pequeñas empresas de la región para poder ofrecer acciones que ayuden a mejorar sus áreas de oportunidad. La Metodología empleada es a partir del método científico, y con un corte mixto, usando como instrumento de investigación el cuestionario aplicado con micro y pequeños empresarios. Como contribución de parte de la institución, se ha estado trabajando para rescatar aquellos sectores económicos que han sido afectados a raíz de la pandemia causada por el virus que llego de China y que aún sufrimos sus consecuencias. Diversas actividades alineadas para coadyuvar a aquellos que invierten en favor de su familia y de la región.

Diagnóstico, Empresarios, MiPyMEs

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Introduction

As of December 2019, humanity had to change its habits, due to a virus that spread unexpectedly, resulting in thousands of deaths across the planet; it is said that it had to evolve technologically for approximately 10 years (Rodríguez, 2021). As a result, mankind had to change the dynamics of its activities, therefore, the course of many businesses was affected, many companies had to close their doors, because they could not keep up due to the drop in their income. On the other hand, those who had business vision, based on the phrase that states "when the sea is troubled, the fishermen profit", because they took advantage of the conditions caused by the pandemic and thus sought to meet the demands for goods and services (for example, with masks and antibacterial gel, to home delivery services) growing exponentially.

Through this research we present the diagnosis of what has happened in the region of San Martín Texmelucan Puebla, which is characterized as an area with a lot of trade (the largest clothing market in Latin America, to contextualize); this is dimensioned taking as context the pandemic caused by the SARS-CoV-19 virus, there was a lot of affectation. The Tecnológico Nacional de México, San Martín campus, aware of this reality, since it began to open (gradually) the activities, offered a program of economic reactivation, so that companies that required support, approached the campus to receive accompaniment and support in their activities through teachers who carried out technical stays and students who through professional residence or development of integrative project, gave attention to the needs that correspond to the academic profile of the participants. This was done after interviews were conducted with the businessmen to find out in which areas they had their main needs and to be able to meet them.

Based on the results of previous research carried out and published through the Latin American Studies Network in Administration and Business (RELAYN) of the Ibero-American Network of Research Academies (RedIBAI) as well as the National Association of Faculties and Schools of Accounting and Administration (ANFECA), we have a perspective of the problems presented in the region's commerce, which is a recurrent situation in Latin America (according to the results published by RELAYN, and which are not very different from what is found in this region).

In order to set the context of the study, this article is divided into 4 sections:

1. Contextualization
2. Methodology
3. Diagnosis
4. Conclusions

1. Contextualization of the study

In Mexico, as in other countries, micro, small and medium-sized enterprises (MSMEs) are a fundamental part of its economic structure, contributing to the generation of the country's wealth and employment. Micro, small and medium-sized companies represent the largest number of established companies, and large companies represent a smaller proportion of the number of established companies.

The criteria for classifying companies by size are shown in Table 1.

Company type	Number of workers	Business Volume
Microenterprise	Less than 10 workers	Less than 4 million pesos
Small company	Less than 50 workers	Less than 20 million pesos
Medium Company	Less than 250 workers	Less than 100 million pesos
Big company	More than 250 workers	Greater than 100 million pesos.

Table 1 Classification by size of companies

Source: Prepared by the authors, with data from the Ministry of Economy

MSMEs are particularly important for national economies, not only because of their contributions to the production and distribution of goods and services, but also because of their flexibility to adapt to technological changes and their great potential for job creation. They represent an excellent means to promote economic development and a better distribution of wealth.

The company, as an economic unit transforming goods and services, is defined as: "the organism formed by people, material goods, aspirations and common achievements to give satisfaction to its clientele" (Romero, 2017). García and Casanueva (2012), define the company as an "entity that, through the organization of human, material, technical and financial elements provides goods or services in exchange for a price that allows the replenishment of the resources used and the achievement of certain objectives".

Lazaro (2021), cites Orueta, who presents the percentage of companies, by size, in Latin America, as shown in Table 2.

Country	Percentage
Argentina	98.08
Bolivia	98.00
Brasil	98.10
Chile	98.40
Colombia	96.00
Ecuador	99.52
El Salvador	99.30
México	99.80
Nicaragua	99.34
Paraguay	99.00
Perú	99.50
Portugal	99.90
R. Dominicana	97.70
Uruguay	99.45

Table 2 Percentage of micro, small and medium-sized companies

Source: Lazaro, R. (2021, p. 743)

Mayett (2022), takes information from INEGI and the OECD, where it is highlighted that MSMEs represent about 99.5% of companies in Latin America and employ approximately 60% of formal employment, their contribution to the Gross Domestic Product (GDP) is 25%. Thus, the importance of MSMEs is remarkable.

San Martin Texmelucan de Labastida, is a city located in the west central zone of Puebla, is the municipal seat of San Martin Texmelucan, 32 kilometers from the city of Puebla, 95 km from Mexico City and 23 km from the city of Tlaxcala de Xicohténcatl. It has an area of 82.67 km. The municipal boundaries are: Ixtacuixtla, Tlaxcala to the north and northwest; to the east and south Huejotzingo, to the southwest Chiantzingo, to the west San Salvador el Verde with whom it also borders to the northwest. (Aguilar 2021).

For the present work, micro and small businesses in the commercial sector of the municipality of San Martin Texmelucan are considered as participants in the study, which according to the SIEM consist of 1127 registered companies, of which 45% are commercial, 30% are services and the rest are industrial.

The Inter-American Development Bank (IDB, 2017), reports that in Latin America, this business sector has been characterized by its high level of informality, high 79.8% mortality rate and low internationalization, aspects that together with their poor financial culture and difficulties in accessing bank credit make them vulnerable organizations because they lack adequate conditions that allow them to innovate, operate and grow.

Among the current requirements for companies is innovation, which has been evolving and becoming more precise in its types. The types of innovation where there is greater agreement by the scholars of the subject are: innovation in the product, process and market. Innovation is a requirement to be met by companies if they want to remain in the market (Muñoz, 2022).

Methodology

In order to determine what has already been generated on the subject, as well as the formative process, a systematic review of documents was carried out through the scientific databases: Scielo, Science Direct, RedAlcy and Google Scholar.

The activities that were developed, according to the scientific method, observed in Figure 2, show three moments of activity, in the first one, preliminary activities were carried out such as defining the scope; in the second one, the development of the work itself, to close in the third moment with the interpretation of the information and drawing the conclusions.

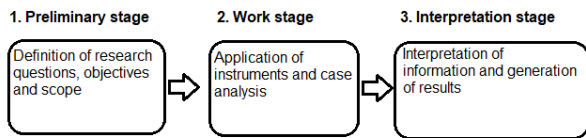


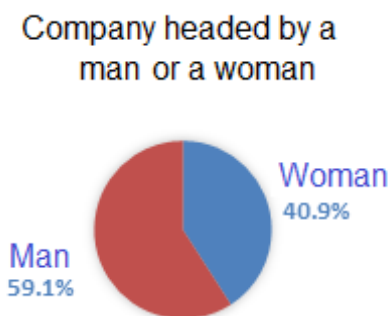
Figure 2 Stages of the methodology developed
Source: Own elaboration

An instrument was also constructed and applied to determine the current situation of those involved; technological tools such as forms were used for its application, which also generated graphs and simplified the statistical treatment of the information.

For the development of the research, the project was presented in the call issued by the Tecnológico Nacional de México, which, due to budgetary limitations, could not be supported, in spite of having obtained a positive result; therefore, for the development and execution of the research, the resources were internal to the Institute.

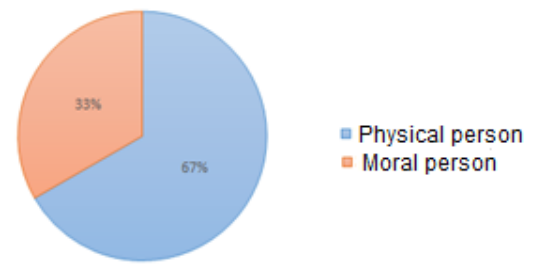
Results of the diagnosis

Figure 1 shows that the majority of those who participated in the survey in these companies are led by men (59.1%), while 40.9% are led by women.



Graphic 1 Leadership in companies
Source: Own elaboration

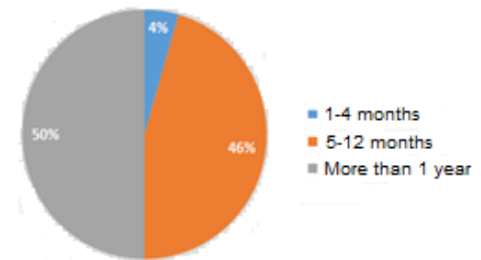
Constitution of the company



Graphic 2 Incorporation of companies
Source: Own elaboration

Graphic 2 shows that of the total number of companies in the study, 66.7% stated that they were incorporated as a legal entity, while the remaining 33.3% were individuals with business activities. Another indicator that is very important, because it speaks of the stability that the company has in relation to personnel, because it reflects turnover, is shown in Graph 3.

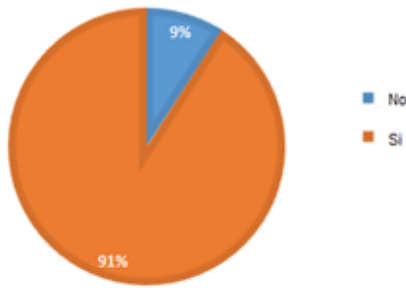
Frequency of change of workers



Graphic 3 Staff turnover
Source: Own elaboration

A healthy company is characterized by the stability of its personnel, because in this way it can develop together with its employees (organizational development). It can be seen that 50% of the respondents have a high turnover, because their personnel remains from 1 to 4 months (4%) or from 5 months to 1 year (46%); and the remaining 50% have more than 1 year of personnel. This point deserves special attention, because high turnover is a sign of bad organizational climate and with it the company can stagnate or go bankrupt.

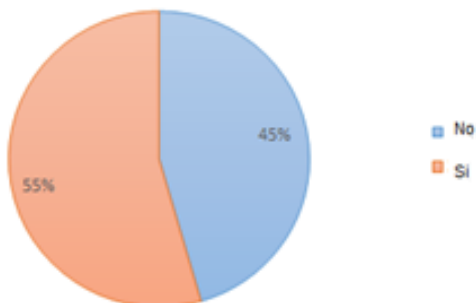
Cost control



Graphic 4 Expense control
Source: Own elaboration

Graphic 4 shows the result of the question, where it was asked whether the company has a written record of how much it pays each month for rent, electricity, equipment, maintenance, transportation, advertising and other indirect manufacturing expenses; here theoretically everyone should answer affirmatively, however, 9% responded that they do not have these controls, which is delicate, since this is valuable information for making future decisions, and without information to make them, they run the risk of taking improper actions.

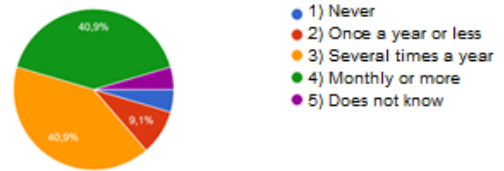
Staff benefits



Graphic 5 Employee benefits
Source: own elaboration

An important aspect for the growth of the company are the obligations towards the workers, through the benefits, it is noteworthy that 45% of those surveyed do not offer the benefits of law, while 55% do. This is very important data, because if the authorities come to visit them, they will be in trouble, because for fines and surcharges companies can close their businesses.

Goal review frequency for improvement



Graphic 6 Performance evaluation
Source: Own elaboration

In engineering areas it is said: "what is not measured, is not controlled", that is why it is important to perform performance evaluations, in graphic 6, we can see the actions taken in this sense by the companies studied.

Setting goals related to sales



Graphic 7 Setting annual goals
Source: Own elaboration

A successful company is characterized by having clear goals, so we investigated whether the companies under study at least have annual goals, finding that 95.5% do, and it is noteworthy that 4.5% do not carry them out; here it would be desirable for 100% to do so.

Do you know your annual income and expenses?



Graphic 8 Annual income and expenses
Source: Own elaboration

In the healthy operation of the companies, an important factor is the knowledge of their annual income and expenses. It is noteworthy that 36.4 percent do not know how their results have been, 18.2 percent directly say they do not know and the same percentage says that maybe. This can be seen in Figure 8.

Results

Based on what has been presented in the diagnosis, a letter of invitation is extended to take some courses designed according to the needs found.

Thanks

We are grateful for the facilities granted by the directors of the Institution to be able to develop this work, as well as the participation of students in their thesis development and research credits.

Conclusions

The importance of MSMEs in the Mexican economy plays a fundamental role because they provide income to the national economy, but in order for them to generate this level of income and continue playing a fundamental role, it is necessary that MSMEs have a good level of competition and above all that they are successful so that they can generate more production and higher levels of income, otherwise, the participation they have would be lower and in some cases the competition could take them out of the market and more foreign competition that is inserted in our economy, coupled with economic fluctuations. In order for SMEs to take off and have development and growth, it is necessary that they have the required changes. In the Mexican economy, development is sought, which cannot be achieved if there is no economic growth first, in order to allocate income to economic development, Small and Medium Enterprises are a source of economic contribution to the Gross Domestic Product.

Once the diagnosis has been made, among the proposals to promote MSMEs, there are 2 ways to make improvements; the first is internally to make changes in their ways of operating and managing them, implementing innovations, promotion, etc., as well as generating strategies, associations, among others. There are different problems that companies face, for which some may be causes of failure and that the company is not being efficient in what it does. Among the common problems we have that; many times MSMEs do not plan for the future, since their decisions are short term.

The result of stage 1 of the project, the diagnosis, is presented in the second stage of intervention through consulting and training to find ways to help them improve and overcome the limitations that do not allow the necessary growth.

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Functions of the customs tariff in Mexico; 28 years after Marrakesh**Funciones del arancel aduanero en México; 28 años después de Marrakech**MORENO-YEBRA, Felipe^{†*}*Universidad de Guanajuato, Campus Guanajuato, Economic and Administrative Sciences Division, Department of Management and Business Administration, Mexico.*ID 1st Author: *Felipe, Moreno-Yebra* / ORC ID: 0000-0002-0049-5651, Web of Science Researcher: IDHHZ-5922-2022, arXiv Author ID: FelipeMY

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Abstract

Mexico experienced a before and after 1994. Previously, the Customs Tariff was used as a protectionist instrument to support The Import Substitution Industrialization Model (ISI) which sought to strengthen the domestic industry with very high tariffs (1947-1979). The tax system of the time underwent interesting changes to avoid multiple taxation, a situation that was overcome with the National Fiscal Coordination System (1980). Mexico began its insertion into globalization in 1979 to express its intention to join the GATT, and objective that was achieved until 1986. In 1994, the entry into force of the North American Free Trade Agreement (NAFTA), coincided with the Marrakesh Declaration. Nowadays, 27 years have been passed in which Mexico, contrary to the ISI model, has established itself as an open economy, where the customs tariff has a dual role: it is a key instrument to stimulate trade between partner countries and, on the other hand, it is a solid barrier to prevent the benefits of Trade Agreements from being extended to non-signatory countries.

Objective: analyse the function of the customs tax in Mexico.

Methodology: documentary research.

Contribution: show the function of the customs tax in an open economy.

Tariff, Customs, Taxation**Resumen**

México vivió un antes y un después de 1994. Antes, el arancel aduanero se manifestó como instrumento proteccionista para apuntalar el modelo Industrialización por Sustitución de Importaciones (ISI) donde se pretendió fortalecer la industria nacional con aranceles aduaneros muy altos (1947-1979). El Sistema Tributario de la época sufrió interesantes cambios para evitar la recurrente múltiple tributación, situación superada con el Sistema Nacional de Coordinación Fiscal (1980). México inicia su inserción a la globalización en 1979 al manifestar su intención de adherirse al GATT, objetivo que cumple hasta 1986. En 1994, la entrada en vigor del Tratado de Libre Comercio de América del Norte (TLCAN), coincide con la Declaración de Marrakech. A la fecha han pasado 27 años en los cuales México, contrario al modelo ISI, se ha consolidado como economía abierta, donde el arancel aduanero tiene un doble papel: es instrumento clave para estimular la actividad comercial entre países socios y, por otro lado, es barrera sólida para evitar que los beneficios de los Tratados Comerciales no se extiendan a países no signantes.

Objetivo: analizar la función del tributo aduanero en México.

Metodología: investigación documental.

Contribución: mostrar la función del tributo aduanero en una economía abierta.

Arancel, Aduanero, Impuestos

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Introduction

By way of Introduction: Initial Considerations

Multiple Taxation and its elimination through the National System of Fiscal Coordination

Tariff policy in Mexico was and will be of transcendental importance. Although this study focuses briefly on the situation of the customs tariff 20 years after Marrakech, it is important to describe how the Mexican tax system, henceforth referred to as the STM, evolved in order to prepare for the impetuous race to join a global market, as we believe that customs tariff policy was not isolated from other taxes.

The distribution of resources in a country like Mexico is complicated to date. The issue has been dealt with for a long time. The First National Fiscal Convention in 1925 tried to solve it, highlighting the lack of coordination between the exploitation of tax sources, as they had their own taxation system (Marcela, 2005). However, the efforts to eliminate multiple taxation were not enough, so other solutions had to be found.

In 1980, two events were relevant for the STM. First, the Value Added Tax (VAT) was introduced to replace the Federal Tax on Commercial Income. Second, the National System of Fiscal Coordination was formally created. These situations resolved the problem of multiple taxation. To date, the problem of multiple taxation has been eliminated; the taxes levied by the Federation, States and Municipalities do not create tax competition. The problems now arise in the amounts to be collected to meet public expenditure.

Import Substitutive Industrialisation (ISI). Protectionist Tariff Policy

In the mid-1940s and until the 1980s, Mexico opted for an inward growth model called Import Substitution Industrialisation, ISI (Héctor, 2013), where the aim was to build an industrial sector to meet domestic needs, of course, consuming what the country produced and, in parallel, imposing quantitative restrictions on imports, in terms of customs tariffs, replacing with ad-valorem tariffs the specific ones existing at that time (Héctor, 2013, p. 34).

Unemployment, weak industry, among others, were arguments for increasing tariffs during the 1950s and 1960s, which were later replaced by quantitative import restrictions (Héctor, 2013, p. 35). Thus, the reaction at the time was predictable: if the good could be acquired in the domestic market, the border would be closed.

The protectionist tariff policy designed to substitute imports was detrimental to exports (Rogelio, 1980). The fact that goods were produced domestically did not ensure the best costs, in fact, they were generally higher. Therefore, it was difficult to compete in the international market.

Tariff policy in the ISI was characterised by high import barriers, where import tariffs for manufactured goods averaged 74% for Mexico, 84% for Argentina, and 184% for Brazil (Paola, 2011). The tariff barriers referred to above allowed, in the Mexican case, to succeed in blocking the border by preventing the entry of manufactured goods.

During the aforementioned period, the state's import tariff policy was constant (Manuel, 2015), raising customs tariffs in an attempt to strengthen national industry.

Thus, they created a sophisticated protectionist section (Miguel, 1993) and it was configured as follows: a) Very high tariffs (ad-valorem and specific) for consumer goods. Raw materials, machinery and equipment were taxed lower through legal rules designed exclusively for novel industries, b) prior permission requirements, c) official import prices to combat under-invoicing and d) quotas, in order to control and allow the entry only of quantities that were not produced in the domestic market.

At the time, imports had to comply with the requirements outlined in the previous paragraph. Very high tariffs, prior permits, official prices and quotas made it possible to substitute imports with domestically produced goods. The above is a brief reference to the customs tariff in the Mexican legal scenario prior to Marrakesh.

Implementing the New Legal Framework for a successful integration in the globalized world

Mexico and the GATT, preparations for the Trade Agreements

In 1979, still with strong protectionist sentiments, Mexico announced its intention to align itself with the GATT, the preceding reflections cannot be seen without the commitments made by it. The pressure from the United States for Mexico to join GATT was significant, as it was claimed that it would improve trade relations. It was clear that Mexico could not remain outside the international dynamic, but it was said that it had to do so decisively and under conditions that favored our country (Jaime, 1979).

After several years of negotiations, Mexico finally joined the GATT in 1986. The accession obeyed the guidelines that the latter enunciated regarding the configuration of Customs Unions and Trade Agreements between member countries, where, of course, there were also the rules to be followed for the negotiations. It is here where the relevance of the Customs Tariff as a negotiating instrument to differentiate the products that will be traded between the partners arises.

For Mexico, insertion into a globalized economy presented great challenges, as it had to create norms, reform existing ones and, in general terms, adapt its positive law to the guidelines acquired by the commitments assumed in the International Agreements.

Mexican Customs Law had to adapt to globalization, because now, if the world is seen as a single market where the marketing of goods is carried out without obstacles, the legal rules need to adapt to the new rules of the game. Thus, Customs Law has been characterized as three-dimensional (Oscar, 2005) as it brings together domestic, tax, non-tax and international rules, but we prefer to speak of modern Customs Law (Blanca, 2011).

Domestic legal norms are those that regulate the taxation aspect of Customs Law, among others, the Customs Law, the General Import and Export Tax Law, the Value Added Tax Law, the Income Tax Law, the New Car Tax Law, the Foreign Trade Law, the Federal Tax Code, and the Special Tax on Production and Services Law. All of them were adapted by including precepts derived from International Treaties signed by Mexico, which to date make up an abundant framework of applicable regulations (Gerardo, 1996) to customs operations.

Customs, in a globalized world, takes on a leading role as it must modernize (Pedro, 2011), allowing the flow of goods, retaining (Enrique, 2015) the goods until the importer complies with his legal duty (Luis, 1997) born from the introduction of goods (Felipe, 2014) into national territory.

Mexico and the OECD

Mexico's acceptance into the Organisation for Economic Co-operation and Development (OECD) in 1994 coincided with the entry into force of NAFTA and the Marrakesh Declaration. This was obviously no accident, since the success of NAFTA required Mexico's acceptance into the OECD in order to "perfect" its insertion into the global economy.

The OECD, strictly speaking, is a "forum to discuss the development and improvement of social and economic policies, as well as to share experiences, seek answers to common problems and coordinate domestic and international policies to increase globalization" (Laura, 2002). Since 1992, the Mexico report recommended working on structural reforms, increasing investor security and achieving macro-stabilization (Diana, 2022).

The OECD was created to "expand the economy and employment, promote economic and social welfare by coordinating the policies" (Laura, 2002, p. 47) of the member countries, therefore, the OECD represents the guidelines to follow for the design of public policies of the Mexican state, hence its importance.

Evolution of the Customs Tariff. Tariff relief in the context of Free Trade Agreements

The customs tariff, manifested as a General Import Tax, was a key instrument in the negotiation of Trade Agreements. Thus, at this stage of its evolution, the customs tariff is the stimulus, in relation to the preferential treatment between the signatory countries of the Treaty, to increase trade operations between the partner countries.

From the North American Free Trade Agreement (NAFTA) to the Treaty between Mexico, the United States and Canada (TMEC). Tariff Relief and Origin Criteria

In Chapter IV of the then NAFTA, relating to the rules of origin, Canada, the United States and Mexico stated the requirements governing the issuance of the certificate of origin, a test that allowed the application of the General Import Tax rate in accordance with the treaty: the preferential rate.

In this scenario, the tariff elimination periods, which elapsed in the period prior to the modernization and conversion to the TMEC, were transcendental.

Thus, as the deadlines progressed, the rates were gradually reduced, as follows:

“Article 302. Tariff relief

1. Except as otherwise provided in this Agreement, no Party may increase any existing customs duties, or adopt any new customs duties, on originating goods.
2. Except as otherwise provided in this Agreement, each Party shall progressively eliminate its tariffs on originating goods in accordance with its Schedule to Annex 302.2.

3. At the request of any Party, the Parties shall consult to examine the possibility of accelerating the elimination of duties provided for in their schedules of relief. Where two or more of the Parties, in accordance with their applicable legal procedures, approve an agreement on the accelerated elimination of customs duty on a good, that agreement shall prevail over any customs duty or any period of relief specified in accordance with their schedules for that good.
4. Each Party may adopt or maintain measures on imports for the purpose of allocating the quota of imports made under a quota through tariffs (quota tariff) set out in Annex 302.2, provided that such measures do not have trade-restrictive effects on imports in addition to those resulting from the imposition of the quota tariff.
5. On the written request of either Party, a Party applying or proposing to apply measures on imports under paragraph 4 shall consult to review the administration of such measures.

To date, in the TMEC, information on origin criteria has been described in Chapter IV, where it should be noted that there have been considerable changes that are beyond the scope of this study, but we should note the increased complexity and requirements for their issuance.

To date, there is no concern about the customs duties paid for originating products, since the tax relief can be said to have been achieved. However, the scenario built over the 28 years of NAFTA's life, together with the SSSM, is affected by the actions of the State, political positions, business chambers, among others, which demand, in certain cases, a paternalistic attitude to protect some industrial sectors or, in any case, priority to political marketing rather than to the commitments assumed.

Trade Agreements in Mexico; succinct reference with special emphasis on the negotiation of the Customs Tariff

The United States of America is Mexico's main trading partner (Carlos, 2017), and for this reason, we have gone into some detail in this regard. However, Mexico has an interesting network of trade agreements in which the customs tariff has proven to be the perfect stimulus to increase trade relations between partner countries.

Trade Agreement with the European Union

On 26 June 2000, the Decree Promulgating the Economic Partnership, Political Coordination and Cooperation Agreement between the United Mexican States and the European Community and its Member States, the Decision of the Joint Council of this Agreement, and the Decision of the Joint Council of the Interim Agreement on Trade and Trade-Related Matters between the United Mexican States and the European Community were published in the Official Journal of the Federation. From the transcript, the economic aspect is noted and is the focus of our comments.

Among the agreements related to the customs tariff, we find that the partner countries declare the progressive and reciprocal liberalisation of trade in goods, in accordance with Article XXIV of GATT 1994, which was developed in Articles 6 and 8 of the aforementioned decision, for products originating in the European Union and Mexico, respectively.

Thus, for products originating in the European Community, a distinction is made by categories ("A", "B", "B+", "C" of Annex II of Mexico's Schedule of Duty-Free Treatment) of the periods of relief according to their category (León, 2022). On the other hand, for products originating in Mexico, the periods and percentages of the Community's duty-free allowances are distinguished by categories ("1", "2", "3", "4", "4a", "5", "6", "7" and "8" of Annex I of the Community's Schedule of Duty-Free Treatment).

The customs tariff, as in NAFTA, becomes the key instrument for negotiating the agreement under study. In this regard, in order to apply the preferential rate, the importer must present a certificate of movement of goods, commonly known as EUR1. The latter is issued by a competent authority, unlike the certificate of origin in NAFTA, where its issuance is free. Mexico currently has 14 Trade Agreements (Economía, 2022) from which multiple assumptions emerge where the customs tariff is the protagonist. The economic reality of our country cannot be seen without the treaties as mechanisms for attracting investment. The preferential tariff rate makes it possible to build logistical chains between companies resident in the partner countries. Unfortunately, due to the lack of space for this paper, we cannot go into the other treaties in depth, but we will extend our comments to those that have not been analysed.

The Customs Tariff as a protectionist instrument: consequences for countries that are not signatories to Free Trade Agreements

The tariff also serves as a protectionist instrument, especially when the Trade Agreement contains an obligation in this regard. Article 2.5 of the TMEC, formerly article 303 of NAFTA, sets out restrictions on the refund, reduction or exemption of customs duties paid or owed, in relation to a good imported into the territory of the parties. We have already ruled on this aspect of the tariff (Felipe, La Presunta Influencia del Artículo 303 del Tratado de Libre Comercio de América del Norte en el Hecho Imponible del Impuesto General de Importación, 2012), however, it is relevant for the purposes of this paper to briefly refer to it.

Affectation of the Draw Back programme; reduction of the amount of customs duty to be refunded. The then article 303 of NAFTA, now 2.5 of the TMEC, and in relation to the terms -restriction to drawback-, affected the Draw Back programme, as previously, in the case of definitive imports and if these were exported within the following year, 100% of the duty paid was refunded. Now, only the amount that its client in the destination country pays as customs duty in relation to the returned good will be refunded, among other assumptions (Economía, www.siicex.gob.mx, 2022).

Affecting the Decree for the promotion of the manufacturing, maquiladora and export services industry (IMMEX Decree).

The IMMEX Decree (Economía, www.sicex.gob.mx, 2022) is undoubtedly the most important promotion programme in Mexico, as it allows imports of raw materials, parts and components for a specific period of time without paying customs duties, as they are only determined and, if the budget is met, the obligation to pay arises.

When the goods are introduced into Mexico, allowing the customs duty to be determined and deferred, the stimulating aspect of the aforementioned decree is manifested, however, under the obligation of Article 303, now Article 2.5 of the TMEC, if the goods, after their transformation, are exported to the United States or Canada, the obligation to pay arises.

The obligation to pay the customs duty mentioned in the preceding paragraph arises from the protectionist nature of articles 303 of NAFTA and now article 2.5 of the TMEC, since the legislator, by stating this obligation to pay, intends to limit the use of the benefits only between trading partners.

The protectionist facet of NAFTA/TMEC is understandable, as the preferential tariff rate arises from the rights and obligations of the signatory countries; consequently, the restriction seeks to prevent the benefits of NAFTA from extending to other countries.

The Customs Tariff as a catalyst for economic activity

The logic of this study allows us to make a pronouncement on the customs tariff as a catalyst for economic activity, because in a country where the development model is based on exports, the tariff can be an obstacle or a stimulus. Hence, we can point out the following:

1. The preferential customs tariff, negotiated by Mexico in its Trade Agreements, is an ideal stimulus to increase trade relations with partner countries. It is well known that the United States and Canada, respectively, are the main trading partners. Therefore, NAFTA is the most important trade agreement for Mexico.
2. The preferential and general customs tariff, in connection with the promotion programmes (Draw Back and IMMEX), among others, create a favourable tax environment for foreign trade operations. Where, if applicable, it is possible to apply for a refund of the customs duty paid. On the other hand, it is possible to defer the payment of customs duties for subsequent payment, reduction or even exemption. However, the administrative burden of the aforementioned programmes is an element to consider, as failure to comply with the obligations entails penalties by the Federal Treasury.
3. The preferential tariff rate of the Trade Agreements and the benefits of the promotion programs, among other benefits, may be combined, creating, as already mentioned, favorable tax environments for foreign trade operations.
4. Final Reflections

Although we have made several reflections in this paper, it is important to state the following:

Talking about the customs tariff in Mexico 28 years after Marrakesh implies the need to clarify that before 1994, Mexico undertook important reforms to prepare for its insertion in the globalized world.

Mexico's participation in globalization required it to join the international organizations that govern world trade: the World Customs Organization, the World Trade Organization, the Organization for Economic Cooperation and Development, among others, in order to create trade treaties that will allow it to use the customs tariff as the main negotiating element, since the preferential tariff rate is the catalyst for trade relations between partners.

Twenty-eight years after Marrakesh, Mexico is a purely export-oriented country, so the customs tariff is a key element that acts as a stimulus and protector of tariff benefits.

The abundance of trade treaties in Mexico allows us to observe the above mentioned and they have become an important source of law in the current Mexican Customs Law.

International organisations have been a cornerstone for building trade relations in the world, however, perhaps it is time to reflect, discuss and decide on adjustments, as most of them were created in the immediate context of the Second World War.

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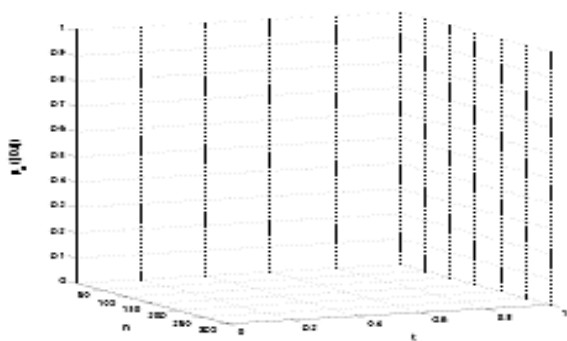
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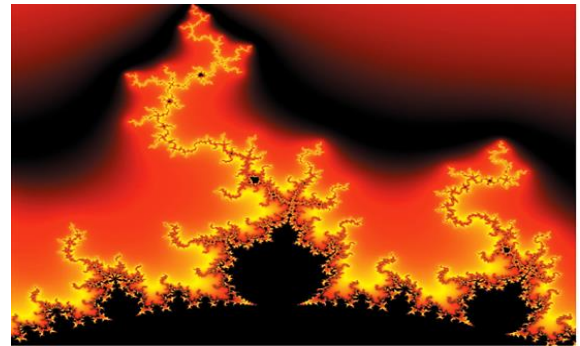


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