

# Development of Entrepreneurship in ZMG: Growth Startups and Precursor of Innovation and Economic Development

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## Abstract

The aim of this research is to analyze from the perspective of the theory of entrepreneurship, which are the characteristics of a "Start-up" and how is considered a new type of company within the economic context due to its specific characteristics. Based on a literature review, it is identified the historical context of entrepreneurship until reach the specific context of the conditions of MAG to generate the creation and development of Startups, evaluating the variables that are important to consider given assessments of other ecosystems of successful entrepreneurship. Also considering those, which are optimal conditions that trigger entrepreneurship and creating Startups based on technology and innovation? Concluding that Mexico from their national policies and the state of Jalisco from state development plan has resulted in the GMA has created the conditions to promote the entrepreneurial ecosystem; however, there are key indicators that slow detonation and growth of start-ups based on technology and innovation.

**Keywords:** Start-ups; Entrepreneurship; Mexican entrepreneurship

## Introduction

Entrepreneurship is an activity that has developed over hundreds of years. However, the treatment study of entrepreneurship has had different approaches over time and has sometimes been confused and mixed definitions. Entrepreneurship awarded the creation of new businesses. However, how such a concept has several implications across different studies and related disciplines, sometimes often confused with theories of administration and management.

Over the years and due to the dynamism of markets, globalization and other external factors is that the characteristics of the firms have modified and adapted. It is no exception in the stage of starting a business. For them is that new models have emerged some models of companies because of its specific features is that do not fall into the traditional categories of the firm. Therefore, the study of these is very vague. However, in recent years these enterprises, which later will call as start-ups is starting to become more important in the economic and business context. It is likely to start and consider them as the birth of a new type of firm. Perhaps it is ambitious, granting this category to these new emerging firms. However, the international context starts showing that the start-ups are a model of companies that begin to take a strong role in the global context.

Following this new trend in business dynamics that also involves issues such as technological development, innovation, scalability, internationalization among other transcendental concepts, it is necessary to understand the position assumed by the country and the region to this phenomenon. This in order to avoid business and economic backwardness, which sometimes translate into knowledge and intellectual backwardness and detonate in slowing economic development.

## Background of the Problem

Entrepreneurship is an activity that has taken place for hundreds of years. However, the treatment study of entrepreneurship has had different approaches over time and has sometimes been confused and mixed definitions. In the text, the authors Griesa and Naude cite David Hart entrepreneurship defined as the process if begin, and continue the expansion of new businesses [1]. Because of this, entrepreneurship credited as the creation of new businesses. However, as such the concept

of entrepreneurship has several implications across different studies and related disciplines.

One could understand the theoretical historical development of entrepreneurship as follows, based on the theoretical review in the book "Entrepreneurship in Theory and History". The history of entrepreneurship dates back to 300 years ago, according Pepelasis [2] which shows a summary of the main theoretical contributions of entrepreneurship and its historical development since the beginning of the term venture. Cassis [2] summarizes the contribution of Richard Cantillon as follows: The entrepreneur is the specialist in risk taking. The entrepreneur assumes the risks caused by price fluctuations in consumer markets. Unlike employees who receive a 'safe' salary in the short run, the entrepreneurs are willing to take the risk of economic transactions [2].

Moreover, according to Pepelasis and Cassis [2] the author Frank Knight redefined the contribution of Cantillon, distinguishing between the concept of risk and uncertainty. By separating these two concepts, assume that the risk can be "insured" and by blunted, however, the uncertainty is no assured.

Given that, the risk refers to the relative frequency based on experience of a phenomenon. Uncertainty refers to the unique events and that the probability of occurrence is under an assumption. On the other hand, it claims that the gain or business profits are the reward for assuming uninsurable risks and uncertainty, is the reward of the pure entrepreneur. With the freedom of entry into the industry, profits in one industry may exceed profits in other industry in the long term, only

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**Received** October 26, 2016; **Accepted** December 24, 2016; **Published** December 31, 2016

**Citation:** Vargas-Hernandez JG (2016) Development of Entrepreneurship in ZMG: Growth Startups and Precursor of Innovation and Economic Development. Bus Eco J 8: 277. doi: [10.4172/2151-6219.1000277](https://doi.org/10.4172/2151-6219.1000277)

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if the uncertainties are greater in the most profitable industry, in other words, if demands on entrepreneurship are higher in that industry [2].

Years later Joseph Schumpeter [3], Austrian economist awarded the most basic notions of entrepreneurship who gives a heroic vision of entrepreneurs. He tells that entrepreneur generates dynamism, after creating new industries, which makes it a precursor of structural changes in the economy. Among the characteristics of the entrepreneur, Schumpeter mentions that innovates through new or existing elements, so, it can be understood that is not pure inventive and sometimes turn to adapting existing inventions. Also he mentions that the entrepreneur is not the owner of capital, since in most cases are funded by external entities, which is another characteristic of entrepreneurs, the constant search for resources, but they are the ones who make the crucial decision to take the risk.

Schumpeter [3] developed his work Theory of Economic Development; in this theory rejected two great courses. The first is that economic change develops exogenously, and the second is that business activity is a response to exogenous forces. In refuting these assumptions, he built endogenous growth theory. In this theory, he defines the entrepreneur as the precursor source of all dynamic change in the economy. Schumpeter attributed the adjective "creative rebels" to entrepreneurs. They are responsible for generating the necessary imbalance generated by the dynamism of the economic system; therefore, they play a key role in economic development, breaking with routine processes and systems through innovations and value creation.

Kirzner cited by Pepelasē and Cassis [2], another Austrian economist, entrepreneurs are largely precursors of economic activity since for them one of the main motivators is the pursuit of high economic performance. For Kirzner they seek for their benefit in buying low and selling high. Another characteristic attributable to entrepreneurs is that they possess the quality of a clearer judgment to improvise decisions when faced with a discrepancy. Coining to Kirzner that through their studies embedded in the Stream of Neo- Austrian School is emerging concepts such as the "entrepreneurial spirit; which already formally defined as alertness to profit opportunities. Under this assumption of constant alert to opportunities, the entrepreneur is a balancing force between the opportunities and the economic environment.

Finally, according to Casson [4] entrepreneurs are very important figures in the capitalist economy and society. They are decision makers in complex cases appealed to his trial, for example, when resources are scarce or there is a situation of uncertainty.

After detailed explanation of the historical development of entrepreneurship, it is understandable that it is possible to undertake it within traditional structures of the firm. However, the emergence of dynamic conditions and global demands are emerging new structures outside the canons of traditional firms.

### Conditions to generate an entrepreneurial ecosystem

Sustainable entrepreneurial ecosystem is defined how interconnected groups and networks of actors in a community are committed to the development and creation of new companies [5]. This is a very general definition for it to achieve to be more specific, is that a detailed list of these networks and specific groups that must exist in order to affirm that the conditions is given to generate venture in a city. Then the author Cohen [5] presents a list of the seven main elements of the necessary conditions to generate venture.

- a. Informal networks

- b. Formal networks
- c. Universities
- d. Government
- e. Professionals and support services.
- f. Capital services
- g. Reserve and talent generation

Given the specific characteristics of a start-up and the context of the ecosystem of entrepreneurship, both in Mexico and in the Metropolitan Area of Guadalajara (MAG), it needs to define whether there are appropriate conditions to encourage the creation of start-ups and the variables of the entrepreneurial ecosystem models in which to take action.

### Research Question

Are there adequate conditions for generating start-ups for the ZMG?

### Justification

It is Important to assess the context of entrepreneurship in the local area, since many adjectives are being Attributed to Jalisco as the "Mexican Silicon Valley" or "Jalisco Capital of innovation" Doing this analysis will allow to understand this situation.

The analysis on this matter is justified in few studies on the dynamics of start-ups in Mexico and much less to specific ecosystems like the MAG. There are some agencies and studies already evaluating entrepreneurship in various dimensions from the current conditions of the country to promote entrepreneurship to more specific indicators related to innovation and technology, but without taking into account the specific context that require start-ups. Moreover, to study the dynamics of Startups as a new business structure is as important as this phenomenon is showing up increasingly and is emerging more strongly. There are hubs, innovation, and entrepreneurship ecosystems, which created the atmosphere and the conditions for growth start-up, such as the city of Victoria in Canada, Silicon Valley in California and Tel Aviv in Israel.

Given the specific characteristics of a start-up and context of the ecosystem of entrepreneurship, both in Mexico and in the MAG, it is a need to define whether there are appropriate conditions to encourage the creation of start-ups and what are the variables if the entrepreneurial ecosystem models in which action is taken.

### Conceptual-Theoretical Framework

#### Entrepreneurship

The process of initiating and continuing the expansion of new Businesses [1] to entrepreneurship is credited the creation of new businesses. However, such a concept has diverse implications across the distinct studies and related disciplines.

**Startups:** A start-up is a technology-based business, high growth potential and a high degree of scalability. Startups research has focused on analyzing how new companies have the ability to develop new products and services and reach a large number of customers in a shorter period (Rasmussen and Tanev). About the growth of start-ups is reaching more customers in a shorter period known as scalability, which can be one of the main features of a start-up.

According to Steve Blank, a startup is a temporary organization in search of a business model scalable and replicable [6]. Temporal refers to having a lifetime to stop being start-up and become a consolidated, or fail and evolve to another detected business opportunity. The word search refers to the market in which it is involved, unlike traditional businesses operating in mature markets, start-ups seeking new business models in order to create, modify or have existing markets [6].

**Characteristics of startups:** A scalable start-up usually requires a population of over 100 million people. If your country does not have that, the start-up needs to be born world [6]. Trimi and Berbegal-Mirabent [7] have discussed new trends in the design of the business model, focusing on open innovation, customer development, agile development, and methodologies "lean". That conclusion they reach is that the design of business models based on innovation should seek quick iterations and the adoption of a philosophy of trial and error to validate the assumptions of the business model and the specific characteristics of goods or services.

According to Stavnsager and Tanev [8] the authors make a comparison between startups and global firms must be born yet we only we will focus on the features that the authors listed about start-ups.

- 1) Type of company: Start-up technology.
- 2) Market: New market niches.
- 3) Marketing strategy product: Model cycle technology adoption/ cross into new market niches.
- 4) Product development: New product development/prototyping/ testing/Dynamic Development.
- 5) Business model: dynamic model/pop business.
- 6) Focus entrepreneurship: entrepreneurship directed hypothetically.
- 7) Outlook key attributes of business: Ex ante.

**Importance of startups:** According to the Mexican Institute for Competitiveness, the dynamics of startups has come to challenge much of the theoretical structures have on the theories of the firm, business management and economic behavior. For example, some technology startups in less than 5 years have achieved greater value assessed to all listed companies belonging to a conglomerate. Given to this dynamism has made that capital investment in technology issues have a growing five times greater than the rest of the economy.

## Innovation in Mexico

According to the World Intellectual Property Organization (WIPO), Mexico improved 16 places in the Global Innovation Index 2013 over the previous year. In 2012, it was in the 79<sup>th</sup> position and managed to move to position 63. This puts it in a position slightly above the average of the 142 countries assessed. However, its position remains less competitive than other Latin American countries like Costa Rica (39), Argentina (56) and Colombia (60).

There is another report issued by the World Economic Forum, Global Technology Report 2014 puts Mexico at the site 79 of 148 countries surveyed, down 16 positions from the previous year. Although the report can recognize similar to those highlighted by WIPO strengths, it indicates that the innovation ecosystem in Mexico needs to be strengthened and, in general, Mexican companies have a low capacity to innovate, resulting in low economic impacts and population which focuses heavily on low-productivity activities, and few jobs that are considered knowledge-intensive [9].

## Quantitative investment analysis innovation

According to the World Intellectual Property Organization (WIPO) investment in research and development, according to the World Bank, in 2012, Mexico spent the equivalent of 0.37% of GDP, while Russia, for example, spent 1.0 Percent, Brazil 1.1 Percent, China 1.4 Percent and South Korea 3.2Percent.

One of the policies of the federal government has decided to attack with the aim of gradually increasing investment category at least the equivalent of 1% of GDP. International experience shows that the most successful entrepreneurship based on innovation, cases are those articulated under models "triple helix": that is, innovation does not arise in isolation, but thrives on networks that bring together entrepreneurs, research centers and support from government agencies.

In Mexico, by 2010 according to the SEP used in the report of the World Intellectual Property Organization (WIPO), 25% of Mexican companies that conducted research and development, it was in connection with a research center. According to this report, a key incentive is to have a robust and effective system of protection of intellectual property rights, and intangible to be a tool for entrepreneurs.

According to WIPO, Mexico local produce 0.7 patents per 10,000 inhabitants. Brazil produces twice, Russia 20 times and China 40 times. In the Federal District 36.3 patent applications filed per million inhabitants in 2012. In Oaxaca there were only two. Similarly, the Federal District has 14.9 researchers per 10,000 inhabitants, while Oaxaca has only one. In the innovation landscape in Mexico, there are cases of innovative regional clusters of remarkable success. The generation of new clusters of entrepreneurship and innovation requires an integrated strategy that responds to local vocations [9].

## Mexico and Entrepreneurship

### Public policies in Mexico

In matters of importance to the government in entrepreneurship theory, for the promotion of appropriate conditions for the development of fruitful economic activities and enterprise creation conditions, an issue tops the public agenda and is evident in the country's development Plan. As a general goal, the National Development Plan 2013- 2018 locates the entrepreneurship and innovation within the national goal of "Achieving a prosperous Mexico" leads to the strategy To develop the strategic sectors of the country" and a specific action line is "to encourage entrepreneurs and strengthen micro, small and medium enterprises.

About to encourage entrepreneurs and strengthen micro, small and medium enterprises, the following specific action lines are as follows:

- a) Support the successful integration of micro, small and medium enterprises to the value chains of more dynamic strategic sectors, with more potential for growth and job creation, in agreement with the state governments of the country.
- b) To promote entrepreneurship through the creation of an educational environment, finance, legal protection and adequate competition.
- c) Design and implement an information system, monitoring, evaluation and dissemination of the impact of entrepreneurs and micro, small and medium enterprises.
- d) Promote intensive programs to develop skills in information and communications technology, and innovation to promote the

creation of high added value of micro, small and medium enterprises ecosystems.

- e) Improving technical advisory services to build an entrepreneurial culture.
- f) Facilitate access to financing and capital to entrepreneurs and micro, small and medium enterprises.
- g) Create entrepreneurial vocation from an early age to increase the critical mass of entrepreneurs.
- h) Support the business escalation of micro, small and medium-sized Mexican companies.
- i) Increase the participation of micro, small and medium enterprises in production chains, as well as its export capacity.
- j) To promote social projects, green entrepreneurs and high impact.
- k) To promote the creation of jobs through the development of entrepreneurial projects.
- l) Encourage the creation and sustainability of formal small businesses.

Within these 12 lines of strategic action, it can highlight specific actions such as the creation of the National Fund of the entrepreneur. A fund aims to encourage national, regional and sectorial economic growth by fostering productivity and innovation in micro, small and medium enterprises in strategic sectors. That promotes the orderly strengthening, planned and systematic entrepreneurship and business development throughout the national territory and the consolidation of an innovative, dynamic and competitive economy.

### Entrepreneur ecosystem assessments

In order to evaluate the factors influencing entrepreneurial activity and entrepreneurial activity related to innovation and technology are taken two tests that are performed in these contexts in particular. Firstly, the GEM (Global Entrepreneur Monitor) Analyzes environmental conditions to undertake and IMCO (Mexican Institute for Competitiveness) analyzes the environmental conditions to undertake but from a more specific vision of entrepreneurship in areas of technology, and innovation (Table 1).

Knowing the context of entrepreneurship is evaluated it is valuable because it allows to limit what are the determining variables. However, more importantly is to evaluate and assign a weighting to understand in clear and quantitative terms. Where does it meet? What is doing well?

In addition, what can be improved? (Table 2)

Results of that evaluation by IMCO (Table 3) in terms of technological entrepreneurship and innovation in terms of a comparison sheds alarming results that might make look like a laggard country. A recent study found that only teachers and students at Stanford University have created 40,000 companies and generated 5.4 million jobs since 1930. These businesses generated an added value of 2.7 trillion dollars that is more than the size of the Mexican economy. According to the Financial Report Stanford University 1995, the federal government accounted for 40% of funding for the institution in the field [9].

### Jalisco in Entrepreneurship

#### Conclusions state enterprise development plan

This National Development Plan proposes as a priority objective foster a business climate that facilitates access to financing and encouraging the creation, innovation and expansion of companies, but with a special emphasis on the consolidation of MSMEs (Table 4).

To assess the impact of entrepreneurship in the case of Jalisco four indicators are relevant: the number of registered companies, their operating capacity, retention of businesses and financing volume: Using this summary, are analyzed the challenges of these four indicators.

One of the main areas of opportunity to boost funding and entrepreneurship is within the structure of the State System of Entrepreneurship. In Jalisco there are 45 Incubators registered with the INADEM, there Jalisco Enterprise Development Fund (FOJAL) supports entrepreneurs through training and/or accompaniment

### Jalisco in Innovation

Jalisco faces several problems with competitiveness and economic growth. In 2012 Jalisco was located at position 13 Competitiveness Index nationwide calculates the Mexican Institute for Competitiveness (IMCO) (Table 5).

Development Objective: To promote technological development, scientific research and innovation through the articulation of sectors those contribute to the formation of human capital with high levels of expertise.

Od13o1: Sectorial Objective: Create conditions for strategic links between academic and economic sectors.

### Conclusions of the state development plan innovation and technology

Scientific research, technology development and innovation

| Entrepreneur Ecosystem Assessment (GEM)  | Entrepreneurship, Innovation and Technology Ecosystem Assessment (IMCO) |
|--|---|
| GEM: Global Entrepreneur Monitor   | IMCO: Mexican Institute of Competitiveness                              |
| 1. Finance   | 1. Innovation   |
| 2. Government Policies: Entrepreneurship as a priority and support for business. | 2. Environment for doing business                                       |
| 3. Governmental programs   | 3. Support infrastructure   |
| 4. Education and entrepreneurial training  | 4. Human capital  |
| 5. Technology transfer   | 5. Financing  |
| 6. Commercial infrastructure   | 6. Demand profile   |
| 7. Internal market: Dynamics   | 7. Industrial integration   |
| 8. Physical infrastructure   | 8. Entrepreneurial culture  |
| 9. Social and cultural norms   | 9. Governmental policies  |

Source: Global Entrepreneur Monitor 2014 and Mexican Institute of Competitiveness

**Table 1:** Entrepreneur Ecosystem Assessment (GEM) and Entrepreneurship, Innovation and Technology Ecosystem Assessment (IMCO).



| Entrepreneur Ecosystem Assessment GEM Mexico 2014               |   |
|---|---|
| GEM: Global Entrepreneur Monitor                                |   |
| Finance   | As for funding by 2014 the outlook is bleak, the element with the worst result indicates that there is not enough equity of entrepreneurs in Mexico to finance new and growing businesses.                        |
| Government Policies: entrepreneurship as a priority and support | Compared to 2013, the year 2014 assesses negatively in all factors, concluding that the general perception is that support for new and growing businesses is not a priority the policy of the federal government. |
| Governmental programs   | There is a perception that science parks and incubators provide effective support for new and growing companies.  |
| Education and entrepreneurial training                          | There is not a good perception of entrepreneurial education offering, but has improved compared to 2010.  |
| Technology transference   | Technology transference perceives that science and technology developed in Mexico allow the creation of technology-based companies in the global level.   |
| Commercial infrastructure                                       | In 2014, there was a negative perception in commercial and professional infrastructure, which leads to lack of adequate for the development of entrepreneurial ecosystem conditions.                              |
| Internal market: dynamics                                       | Perceives that new and growing companies cannot easily enter new markets, or assume the cost of entry this implies.   |
| Physical infrastructure:  | Although there are generally positive assessments regarding physical infrastructure, the results is lower in comparison to 2013.  |
| Social and cultural norms                                       | Norms presented a decrease in earnings during 2014. The worst evaluated element was no stimulation to taking entrepreneurial risk.  |

Source: IMCO (Instituto Mexicana de la Competitividad)

**Table 2:** Entrepreneur Ecosystem Assessment GEM and Entrepreneurship and Innovation and Technology Ecosystem Assessment IMCO.

| Factor                         | Evaluation  |
|--------------------------------|---|
| Innovation                     | This is the most backward factor according to IMCO. This is due to low investment in research and development compared with other countries. In Mexico 30% of investment in R & D comes from the private sector, in other countries like South Korea, this represents 80%. In addition, there is a perception that there are no institutional links between academia and industry; therefore, companies do not resort to the academy for innovation.  |
| Environment for doing business | This is the third worst evaluated factor and it is not surprising as it coincides with other studies indicating the high cost and difficulty in performing procedures in Mexico, including paying taxes. The gap for the growth of corruption is huge and therefore perceives as a constraint to doing business in Mexico.  |
| Support infrastructure         | 10 years ago, pushes the creation of incubators in Mexico resulting in nearly 500 institutions throughout the country by 2012, its results have not been the expected. Only one in seven incubators has some type of a tracking system of their companies. This explains why 70% of entrepreneurs who have obtained financing on the market do not come from any incubator.   |
| Human capital                  | The main problems have to do with the lack of English proficiency. Because of the one-dimensional model of undergraduate education in Mexico, systems engineers, even though they have a technical soundness lack business elements. Similarly, business students lack the technical skills to carry out an ICT business.   |
| Financing                      | Financing is considered one of the laggard's factors. In Mexico invests 0.06% of GDP in that market while in Colombia and Chile twice reversed in relative terms. On the other hand, the credit market companies are limited. In 2010, the percentage of credit to companies accounted for 21% of GDP while the Latin American average was 36% .5 As a result; entrepreneurs tend to finance their projects with family and personal funds. Mexican businesspersons prefer to invest in traditional sectors, new markets, which have inhibited the creation of angel investors.   |
| Demand profile                 | This factor refers to the ability of a country to adopt and promote the use of technological developments. Its relevance is because those small businesses are the fastest growing permanently using ICTs to interact with their customers, according to a recent study by BCG. However, e-commerce in Brazil is three times that of Mexico in relation to GDP due to the higher cost of internet access and low quality service, low penetration of banking services, and low confidence in electronic commerce. This factor refers to the ability of a country to adopt and promote the use of technological developments.  |
| Industry integration           | ICT industry integrated under 3 main associations and 38 clusters in 28 states; this not necessarily reflects in new businesses. According to the survey conducted by IMCO, only 23% of ICT entrepreneurs belong to a business association and 28% to a cluster. Private partnership mechanisms are expensive for entrepreneurs for fees and even if they could afford, do not find their interests represented.  |
| Entrepreneurial culture        | According to an academic study (Ardagna & Lusardi 2008), this factor is one of the best that explains the likelihood of undertaking in a country. If individuals are confident in their entrepreneurial skills and knowledge, they have 8.5% more likely to start a business. In addition, those who are not afraid of failure have a 10% greater likelihood to undertake. Finally, knowing an entrepreneur increases the likelihood of undertaking by 3%. In Mexico, this culture is not consolidated. In the survey conducted by Monitor Group (Deloitte) the percentage of individuals who consider starting a business as a good alternative is 58%, while in Brazil it is 80%. |
| Governmental policies          | This factor is in better shape. The work of public policy in creating support funds achieving that doubling in six years recognizes, creating the first seed capital funds in the country. It link public universities with entrepreneurial projects through meetings between entrepreneurs and industry.   |

**Table 3:** Entrepreneurship Ecosystem Assessment and Innovation and Technology. IMCO: Mexican Institute of Competitiveness.

are three important elements, as has been demonstrated in various latitudes that these components of development have a direct impact on business competitiveness index. According to the ranking of Science, Technology Mexico and Innovation in 2011, conducted by the Scientific and Technological Consultative Forum (FCCyT), Jalisco is located in fourth place nationally in terms of quantity and quality of resources in Science, Technology and Innovation (CTI). Only surpassed by the Federal District, Nuevo Leon and Morelos [10]. However, this position

not reflects an impact to increase business competitiveness of the state, because, on the level of business competitiveness, Jalisco ranks in tenth position by 2012. Some of the causes of why the state Jalisco is located in this position are that there is poor linkage between academia and industry for the generation of research and technological development. As it has been reviewing over the text in a nutshell, companies do not go to universities to generate innovation [10].

| Sectorial objective |  |
|---------------------|--|
| OD8O1               | Expand and improve the supply of financing on appropriate terms for productive projects.   |
| OD8O1E1             | Strengthen specialized funds guarantees  |
| OD8O1E2             | Encourage financial institutions and bodies of state financial support to generate operating rules and guarantees according to the possibilities of MSMEs  |
| OD8O1E3             | Promote a state system of financing that consolidate and coordinate programs appropriate to the type and size of companies.  |
| OD8O1E4             | Enhance competition in lending to entrepreneurs to reduce interest rates   |
| OD8O1E5             | Boosting the financing companies of international migrants return  |
| OD8O2               | Sectorial objective: Strengthen the capacities of MSMEs operation  |
| OD8O2E2             | Strengthen educational programs and higher education in corporate financial education  |
| OD8O2E3             | Improve systems incubation, acceleration and entrepreneurship of universities and business organizations that promote, support and follow up on formal businesses with high added value and innovation |
| OD8O2E5             | Generate incentives in coordination with the federal government and municipal governments to install new formal businesses seize the economic vocation and regional potential.                         |
| OD8O2E6             | Strengthen the network of actors that make up the system entrepreneurs.  |
| OD8O2E7             | Generate comprehensive programs that allow potentiate the initiatives of entrepreneurs and creating high-impact companies.   |
| OD8O2E8             | Generate comprehensive programs that help expand niche markets MSMEs   |

Source: (General Secretariat of Government of the State of Jalisco, 2013).

**Table 4:** Objectives and Strategies of National Development Plan 2013-2016 Jalisco.

|   |  |
|---|--|
| OD13O1E1  | Encourage the formation of high level human capital  |
| OD13O1E2  | Develop a dual model of higher education to strengthen the link between universities and industries and to encourage innovation and entrepreneurship with the vision to produce value added.   |
| OD13O1E3  | Develop marketing networks technology to the productive sector   |
| OD13O1E4  | Encourage the creation of a network of information and technology transfer to give added value to all productive sectors of identity.  |
| OD13O1E5  | Seek or venture capital fund for scientific and technological projects, academy-industry   |
| OD13O1E6  | Increase investment in innovation, science and technology as a percentage of state GDP, to form in the next few years an investment at least equal to the national average investment.   |
| OD13O1E7  | Motivate through a program the interest of industry research   |
| OD13O1E8  | Harnessing local research groups recognized in different areas to create specific poles of scientific development (e.g. biotechnology)   |
| OD13O1E9  | Promote a triple helix model linking the academy, industry and government to the generation of scientific development and innovation.  |
| OD13O2. SECTOR OBJECTIVE: To promote innovation and entrepreneurship for scientific and technological development |  |
| OD13O2E1  | Create specialized technology platforms to support high-tech entrepreneurs that allow incubation, integration into clusters. Accelerating and innovation (i.e digital creative city and centers of innovation and business acceleration) |
| OD13O2E2  | Promote the development of the information society and knowledge through a statewide system of Entrepreneurship and a state innovation system, including sectoral strategic information.   |

Source: (General Secretariat of Government of the State of Jalisco, 2013).

**Table 5:** Objectives and Strategies of National Development Plan 2013-2016 Jalisco.

According to the State Development Plan of Jalisco 2013- 2033, the results of the position of Jalisco also due to a low level of enrollment in undergraduate and graduate programs are related to the development of science and technology. In Jalisco, only 28.4% of undergraduate enrollment is located in engineering and technology programs, while nationally the proportion is 33.4%.

Another of the limitations that exist in the state for generating innovation, science and technology, is the number of researchers who are in state so that researchers who are attached to the SNI (National Research System) are taken into account. By 2011, in Jalisco, for every 10 thousand members of the EAP (Economically Active Population), there are 2.8 researchers from the SNI, with respect to this stated, Jalisco is located at number 12 in the country [10].

One of the main constraints to generate own business innovation is that this must be done by each and investment of own funds according to indicators of companies investing in innovation. Eighty seven% of its total investment comes from own resources, although in the case of microenterprises this proportion rises to 92%. In addition, the nature of investment banking in Mexico and the likelihood that funding granted for innovation issues is very low. Regarding public funds are equivalent to only 2% and international funds less than 1% [10]. In conclusion, the

State Development Plan summarizes these two problems: First, there are no adequate financing mechanisms for high-tech entrepreneurs. In addition, there are no real mechanisms to support specialized entrepreneurs in high-tech incubators. It is also remarkable the digital divide that prevents the exploitation and use of Information Technology and Communication (ICT) for development of the state. Smaller and more companies to survive problems tend to use less resources and take advantage of ICT [10].

## Research Method

In this research, it is used the qualitative method based on literature review of studies in Mexico and investigations in other countries. Also, there are analyzed statistics presented by national and international institutional bodies and public and private bodies are used in order to explain and describe the phenomenon that is the object of study [11].

## Analysis of Results

If it should be analyzed the conditions of the state of Jalisco that promote entrepreneurship and innovation, and with them the generation start-ups, it can be concluded that are aligned to the policies that both the federal government and the state government has

ruled in their plans development. However, results in innovation and entrepreneurship in the state mostly have negative results [12].

As reviewed from the national sphere the two main constraints to which start-ups face, are the lack of availability of capital and financial instruments and low incentives that have to invest in research and development. Companies are still struggling to resolve operational and financial issues leaving aside the daily budgets and resources for this type of activities that add value.

Finally, it should be emphasized that both the IMCO report as on the findings of State Development Plan, although it is established clearly as a strategic line, collaboration between industry, academia and government is called the triple helix and it is already a proven to encourage high-value activities in a city model. There are alarming figures in which it shows that companies do not resort to universities, educational centers and research to generate innovation, which is a bit absurd in terms of policies judged as the creation of a Ministry of Innovation, Science and Technology.

## Conclusions and Recommendations

There are two main reasons why it is important to study the evolution and development of Startups in the MAG. The first is because there is evidence that the creation of startups based on technology and innovation has a positive impact on the economic development of the region. The second reason is that it is important to analyze the nature of what we might call a new type of firm and that for various reasons are unable to fit into conventional corporate structures and it is that is increasing the detailed study of the characteristics, dynamics and structure of startups.

Concluding that Mexico from its national policies and the State of Jalisco from State Development Plan, has tried to promote in the MAG conditions to promote the entrepreneurial ecosystem. However, there are key indicators that slow detonation and growth of startups based on technology and innovation.

Although public policies at the State and Federal level institutions create and allocate resources to encourage entrepreneurial activity, this can grow in terms of traditional business and of little value.

However, to encourage start-ups and businesses based on technology and innovation, it is necessary that public policies not only focus on increasing Numeralia of companies created or loans granted. To increase the value should pay attention to specific indicators, greater reach and more intellectual, long-term nature.

The problem of creating value is not resolved with a high volume of micro-credits or incentives for micro and small businesses. However, there must be public policy incentives to the creation of intellectual capital, to prevent leakage of knowledge and generation of instruments for more solid financing and not only seek short-term returns.

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