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Entrepreneurship & Economic Development

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A survey in manufacturing firms within Hidalgo, Mexico

“Capitalism is culture. To sustain it, laws and institutions are important, but the most fundamental role is played by the basic human spirit of independence and initiative.”

Robert Shiller, Yale University's (2013)

INTRODUCTION

- There are different factors that contribute to the growth of economies and employment. Entrepreneurial activity is one of them, but it is also important to distinguish among entrepreneurship with high growth potential, self-employment and small business.
- The young innovative firms have shown a positive relationship between age, growth, and employment, adopting various terms to refer to this type of innovative entrepreneurship, including “high- growth,” “high- end,” and Lerner’s and Schoar’s (2010) “transformational” entrepreneurship. The important point is to differentiate entrepreneurs with high growth potential from small firms and self- employed individuals with low growth potential.
- Throughout the analysis of three main reports of entrepreneurship provided by the Global Monitor of Entrepreneurship GEM 2015, OCDE Entrepreneurship at a Glance 2015 and Latin American Entrepreneurs 2014 by the World Bank, we are able to identify the main factors that contribute or hinder entrepreneurship of high growth potential.
- Through a survey applied to fifteen firms of the automotive industry in Hidalgo, Mexico, we found a relationship with age, employment and growth, providing some insights in order to reinforce the local conditions of the entrepreneurship ecosystem and consequently encourage the most innovative and transformational entrepreneurs.

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ENTREPRENEURSHIP AS AN IMPORTANT DRIVER OF ECONOMIC DEVELOPMENT

There are many assumptions about entrepreneurship, since working for oneself or creating an enterprise is not the same as engaging in job-creating entrepreneurship. Some business owners create their firms very much in the Schumpeterian tradition, with the goal of creating something new to bring to the market, revolutionizing the economy, and creating jobs. Others create their firms in response to grim employment prospects, as a mean of subsisting rather than creating a new product or entering a new market. The two extremes are inversely related. If there are many dynamic entrepreneurs in the economy, there will be an abundance of good jobs and a reduction of incentives for start-ups with lower growth potential. Conversely, too few innovative entrepreneurs will generate few employment opportunities, pushing some workers who may not have an innate ability or interest in running their own business to accept employment opportunities with low growth potential. Although both types of entrepreneurs are found in all countries, the lack of good jobs in developing countries suggests that low-growth entrepreneurship may be more prevalent at lower levels of development (Lederman 2014).

However, entrepreneurs are key actors in the transformation of low-income societies characterized by low productivity and subsistent self-employers into dynamic economies characterized by innovation and a rising number of well-remunerated workers.

Entrepreneurs have been fundamental drivers of growth and development. The Organization for Economic Co-operation and Development OCDE, Global Entrepreneurship Monitor GEM and World Bank, share the same conclusion. “Creative entrepreneurs are not just byproducts of the development process but important drivers of such a process”.

According to the OCDE (2015), “Successful entrepreneurs are individuals who transform ideas into profitable commercial enterprises. This process often requires special talents, including a capacity to innovate, to introduce new products, and to explore new markets. It also requires an ability to manage others, to assign priorities to tasks to increase the efficiency of production, and to make the best use of

available resources. But these talents are not enough. Successful entrepreneurs thrive in favorable economic and institutional environments that enhance the expected returns of innovation. When an enabling environment exists, entrepreneurs take risks and invest on innovation, spurring productivity, gains through the dynamics of firm entry and exit and innovation by incumbent firms, thus fostering economic development.

Also the Global Entrepreneurship Monitor GEM's created its own conceptual framework by two basic assumptions:

1. Entrepreneurial activity is not a heroic act of an individual, regardless of the environment in which activity is performed.
2. Entrepreneurial activity is an output of the interaction of an individual's perception of an opportunity and capacity (motivation and skills) to act upon this AND the distinct conditions of the respective environment in which the individual is located.

ENTRENEURSHIP FRAMEWORK

In 2014, more than 206,000 individuals were surveyed by the Global Entrepreneurship Monitor (GEM), across 73 economies and 3936 national experts on entrepreneurship from 73 economies participated in the survey. Using the United Nations classification for regions, and the World economic Forum Global Competitiveness Index Report's Classifications for economic development levels, GEM participant economies represent 72.4% of the world's population and 90% of the world's GDP, enables GEM to feature different profiles of entrepreneurship according to regions and the economic development stage GEM. (2015).

According to those two dimensions (geographic region and economic development level), between the participating economies in the 2014 GEM survey are the following and according to the table Mexico is located as an efficiency-driven economy in transition to innovation-driven economy.

GEM ECONOMIES BY GEOGRAPHIC REGIONAL AND ECONOMIC DEVELOPMENT LEVEL, 2014

	<i>Factor-driven economies</i>	<i>Efficiency-driven economies</i>	<i>Innovation-driven economies</i>
Africa	Angola ¹ , Botswana ¹ , Burkina Faso, Cameroon, Uganda	South Africa	
Asia & Oceania	India, Iran ¹ , Philippines ¹ , Vietnam	China, Indonesia, Kazakhstan ² , Malaysia ² , Thailand	Australia, Japan, Singapore, Taiwan, Qatar
Latin America & Caribbean	Bolivia ¹	Argentina ² , Barbados ² , Belize, Brazil ² , Chile ² , Colombia, Costa Rica ² , Ecuador, El Salvador, Guatemala, Jamaica, Mexico ² , Panama ² , Peru, Suriname ² , Uruguay ²	Puerto Rico, Trinidad and Tobago
European Union		Croatia ² , Hungary ² , Lithuania ² , Poland ² , Romania	Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Slovenia, Slovakia, Spain, Sweden, United Kingdom
Non-European Union		Bosnia and Herzegovina, Georgia, Kosovo, Russian Federation ²	Norway, Switzerland
North America			Canada, United States

1) In transition from factor-driven to efficiency-driven economy.

2) In transition from efficiency-driven to innovation-driven economy.

GEM (2014) provided, insights on several individual attributes (perception of opportunities, perception of own capabilities to act entrepreneurially, fear of failure and entrepreneurial intentions), which –within a specific context (social, cultural, political and economic) defined by entrepreneurship framework conditions –lead to entrepreneurship activities.

• GEM'S Conceptual Framework

The following are the three components of the GEM conceptual framework, and the assumed relationships among them, are the heart of the GEM contribution to a better understanding of entrepreneurial energy in an economy.

Individual attributes includes several demographic factors (gender, age, geographic location), psychological factors (perceived capabilities, perceived opportunities, fear or failure) and motivational aspects (necessity-based vs. opportunity –based venturing, improvement- driven venturing, etc.).

Social value toward entrepreneurship, includes how society values entrepreneurship as a good career choice; if entrepreneurs have a high social status; and how media attention to entrepreneurship is contributing (or not) to the development of a national entrepreneurial culture.

Entrepreneurial activity: defined according to the venture's life cycle phases (nascent, new venture, established venture, discontinuation), the types of activity (high growth, innovation, internationalization) and the sector of the activity (Total Early –stage Entrepreneurial Activity –TEA, Social Entrepreneurial Activity –EEA)

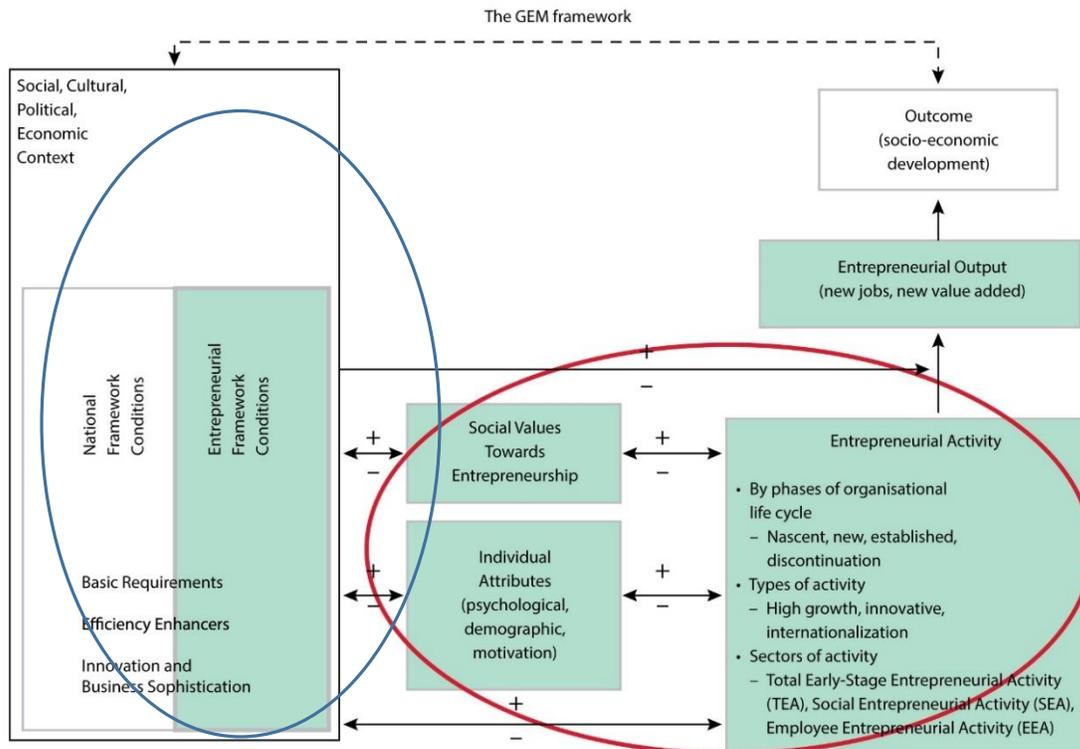
The Social, cultural, political and economic context was defined by using the World Economic Forum's twelve pillars for profiling economic development and nine components of the GEM's Key Entrepreneurial Framework Conditions (EFC's) which is an essential part provided by the GEM (2014), to understanding businesses' creation and growth. According to this organization, the state of this conditions directly influences the existence of entrepreneurial opportunities, entrepreneurial capacity and preferences, which in turn determines business dynamics in each country.

GEM'S Key Entrepreneurial Framework conditions (EFC's)

1. **Entrepreneurial Finance.** The availability of financial resources—equity and debt—for small and medium enterprises (SMEs) (including grants and subsidies).
2. **Government Policy.** The extent to which public policies support entrepreneurship. This EFC has two components:
 - 2a. Entrepreneurship as a relevant economic issue and
 - 2b. Taxes or regulations are either size-neutral or encourage new and SMEs.
3. **Government Entrepreneurship Programs.** The presence and quality of programs directly assisting SMEs at all levels of government (national, regional, municipal).
4. **Entrepreneurship Education.** The extent to which training in creating or managing SMEs is incorporated within the education and training system at all levels. This EFC has two components:
 - 4a. Entrepreneurship Education at basic school (primary and secondary) and
 - 4b. Entrepreneurship Education at post-secondary levels (higher education such as vocational, college, business schools, etc.).
5. **R&D Transfer.** The extent to which national research and development will lead to new commercial opportunities and is available to SMEs.
6. **Commercial and Legal Infrastructure.** The presence of property rights, commercial, accounting and other legal and assessment services and institutions that support or promote SMEs.
7. **Entry Regulation.** This EFC contains two components:
 - 7a. Market Dynamics: the level of change in markets from year to year, and
 - 7b. Market Openness: the extent to which new firms are free to enter existing markets.
8. **Physical Infrastructure.** Ease of access to physical resources—communication, utilities, transportation, land or space—at a price that does not discriminate against SMEs.
9. **Cultural and Social Norms.** The extent to which social and cultural norms encourage or allow actions leading to new *business* methods or activities that can potentially increase personal wealth and income.

The GEM conceptual framework through surveying /researching provides us insights about factors which encourage or hinder entrepreneurial activity, especially the relationships between the National Entrepreneurship conditions, social values, personal attributes and the EFC's.

GEM CONCEPTUAL FRAMEWORK AND THE RELATION WITH THE KEY ENTREPRENEURIAL CONDITIONS EFC'S.



GEM's Surveys also confirmed that entrepreneurial activity, in different forms (nascent, start-up, intrapreneurship) is positively correlated with the economic growth, this relationship differs along phases of economic development as we already mentioned.

- **Entrepreneurship Frame Conditions in Mexico**

The following table provides a general 2014 in the geographic overview of the results of each EFC's in 73 economies participating in the survey which includes Mexico.

Entrepreneurship & Economic Development

ENTREPRENEURSHIP FRAMEWORK CONDITIONS MAIN INDICATORS

1 Finance 2a National Policy—General Policy 2b National Policy—Regulation 3 Government Programs 4a Education—Primary & Secondary 4b Education—Post-Secondary 5 R&D Transfer 6 Commercial Infrastructure 7a Internal Market—Dynamics 7b Internal Market—Openness 8 Physical Infrastructure 9 Cultural and Social Norms

	1	2a	2b	3	4a	4b	5	6	7a	7b	8	9
<i>Africa</i>												
Angola	2.63	2.58	2.16	2.40	1.91	2.22	1.77	2.73	2.98	2.17	2.36	2.88
Botswana	2.71	2.61	2.62	2.71	2.74	3.09	2.45	2.56	2.88	2.04	3.00	2.91
Burkina Faso	2.09	2.88	3.09	3.04	1.26	2.78	1.77	2.80	2.24	2.37	3.04	3.08
Cameroon	2.16	3.18	2.80	2.86	2.19	3.23	2.05	2.86	2.40	2.77	3.30	3.16
South Africa	3.02	3.02	2.13	2.33	1.83	2.61	2.19	2.64	2.94	2.27	3.06	2.52
Uganda	2.32	2.74	2.20	2.54	2.42	3.11	2.21	3.09	3.53	2.84	3.34	3.39
Average	2.49	2.84	2.50	2.65	2.06	2.84	2.07	2.78	2.83	2.41	3.02	2.99
<i>Asia and Oceania</i>												
Australia	2.34	1.83	2.44	2.23	2.19	2.85	2.18	3.42	3.03	2.79	3.91	3.19
China	2.59	3.07	2.76	2.54	1.77	2.81	2.48	2.69	3.81	2.64	4.19	2.89
India	3.11	3.00	2.43	2.94	2.33	3.09	2.86	3.40	3.45	2.87	3.96	3.43
Indonesia	3.03	2.91	2.48	2.57	2.60	3.31	2.63	2.96	3.56	2.89	3.46	3.31
Iran	1.89	1.75	1.57	1.60	1.75	2.22	2.08	2.15	3.18	1.69	3.98	2.25
Japan	3.01	3.12	2.56	2.80	1.64	2.82	3.15	2.44	3.92	2.85	4.47	2.58
Kazakhstan	2.21	3.49	2.65	2.92	2.41	2.73	2.13	3.11	3.06	2.30	3.58	3.40
Kuwait	2.67	1.90	2.45	1.93	1.52	2.57	2.09	3.06	3.89	2.05	3.50	2.68
Malaysia	3.34	3.35	2.86	3.28	2.45	3.12	2.68	3.31	3.55	2.83	4.08	3.54
Philippines	2.57	2.42	2.11	2.43	2.89	3.28	2.07	2.92	3.09	2.53	3.12	3.05
Qatar	2.72	3.15	2.95	2.90	2.72	3.33	2.41	2.95	3.25	2.08	3.44	2.89
Singapore	3.56	3.48	3.98	3.68	3.02	3.34	3.17	3.23	3.42	3.04	4.45	3.16
Taiwan	2.98	2.71	2.91	2.73	2.19	2.77	2.68	2.65	3.86	2.78	3.90	3.26
Thailand	2.51	2.52	2.61	2.11	1.94	2.79	2.13	3.22	3.60	2.37	3.72	2.85
Vietnam	2.37	2.93	2.46	2.35	1.83	2.64	2.30	2.93	3.71	2.43	3.75	3.13
Average	2.73	2.78	2.61	2.60	2.22	2.91	2.47	2.96	3.49	2.54	3.83	3.04
<i>Latin America & Caribbean</i>												
Argentina	2.03	2.08	1.49	2.70	1.82	3.11	2.49	2.85	3.24	2.53	3.31	3.01
Barbados	2.42	2.42	1.87	2.30	1.71	2.96	1.78	2.72	2.06	2.42	3.75	2.61
Belize	2.14	2.55	2.20	2.45	2.05	2.53	1.77	2.68	2.31	2.54	3.41	2.65
Bolivia	2.25	2.15	1.97	2.34	2.13	3.11	2.33	2.81	2.98	2.65	3.30	2.79
Brazil	2.46	2.40	1.46	2.24	1.48	2.54	2.00	2.50	3.36	2.24	2.93	2.36
Chile	2.35	2.77	2.91	3.06	1.63	2.98	2.20	2.80	2.18	2.57	4.33	3.09
Colombia	2.37	2.75	2.41	2.95	2.14	2.97	2.17	2.79	2.70	2.55	3.38	2.97
Costa Rica	1.90	2.39	2.02	2.80	1.93	3.07	2.12	2.63	2.42	2.58	3.39	2.90
Ecuador	2.19	2.98	2.19	2.66	2.36	3.18	2.35	2.76	2.46	2.72	4.05	2.99
El Salvador	1.88	2.26	1.92	2.50	1.64	2.76	1.88	2.65	2.68	2.46	3.89	2.79
Guatemala	2.04	1.91	2.10	1.87	1.73	3.06	2.09	2.89	2.41	2.53	3.83	2.44
Jamaica	2.24	2.20	1.99	2.34	2.07	3.03	1.97	2.86	2.90	2.22	3.43	2.96
Mexico	2.20	2.27	1.87	2.69	2.00	3.12	2.44	2.64	2.81	2.21	3.29	2.99
Panama	1.99	2.11	2.95	2.52	1.67	2.78	2.35	2.68	2.36	2.53	4.01	2.75
Peru	2.20	2.21	2.14	2.13	1.98	2.87	1.87	2.81	2.43	2.70	3.52	3.09
Puerto Rico	1.96	2.42	1.78	2.56	1.66	3.07	2.28	2.84	2.61	2.30	3.25	2.76
Suriname	2.30	2.69	2.36	2.42	2.11	3.53	2.01	3.15	3.00	2.98	3.01	2.96
Trinidad and Tobago	2.66	1.81	2.38	2.34	1.83	2.51	1.95	2.94	2.29	2.34	3.76	2.85
Uruguay	2.21	2.22	2.78	2.89	1.41	3.43	2.49	3.02	2.09	2.40	3.79	2.11
Average	2.20	2.35	2.15	2.51	1.86	2.98	2.13	2.79	2.59	2.50	3.56	2.79
<i>Europe Non-European Union</i>												
Bosnia and Herzegovina	2.29	2.13	1.74	2.07	2.06	2.43	1.96	2.92	3.35	2.16	3.35	2.15
Georgia	2.15	2.94	3.95	2.37	2.35	2.91	1.83	3.10	2.61	2.92	4.02	3.19
Kosovo	2.08	2.17	3.07	2.21	1.86	2.87	1.96	3.31	3.07	2.61	4.06	3.15
Norway	2.58	2.49	3.18	3.18	2.48	2.56	2.78	3.42	2.59	2.64	4.43	2.86

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	1	2a	2b	3	4a	4b	5	6	7a	7b	8	9
Russia	2.27	2.36	2.27	2.40	2.31	3.10	2.37	3.25	3.14	2.55	3.47	2.74
Switzerland	3.23	3.08	3.70	3.48	2.56	3.42	3.57	3.51	2.34	2.97	4.45	3.40
Turkey	2.41	2.69	1.99	2.32	2.04	2.88	2.59	2.85	3.56	2.35	3.66	3.07
Average	2.43	2.55	2.84	2.58	2.24	2.88	2.44	3.19	2.95	2.60	3.92	2.94
<i>Europe- European Union</i>												
Austria	2.51	2.46	2.60	3.58	1.66	3.02	2.82	3.40	2.49	3.33	4.12	2.46
Belgium	3.38	2.62	1.98	2.71	1.95	2.75	2.99	3.74	2.50	3.19	3.79	2.15
Croatia	2.32	2.15	1.55	2.27	1.68	2.35	2.04	2.90	3.37	2.08	3.67	2.02
Denmark	2.73	3.33	3.31	3.43	3.10	3.43	2.77	3.56	2.43	3.44	4.49	2.82
Estonia	2.86	2.43	3.58	3.39	2.63	2.99	2.92	3.21	3.39	3.12	4.39	3.39
Finland	2.82	3.17	2.95	2.77	2.28	2.70	2.61	3.20	3.23	2.72	4.25	2.76
France	2.77	2.99	2.96	3.17	1.75	2.92	2.73	3.06	3.02	2.34	4.04	2.14
Germany	2.84	2.93	2.87	3.46	2.13	2.81	2.75	3.34	2.84	2.81	3.82	2.65
Greece	2.11	2.07	1.74	1.95	1.50	2.31	2.26	3.05	3.42	2.12	3.53	2.47
Hungary	2.63	2.43	1.93	2.41	1.68	2.82	2.41	3.29	3.13	2.62	3.94	2.32
Ireland	2.87	3.24	2.64	3.26	2.09	2.95	2.82	3.29	2.59	3.13	3.71	2.95
Italy	2.55	2.40	1.50	2.08	1.68	2.33	2.18	2.83	3.50	2.61	2.92	2.22
Latvia	2.55	2.60	2.50	2.75	2.51	3.17	2.33	3.74	2.27	2.78	4.00	2.85
Lithuania	3.19	2.39	2.46	2.72	2.37	3.07	2.61	3.90	3.38	2.66	4.19	3.09
Luxembourg	2.76	3.41	3.22	3.47	2.13	2.90	2.98	3.50	2.76	3.05	4.04	2.56
Netherlands	2.81	2.59	3.13	3.15	2.85	3.17	2.88	3.68	2.85	3.40	4.82	3.58
Poland	2.77	3.07	2.16	2.77	1.75	2.54	2.44	2.77	4.04	2.75	3.79	2.96
Portugal	2.73	2.57	2.01	3.00	2.04	3.04	2.76	3.34	2.40	2.75	4.43	2.55
Romania	2.43	2.53	2.24	2.51	2.34	2.68	2.59	3.09	3.14	2.86	2.89	2.61
Slovakia	2.73	2.28	2.16	2.26	2.21	2.98	2.13	3.07	2.63	2.84	3.94	2.40
Slovenia	2.33	2.13	1.92	2.43	1.77	2.34	2.29	2.71	3.04	2.56	3.56	2.06
Spain	2.14	2.50	2.40	2.88	1.84	2.61	2.45	3.03	2.87	2.47	3.64	2.64
Sweden	2.63	2.74	2.53	3.00	2.55	2.75	2.65	3.28	3.13	2.80	4.25	3.07
United Kingdom	2.77	2.90	2.33	2.62	2.44	3.02	2.20	2.95	3.28	2.73	3.54	2.83
Average	2.68	2.66	2.44	2.84	2.12	2.82	2.57	3.25	2.99	2.80	3.91	2.65
<i>North America</i>												
Canada	3.10	2.50	2.85	2.86	2.32	3.14	2.57	3.49	2.31	2.95	4.28	3.28
United States	2.99	2.69	2.33	2.61	2.21	2.87	2.64	3.12	3.30	2.67	3.98	3.75
Average	3.05	2.60	2.59	2.74	2.27	3.01	2.61	3.31	2.81	2.81	4.13	3.52

The above table shows the rates in a 1-5 scale for the main EFCs analyzed in each economy and highest rated EFC's in each country are highlighted in green and the lowest rated EFC's are highlighted in red.

The table also show averages included in some patterns among country-groups and important insights. For example:

Entrepreneurship Education at basic levels (primary and secondary school) is rated rather unfavorably in most economies, including México. This information is very important for policy makers, as this score shows the extent to which primary and secondary education encourages creativity, self-sufficiency, and personal initiative, provides adequate instruction on market economic principles, and pays adequate attention to entrepreneurship and new firms creation.

Other Entrepreneurship Frame Condition is that have a relatively low evaluations across countries (México included) are national policies related to regulation and R&D transfer.

In México the lowest EFC's evaluation is government policy (The extent to which public policies support entrepreneurship): 2b National Policy Regulation and 2a National Policy is lower than the average percentage in Latin America,

The highest EFC's evaluation in Mexico is Physical infrastructure, which includes the perception of easy access to physical resources- communication, utilities, transportation, land or space –at a price that does not discriminate against SMEs.

Commercial and Legal infrastructure, Entry Regulation in internal market –Openness Mexico has a lower evaluation than the Latin American average.

The perception of Education Post-Secondary, Internal Market Dynamics and Social and Cultural Norms, have higher evaluation between the Latin American average.

- **Conceptual Framework Conditions in México**

The data published by the GEM in 2014, reported Total early-stage Entrepreneurial Activity (which includes the percentage of individuals aged 18-64 who are either a nascent entrepreneur or owner-manager of a new business) -TEA-, rates in Mexico have been increasing consistently; in 2011 was 9.6% and it doubled in 2014 reaching 19% of the adult population. This rate is now above the average for Latin American countries (17.6%) and for efficiency-driven economies; the results for Mexico are higher than all countries in the innovation-driven stage of development.

It is important to point out that early-stage entrepreneurial activity (TEA) includes both: nascent entrepreneur or owner-manager of a new business.

Nascent entrepreneurship actively involved in setting up a business they will own or co-own; this business has not paid salaries, wages, or any other payments to the owners for more than three months.

New business ownership rate includes, owning and managing a running business that has paid salaries, wages, or any other payments to the owners for more than three months, but not more than 42 months.

According to GEM in the same report, Mexicans tend to start businesses to pursue an opportunity, rather than out of necessity - three out of four (76%) early-stage entrepreneurs start a business pursuing an opportunity and 50% are improvement-driven; as in previous years the majority of new businesses were consumer-oriented.

Nearly half of the adult population perceive good opportunities to start a business, and 53.5% believe they have the necessary skills to do so. However, this figure has seen a steady decrease since 2010, when it reached a high of 65%. This is the average for countries in the efficiency-driven stage of development but is ten points below the Latin America average.

Growth ambitions are modest: only 1.5% of Mexico's entrepreneurs expect to grow their businesses by 20 or more employees in the next five years, which is low compared with the Latin America average of 7.5%. Furthermore, Mexican entrepreneurs are less internationally oriented, just 1.4% of established business owners state that more than 75% of their customers come from abroad.

The average Mexican entrepreneur is between 25 and 44 years old, male or female, with post-secondary education, and in a consumer-oriented business.

ENTREPRENEURSHIP AND EMPLOYMENT

Entrepreneurs are key actors in the transformation of low income societies characterized by innovation and a rising number of well remunerated workers.

“Creative entrepreneurs are typically behind the most dynamic and productive firms –the one that innovates, expand production, and generate jobs at a comparatively rapid pace. These firms not only create employment opportunities, they also create better employment. For a given set of skills, across the world, more productive firms, pay higher wages”. (Lederman 2014).

Entrepreneurship & Economic Development

In Latin American and the Caribbean (LAC) medium firms, (with more than 25 employees) pay 30-60 percent higher wages. This stylized fact is shared across countries, albeit with less intensity in the more advanced economies.”

According to Lederman, (2014), Latin America is characterized by vibrant entrepreneurship, as measured by the number of firms per capita. The share of entrepreneurship in the population is higher than in other countries and regions. Perhaps more surprisingly, the incidence of formal business is also high. This fact suggest that the enterprise sector is much more than a large informal sector. However, the region lags in the nature of the business created

Firms in LAC tend to be smaller (in terms of the number of employees) at birth than firms in the other regions at similar levels of development, and the growth process fails to compensate for the initial gap in employment.

Even the largest firms in LAC create fewer jobs than the largest firms in other regions.

Lederman, (2014) suggest that the gap in firm growth is need to address to the government, addressing it requires a change in policy paradigm from the current emphasis on supporting small firms toward an emphasis on supporting start ups and young firms.

An other salient feature of LAC entrepreneurship is that new firms do not growth as much as firms in other regions and thus tend to remain small, LAC has the smallest new firms (in terms of number of employees) of any region. Even the largest new firms (the 90th percentile of the size distribution of new firms) are about half the size of new firms in other regions.

More over, differences in size widen as firms age: LAC firms that are 40 or more years old are on average half the size of firms the same age from high – income countries and Eastern Europe and Central Asia (ECA) and one-third the size of firms in the middle-income countries of East Asia and Pacific (EAP4) –Indonesia, Malaysia, the Philippines and Thailand.

Policy makers in LAC have typically tried to address the lackluster growth of firms by focusing on smallness per se. Together with a concern about employment, this focus has taken the form of a myriad of government-sponsored programs that support small and medium enterprises (SME’s). Eligibility for accessing supports depends largely on size, typically measured by the number of employees. Even more is the fact that the average growth rates of firms in theirs early years increase rapidly with

size- that is, firms that are young and large grow the most, making the largest contribution to job creation.

According to Lederman (2014) report, this fact contradicts the popular belief that most employment generation occurs among small firms.

The confusion stems from the failure to distinguish between the stock of firms and their growth dynamics. Even if at any point in time small firms were to account for most of the jobs in the economy, it does not follow that all small firms (independent of age) are equally responsible for employment generation over time. Rather, it appears that job creation comes from young firms, regardless of their size.

Large firms are the largest employers in every sector. In the United States, for instance, the largest 5 percent of firms accounted for more than 75 percent of employment by the end of the 2000s; in Mexico, the largest 10 percent of firms accounted for 70 percent of employment (Bartelsman, Haltiwanger, and Scarpetta 2009). At the same time, the vast majority of firms are small. In high- income countries, about 70 percent of firms had fewer than five employees in 2010 (Klapper and Randall 2012). In Argentina, Brazil, Chile, Colombia, and Mexico (LAC5), 9 of every 10 firms have fewer than five employees. Indeed, slightly more than 60 percent of business owners in the Latin American region report having no paid employees (Klapper and Randall 2012).

This strong bias toward smaller firms generates insufficient formal employment opportunities. In the absence of better employment prospects, many people end up working for themselves, fueling a vicious cycle of small size and few good jobs for future job seekers.

Lieberman (2015) report finds that historically people in the region have not been predisposed to become entrepreneurs who transform the business environment. Most large firms in the region at the beginning of the 20th century were foreign owned. Even in the United States— in an environment that is more conducive to entrepreneurship— people from LAC are less entrepreneurial than migrants from other regions of the world. But there is some room for optimism. Migrants from LAC slowly adapt to the new business environment. After long periods in the United States, they catch up with natives and migrants from other regions in ownership of small- scale firms. **In developing countries, a positive relationship between entrepreneurship and job creation is detectable only when self- employment without employees and informal companies are excluded from the analysis (Ghani, Kerr, and O’Connell 2011).**

And according to the OCDE. (2015) report this situation has not changed too much, at least in Mexico, the following table shows the number of firms by sector: manufacturing, services and construction and its relation with the employment provided by them, Self-employment provided by small establishments are excluded from the analysis.

TOTAL NUMBER OF ENTERPRISES BY SIZE, BY MAIN SECTOR 2012, MEXICO, SOURCE (OCDE 2015)

SECTOR	1 to 9	10 to 19	20 to 49	50 to 249	250	TOTAL
Manufacturing	472,340	13,852	8,160	6,075	2,718	503,145
Services	437,147	16,312	9,559	4,623	1,428	469,069
Construction	3,224	827	532	292	99	4,974
Total per size	912,711	30,991	18,251	10,990	4,245	977,188
Total % per size	93.40%	3.17%	1.87%	1.12%	0.43%	100%
Total employment per size	2,287,014	415,830	497,041	1,009,294	2,909,617	7,118,796
Total % employment per	32.13%	5.84%	6.98%	14.18%	40.87%	100%
Unpaid People	787,532	28,883	11,297	2,949	512	831,173

Source data: OCDE (2015)

The table shows; the .43% of the firms in Mexico are large and provide the 40% of the employment, the medium and large companies together provide more than a half of the total employment, while 93% of the total firms are small and provide 32% of it, this information is totally consistent with the findings provided by the Lieberman (2015). The large firms are main source of employment.

The table also shows a vibrant manufacturer sector, followed by the services sector. During the last section of this paper we will take a look of the manufacturing sector in Hidalgo in order to provide some insights and conclusions for this paper.

On the other hand recent studies have tried to distinguish between low- growth and high- growth entrepreneurs (see Gindling and Newhouse 2012). In parallel, some studies have emphasized the important distinction between young and small firms

as sources of growth. Most of the job-creating process among small businesses in the United States is accounted for by new entrants and young businesses (Haltiwanger, Jarmin, and Miranda 2013). In contrast, small mature businesses have on average negative net job creation. There is also considerable heterogeneity in terms of job creation within any definition of firm class. Haltiwanger (2011) shows that the typical small or median young business in the United States displays very low growth, but average growth is high for this group because a small fraction of firms are growing very rapidly. LAC does not seem to be lagging tremendously behind in the creation of new businesses. However, the productivity performance of the region during the last decades has been very disappointing. Total factor productivity in the manufacturing sector has not increased since the 1970s, and it actually declined in some countries (Busso, Madrigal, and Pagés-Serra 2012). The combination of these two facts suggests that the problems of resource misallocation and inefficiencies may lie either in the nature (rather than the number) of the businesses created or in the postentry performance of firms.

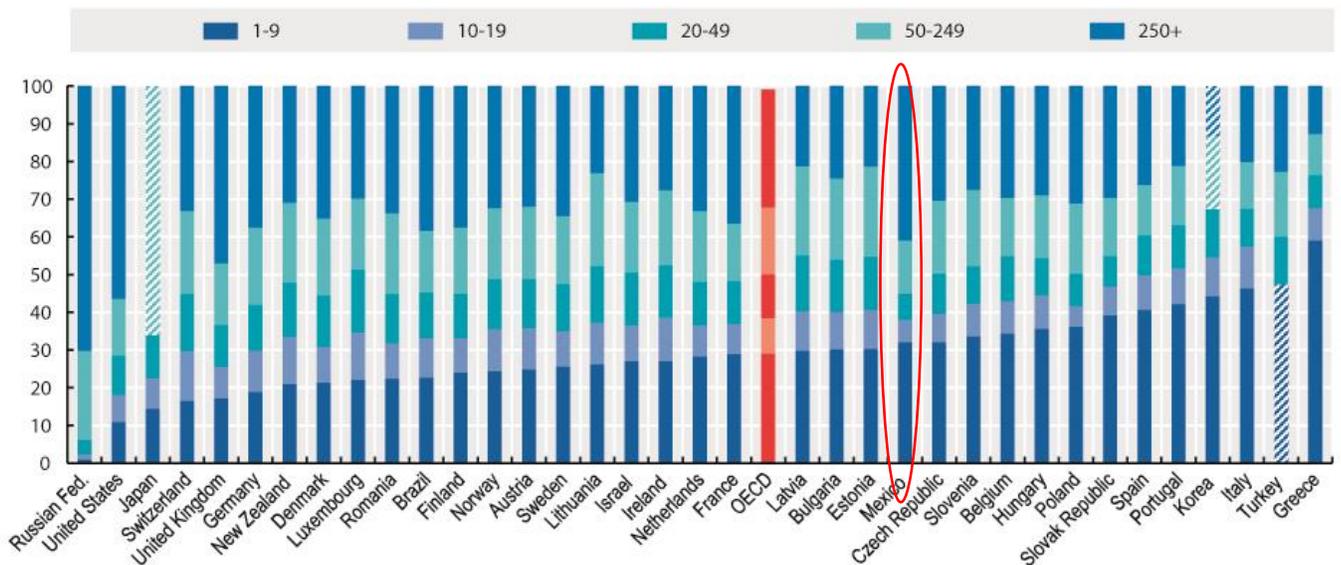
Growth clearly increases with size and declines with age. However, the differences are much more marked along the age dimension. **On average, young firms are net employment generators for all size classes**, and average growth rates increase rapidly with size. The fastest-growing young establishments are the largest, a fact that appears to contradict the idea that most employment generation occurs among small firms. Moreover, and in line with evidence from the United States, small plants older than five years contract rather than grow, (Lieberman 2015).

- **Employment in Mexico**

The next graphics shows the employment in Mexico according to the (OCDE 2015), provided by main sectors: Manufacturing, services and construction. The graphic shows the employment in Mexico is provided mainly by large firms.

Self-employment provided by small establishments are excluded from the analysis.

**Persons employed by enterprise size, total business economy
Percentage 2012, or latest year available**



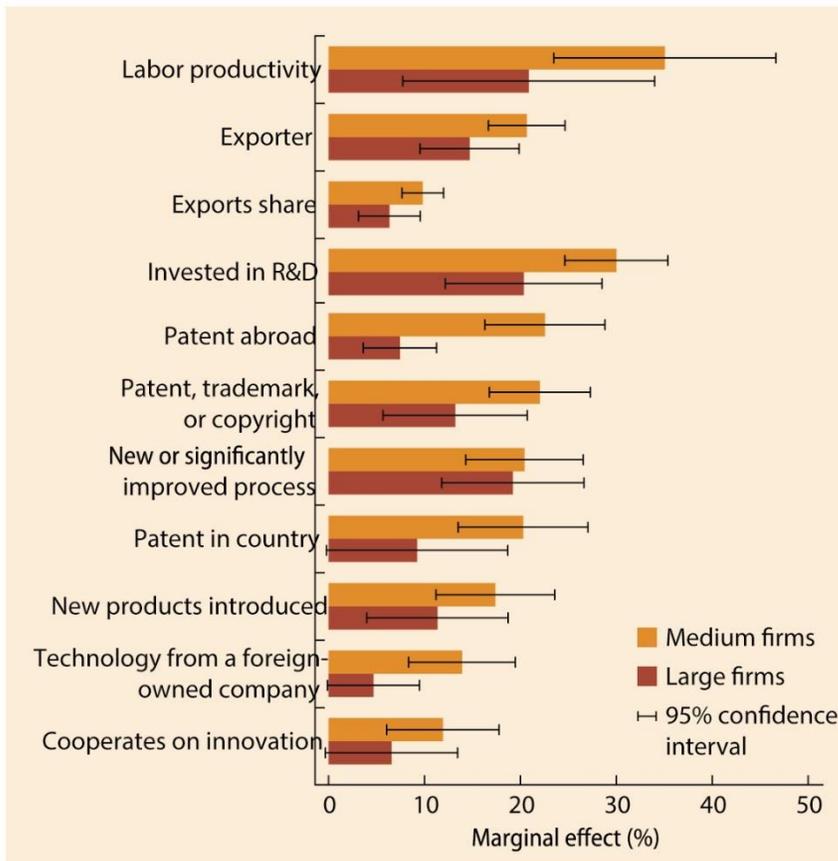
Persons employed by enterprise size, total business economy 2012, or latest available year

	1-9	10-19	20-49	50-249	250+	Total
Austria	663 955	291 803	346 308	511 654	853 689	2 667 409
Belgium	923 573	228 492	321 111	414 864	794 645	2 682 685
Brazil	7 439 200	3 454 837	3 930 623	5 380 858	12 565 022	32 770 540
Bulgaria	560 700	185 152	254 677	402 916	453 994	1 857 439
Czech Republic	1 125 174	261 322	374 220	678 144	1 061 276	3 500 136
Denmark	340 019	152 880	214 146	326 309	558 110	1 591 464
Estonia	116 507	39 685	54 027	91 894	81 954	384 067
Finland	344 491	131 404	167 351	252 787	536 755	1 432 788
France	4 468 390	1 250 362	1 710 685	2 363 918	5 622 970	15 416 325
Germany	4 991 051	2 890 732	3 193 156	5 401 977	9 888 574	26 365 490
Greece	1 279 201	184 421	188 121	238 195	274 140	2 164 078
Hungary	862 029	213 965	235 539	405 984	699 952	2 417 469
Ireland	279 703	120 023	141 587	206 129	285 313	1 032 755
Israel	539 278	191 120	274 667	376 932	611 831	1 993 828
Italy	6 792 243	1 640 665	1 452 061	1 833 330	2 943 880	14 662 179
Japan	4 549 468	2 598 881	3 596 887	20 858 492		31 603 728
Korea	6 053 143	1 414 906	1 748 833	2 660 476	1 800 533	13 677 891
Latvia	170 730	60 615	83 101	135 841	121 487	571 774
Lithuania	212 409	89 124	121 488	200 302	186 574	809 897
Luxembourg	43 337	24 739	32 243	36 882	58 344	195 545
Mexico	2 287 014	415 830	497 041	1 009 294	2 909 617	7 118 796
Netherlands	1 506 207	441 951	608 481	1 003 678	1 761 505	5 321 822
New Zealand	260 634	155 878	177 688	262 160	383 840	1 240 200
Norway	368 295	169 210	198 566	283 870	488 429	1 508 370
Poland	3 003 819	458 553	695 584	1 550 950	2 583 679	8 292 585
Portugal	1 237 441	278 614	332 587	462 751	619 976	2 931 369
Romania	856 873	361 433	497 432	820 615	1 291 015	3 827 368
Russian Federation	174 390	259 913	686 755	4 274 242	12 687 736	18 083 036
Slovak Republic	542 534	104 990	112 092	213 808	410 094	1 383 518
Slovenia	189 192	49 253	55 696	114 098	155 001	563 240
Spain	4 423 192	1 002 913	1 134 208	1 468 819	2 845 059	10 874 191
Sweden	773 351	284 165	369 272	546 300	1 038 239	3 011 327
Switzerland	428 701	342 545	391 711	571 707	857 088	2 591 752
Turkey		5 008 646	1 327 077	1 825 027	2 394 295	10 555 045
United Kingdom	3 058 287	1 486 827	1 963 222	2 895 240	8 345 973	17 749 549
United States	8 680 054	5 704 757	8 207 838	12 011 018	44 813 688	79 417 355

ENTREPRENEURSHIP AND INNOVATION

Medium- size and large firms, which are typically run by the most dynamic entrepreneurs, are also more likely to engage in various forms of innovation. They are more likely to export to foreign markets, obtain patents, invest in research and development (R&D) introduce new products, improve production processes, cooperate on innovation with other firms, import new technologies, and export capital to establish affiliates in foreign markets.

The next figure shows the innovation edge of medium and large firms over small firms in Latin America and the Caribbean, 2010



Lieberman (2015), adopts various terms to refer to this type of innovative entrepreneurship, including “high- growth,” “high- end,” and Lerner’s and Schoar’s (2010) “transformational” entrepreneurship. The important point is to differentiate entrepreneurs with high growth potential from small firms and self- employed individuals with low growth potential.

Lieberman (2015), uncovers some bright spots. It finds that LAC is a region of entrepreneurs, as evidenced by the large number of business owners per capita relative to countries with similar incomes per capita. Moreover, the large number of entrepreneurs is not— as often believed— mainly a reflection of a large informal sector in which low- productivity firms are constantly emerging and dying. The share of business owners with formally registered firms is also relatively high in several LAC economies. At the top end of the entrepreneurial spectrum, LAC experienced impressive export entrepreneurship activity during 2004– 09. Stimulated by global tail winds and augmented by comparative advantage, recently implemented trade agreements, and well- targeted export promotion policies, the region saw impressive survival rates by exporters. It also witnessed the emergence of multinational enterprises— multilatinas— which are increasingly extending their influence beyond their countries’ borders, particularly into neighboring countries. These bright spots notwithstanding, the report identifies a glaring weakness in LAC’s entrepreneurship landscape— namely, the low level of innovation. Firms in the region suffer from a chronic and substantial innovation gap relative to comparator countries and regions. This gap exists not only in terms of R&D and patenting but also in terms of product and process innovation. Innovation gaps are found among small and large firms alike. Indeed, even the region’s superstar entrepreneurs— exporters and multilatinas— lag in important dimensions of innovation. Entry rates into exporting activities by LAC firms have been particularly low, although incumbent exporters did become more innovative under duress during the global financial crisis of 2008– 09. Multilatinas are less innovative, less well managed, and less productive than similar multinationals from other regions.

There are many potential reasons why firms in Latin America grow as slowly as they do. One is the lack of innovation. Entry is just the beginning of the story. In order to grow, or even survive, firms need to continuously innovate.

It is the domain of entrepreneurship that businesses in LAC score relatively badly. According to the Lieberman (2015), LAC firms introduce new products less frequently than firms in otherwise similar economies. High- end entrepreneurs tend to be far away from global best practices in the management of their enterprises, firms’ investment in R & D is low, and patent activity is well below benchmark levels.

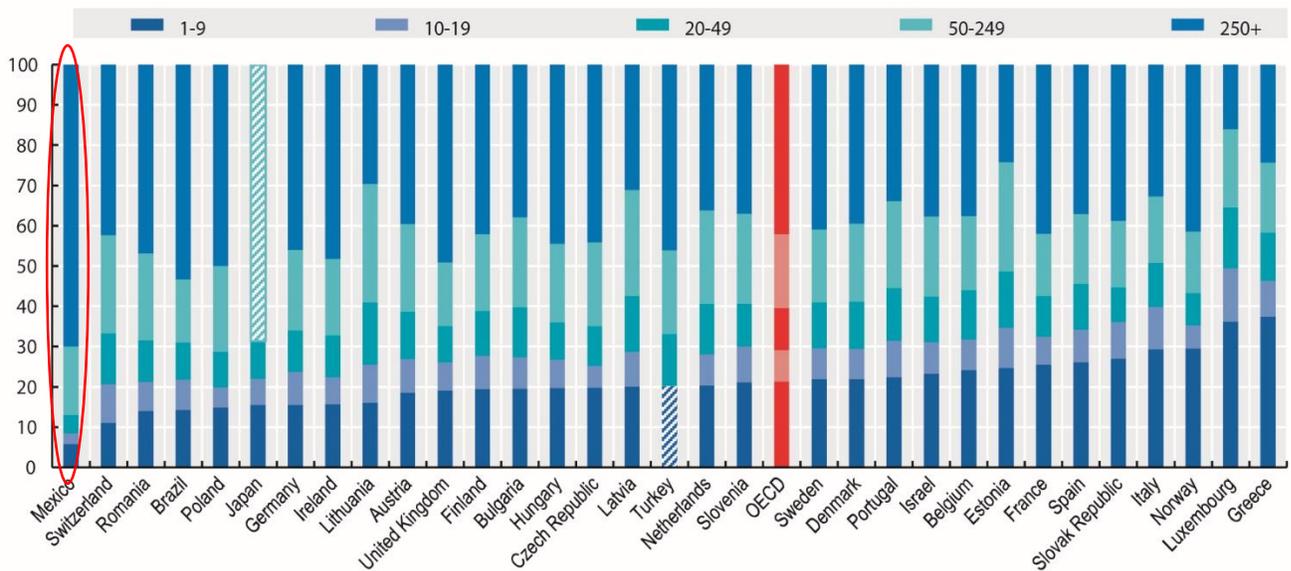
- **Value added in México**

According to the OCDE (2015), next graphic shows the value added in Mexico 69.9 % is provided by large firms, lack on innovation is prevalent in small size firms, probably Mexico the lowest rate of value added of the ODCE countries.

This information provides some important insights for policy makers in order to encourage or shift their entrepreneurship policies budget to the most innovative and creative entrepreneurs more than the micro or new firms with no grow potential.

Mexico shows lack of innovation in 93% of the total firms represented by the smallest ones. A deeper understanding of them would provide us some insights to improve the government programs.

**Value added by enterprise size, total business economy
Percentage 2012, or latest year available**



Value added by enterprise size, total business economy 2012, or latest available year

	1-9	10-19	20-49	50-249	250+
Austria	18.52	8.4	11.68	21.9	39.56
Belgium	24.18	7.57	12.20	18.40	37.65
Brazil	14.24	7.59	9.21	15.70	53.26
Bulgaria	19.48	7.91	12.40	22.31	37.89
Czech Republic	19.77	5.42	9.84	20.88	44.09
Denmark	21.96	7.43	11.74	19.38	39.50
Estonia	24.71	9.93	14.01	27.15	24.20
Finland	19.47	8.22	11.10	19.15	42.06
France	25.51	6.97	10.04	15.49	41.99
Germany	15.52	8.22	10.23	20.04	46.00
Greece	37.44	8.95	11.81	17.46	24.33
Hungary	19.66	7.10	9.27	19.53	44.44
Ireland	15.69	6.71	10.28	19.10	48.22
Israel	23.29	7.82	11.33	19.90	37.66
Italy	29.31	10.50	10.98	16.51	32.7
Japan	15.49	6.55	9.39	68.57	
Latvia	20.06	8.66	13.82	26.32	31.13
Lithuania	16.09	9.43	15.35	29.54	29.59
Luxembourg	36.17	13.33	15.01	19.47	16.02
Mexico	5.79	2.65	4.54	17.08	69.95
Netherlands	20.31	7.75	12.52	23.24	36.19
Norway	29.52	5.77	7.94	15.33	41.44
OECD	21.27	7.88	10.46	18.30	42.09
Poland	14.91	4.92	8.87	21.35	49.95
Portugal	22.36	9.12	12.95	21.69	33.87
Romania	14.00	7.22	10.35	21.59	46.85
Slovak Republic	26.98	9.14	8.52	16.57	38.78
Slovenia	21.14	8.88	10.63	22.41	36.94
Spain	26.11	8.12	11.33	17.37	37.07
Sweden	21.93	7.64	11.30	18.21	40.92
Switzerland	11.05	9.59	12.57	24.42	42.37
Turkey	20.22		12.84	20.83	46.11
United Kingdom	19.06	7.0	9.03	15.7	49.13

The report also identifies significant differences in entrepreneurship and productivity across countries. Part of the explanation for these differences relates to enterprise size. Larger enterprises have higher productivity levels than smaller and are often drivers of innovation. Many microenterprises suffer limited growth potential. Measures of value added broken down by enterprise size provide important insights into structural factors that drive, growth, employment and entrepreneurial value.

The small size firms in Mexico provide only the 2.65% of value added, and micro enterprises, 5.79%.

Lack of human capital to innovate

According to Lieberman (2015), one of the fundamental factor behind the lack of innovation in Latin American Countries (LAC), seems to be its human capital gap, particularly in the education quality dimension. The region lacks the type of human capital— engineers and scientists— that is likely to produce innovative entrepreneurs. A country's stock of human capital is often measured by average years of schooling of the labor force and by the quality of education, assessed through standardized scholastic test scores. LAC countries underperform international comparators on both measures, especially quality (Ferreira and others 2013). The report mentioned, despite higher income per capita, Argentina, Chile, and Mexico all had lower densities of engineers than Spain and Portugal in 1900, such historical gaps appear to be important. Maloney and Valencia Caicedo (2012) find a positive association between engineering density in the 1900s and per capita income in the 2000s. LAC countries still have fewer engineers than the median country and fewer than would be expected given their current level of development. Even the larger and more advanced countries in the region (Brazil, Chile, Colombia, and Mexico) have relatively few engineers.

ENTREPRENEURSHIP AND EXPORT

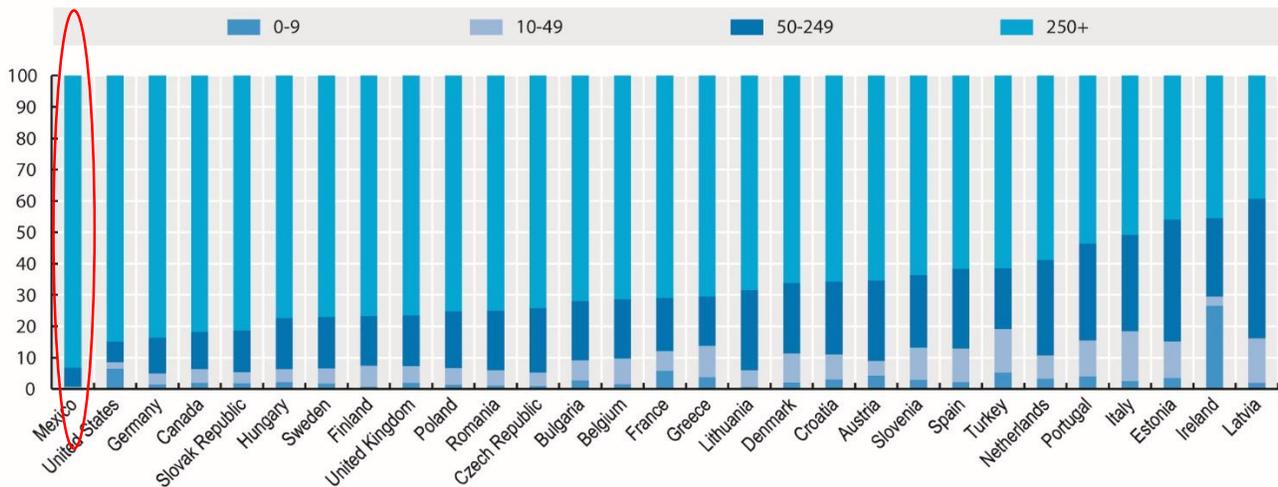
Few companies enter export markets, Accessing new markets through trade is arguably a salient manifestation of transformational entrepreneurship. Barring firms that benefit from high rents, only firms with superior performance can enter in export markets. In fact, most new entrants into export markets do not survive beyond one year, Lieberman (2015).

According to the World Bank's Exporter Dynamics Database, the results are striking: virtually all LAC countries in the sample show export entry rates that are below the benchmark. In contrast, in Asia, the Middle East, and even Africa, entry rates of firms into exporting activities are above the benchmark.

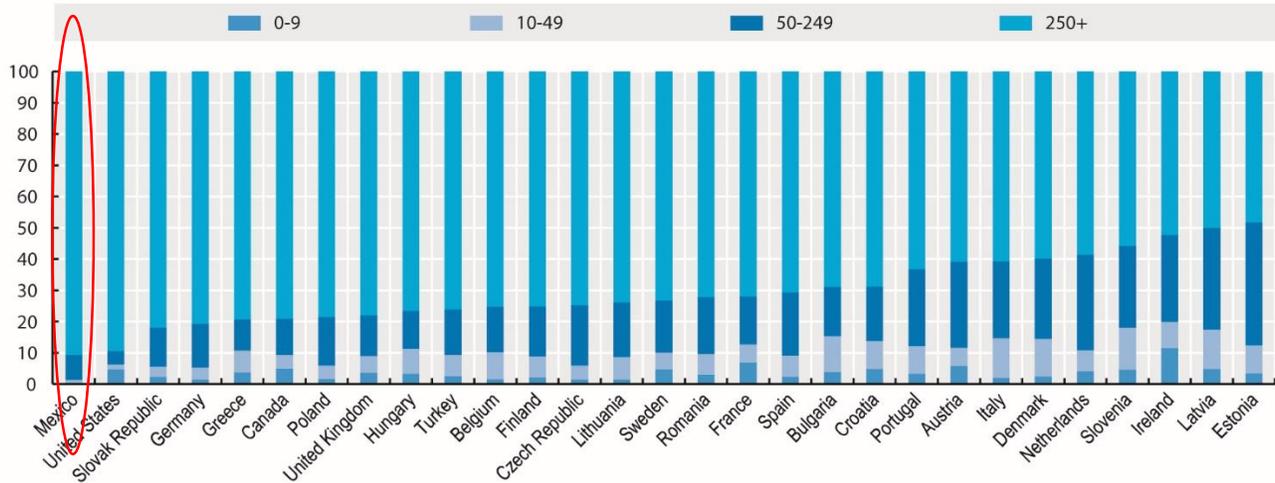
However, exporting entrepreneurs tend to display a significant capacity to adapt to and cope with adverse circumstances, which suggests that greater competitive pressures could be an antidote to the death of innovation among high-end export entrepreneurs in LAC.

In México according to the information provided by the OCDE (2015) shows the Mexican exporters are the medium and large size firms.

Share of exports by enterprise size, industry
Percentage 2012, or latest year available



Share of imports by enterprise size, industry Percentage 2012, or latest year available



HOW CAN POLICY ENABLE TO INNOVATIVE ENTREPRENEURS?

According to Lieberman (2015), the main policy challenges seem to be related to deeper structural features of the enabling environment for innovative entrepreneurship, including not only laws and institutions but also endowments such as infrastructure and the quantity and quality of human capital.

According to the Lieberman (2015), some areas where policy action may be most fruitful can nevertheless be identified by highlighting some of the dimensions of the enabling environment that are vital to innovation and on which LAC countries significantly underperform. **Competition** is a first and highly plausible candidate. To be sure, the relationship between competition and innovation may follow an inverted U- shape, as Aghion and others (2005) compellingly argue: too much competition may weaken the incentives to innovate for firms that lack basic capabilities and are far from the technological frontier, whereas too little competition may not provide sufficient incentives to invest in innovation. The evidence suggests, however, that LAC suffers from too little rather than too much competition, particularly in the markets for inputs and nontradable services. This lack of competition undermines the incentives to innovate, as enterprises can remain profitable by dint of their market

power rather than their innovative efforts. Without a perceived necessity to innovate, the private sector may not give birth to invention.

Second fundamental factor behind the lack of innovation in LAC seems to be its human capital gap, particularly in the education quality dimension. The region lacks the type of human capital—engineers and scientists—that is likely to produce innovative entrepreneurs. However, human capital for entrepreneurship and innovation only partially overlaps with general curricula and is probably badly captured by general schooling attainment or achievements. Hence, it is worth also examining the region's chronic shortage of scientific and engineering training.

A third factor it is lack of access to finance is a significant cause of the region's innovation gap. Although the region underperforms in terms of financial services, such as long-term credit and venture capital, young firms in LAC are not necessarily more credit constrained than young firms in other regions. This potential link requires careful research.

A fourth factor is Insufficient intellectual property rights may be an issue and other weaknesses in the contractual environment may also hinder innovation. But indexes of contract viability and the risk of expropriation do not indicate that LAC countries systematically underperform relative to comparators in other regions.

What is hindering high-growth entrepreneurship: Culture, institutions, or the environment? Is LAC and México, missing truly innovative entrepreneurs? According to the reports already analyzed firms in LAC, included México, are small given the level of development, limiting employment opportunities, creating too few good-paying jobs, and contributing to the flourishing of low-growth firms and self-employment. These facts may point to an environment that is not business friendly; they may also be signs of insufficient entrepreneurial zeal. The two hypotheses provided by Lieberman(2015), may be connected, as an environment that is less favorable to innovation and high-growth entrepreneurship is likely to push potential employees into less dynamic forms of entrepreneurship or even outside the market (through migration, for instance). One way to shed light on these questions is to look back at history. At the beginning of the 20th century, insufficient entrepreneurial spirit reflected the institutions and attitudes toward entrepreneurship inherited from Spain on the one hand, and the lack of techno-literacy and knowledge among the native population on the other (Maloney 2012). Foreign-born entrepreneurs were in charge of the vast majority of businesses in the Americas.

In Mexico in 1935, the share of establishments directed by people born abroad was 35 percent, while some 90 percent of the workers in the same sectors were Mexican.

Spaniards dominate the foreign-born presence among the number of directors (16 percent), followed by people born in the United States (3 percent) and in Germany, France, Poland, and the Russian Federation (2 percent each). This evidence suggests that people from LAC were not particularly prone to entrepreneurial activities at the turn of the century. If this tendency reflected cultural traits or deficits in human capital that were strongly persistent, it could explain the bias toward low-growth entrepreneurial firms in the region.

The perception of insufficient entrepreneurial drive among locals is behind innovative programs that try to attract foreign entrepreneurs. Cross-country heterogeneity in local conditions such as access to credit, barriers to entry, and attitudes of institutions toward entrepreneurship make it difficult to draw causal relationships about why on average people from some countries are more likely than people from other countries to become entrepreneurs. It is almost impossible to isolate the role of the environment from the role of innate entrepreneurial ability or predisposition from cross-country comparisons.

After comparing innovation performance across regions, Lieberman (2015) reviews factors that can potentially affect firms' innovative potential. The focus is on the four factors already mentioned, that have been shown to affect innovation: regulations, competition, access to finance, and entrepreneurial skills. It also briefly reviews the extent to which policy makers can affect entrepreneurship and innovation by exploiting agglomerations and spatial spillovers.

- Building human capital. The challenge of raising the quality of education remains, but it goes well beyond test scores. For example, LAC has a historic deficit of engineers, dating at least to the early 20th century.
- Improving logistics and infrastructure. Modernizing ports, transport, and customs can add a competitive edge to products from the region.
- Enhancing competition. Although the region has globalized, many industries remain sheltered from competition. This protection has the dual negative effects of reducing productivity growth in those sectors and handicapping the export sector, which relies on their services and intermediate goods.
- Improving the contractual environment. Although intellectual property rights are not the only relevant aspect of domestic institutions that affect productivity, innovation is unlikely to take root without adequate protection. With LAC's recent social gains, growing demands for access to good-quality services have increased.

Middle classes expect not only income gains so that their children will see even more progress in the future but also improved public services for the current generation. With increased productivity, private incomes will rise, increasing public revenues and the state's capacity to invest in service delivery. In time, if we win the productivity battle, we will enter into a virtuous cycle of stronger public sectors, higher growth, and opportunities for all.

What explains the innovation gap? Many factors affect innovation, both directly and through their interaction with one another. There is probably no universal recipe for enhancing innovation, just as there is no single recipe for growth. But certain factors including regulations, competition, financial development, entrepreneurial skills, and agglomerations/externalities have repeatedly been shown to affect innovation. LAC is not likely to boost innovation without addressing these factors. Lieberman (2015).

ENTREPRENEURSHIP IN HIDALGO MÉXICO



According to Lieberman (2014), increasing the effectiveness of programs aimed at supporting firm (and employment) growth may call not just for a shift of emphasis from small to young firms; it is necessary for there to exist a deeper understanding of the characteristics of young firms of all sizes that enable them to survive and thrive in market economies.

After analyzing the three most representative reports of entrepreneurship, GEM (2014), OCDE (2015), and Lieberman (2014), and the main factors about entrepreneurship, we will analyze the entrepreneurship in Mexico through taking a small sample of the manufacturing sector in Hidalgo, México. The automotive sector is one of the most representative and strategic industries for the entity.

The government of the state of Hidalgo, México in 2011 created the Hidalgo Institute, for Competitiveness, in order to support entrepreneurship, micro, small, and medium size companies through three main services: financing, training skills, and supportive services for innovation in product and process without age differentiation. In order to attend the low productivity of the manufacturing industry, in 2013 this organization provided support to small and medium size firms to improve their quality standards, the Institute identified sixty companies to attend the program and spent almost two years implementing and certifying the international quality standard in the first fifteen firms interested, without age discrimination. The results of the program were satisfactory and the firms in general increased their productivity.



Insights provided by Lieberman (2014), OCDE (2014), and GEM (2014), provide us the guidance to build an innovation edge test.

These fifteen firms were selected to be interviewed to get a better understanding of the entrepreneur environment of the Hidalgo state in automotive industry. The following table shows the results.

Employment and growth: Comparison between start Ups, small and medium size firms in manufacturing sector of automotive industry in Hidalgo, Mexico.

	Year of establishment	Number of Emplees 2013	Number of Emplees 2015	% Employment growth 2013-2015	% Sales growth 2013-2015
1	2014	6	15	150%	96%
2	2013	7	9	29%	22%
3	2013	23	25	9%	20%
4	2013	28	38	36%	150%
5	2012	47	58	23%	86%
6	2011	7	9	29%	0%
7	2008	4	7	75%	52%
8	2008	349	451	29%	16%
9	2004	70	76	9%	20%
10	2003	200	196	-2%	9%
11	2003	12	14	17%	1%
12	2002	19	19	0%	39%
13	2002	16	15	-6%	0%
14	2000	21	33	57%	0%
15	1993	9	14	56%	25%

Source: Institute of Competitiveness of Hidalgo (IHCE, 2015).

Innovation edge in the manufacturing sector of automotive industry in Hidalgo, Mexico.

	Year of establishment	% Employment growth 2013-2015	% Sales growth 2013-2015	International Quality Standards ISO 9000 or other	Invested in quality controls improvements and certification	Technology from a foreign owned company	New or improved product	Invested in R & D	New or significantly improved process	Cooperates on Innovation	Patent	Trade mark	Exporter	Financed	Engineer Skill labor
1	2014	150%	96%	X	X		X	X	X	X	X	X			X
2	2013	29%	22%	X	X		X	X	X	X	X	X			X
3	2013	9%	20%	X	X		X		X			X			X
4	2013	36%	150%	X	X	X	X	X	X	X		X			X
5	2012	23%	86%	X	X	X	X	X	X	X		X			X
6	2011	29%	0%	X	X	X	X	X	X	X		X			X
7	2008	75%	52%	X	X				X	X		X			X
8	2008	29%	16%	X	X		X	X	X	X		X			X
9	2004	9%	20%	X	X	X	X		X	X		X	X		X
10	2003	-2%	9%	X	X		X		X	X		X	X		X
11	2003	17%	1%	X	X	X	X	X	X	X		X	X		X
12	2002	0%	39%	X	X				X	X		X	X	X	X
13	2002	-6%	0%	X	X				X	X		X			X
14	2000	57%	0%	X	X	X			X	X		X	X	X	X
15	1993	56%	25%	X	X		X	X	X	X		X			X

The table shows an important relationship between age growth and employment. The young firms (within 5 years of creation in Mexico) had a bigger growth in the last three years than the older companies and provided more employment, all of them had shown improvement in product and process.

Young firms are the most innovative; as the table above shows, two of six companies had patented products.

It is also important to identify that the older firms had more propensity to export.

CONCLUSIONS AND RECOMMENDATIONS

- Entrepreneurs are fundamental drivers of growth and development and they have been important actors in the transformation from low- income societies characterized by low productivity and subsistent self- employers into dynamic economies characterized by innovation and a rising number of well- remunerated workers.
- The young innovative firms have shown a positive relationship between age, growth, and employment, adopting various terms to refer to this type of innovative entrepreneurship, including “high- growth,” “high- end,” and Lerner’s and Schoar’s (2010) “transformational” entrepreneurship. The important point is to differentiate entrepreneurs with high growth potential from small firms and self- employed individuals with low growth potential.
- In Mexico 93% of the firms represented by micro and small firms generate 32% of formal employment opportunities. In the absence of better employment prospects, many people end up working for themselves, fueling a vicious cycle of small size firms and few good jobs for future job seekers. These micro and small size companies are rarely innovative and productive.
- Medium- size and large firms, which are typically run by the most dynamic entrepreneurs, are also more likely to engage in various forms of innovation. They are more likely to export to foreign markets, obtain patents, invest in research and development (R&D), introduce new products, improve production processes, cooperate on innovation with other firms, import new technologies, and export capital to establish affiliates in foreign markets. In México these large size firms are the most productive and provide 60% of the employment.
- Lederman (2014) suggests a change in policy paradigm from the current emphasis on supporting small firms, instead focusing on emphasizing the support of start- ups and young firms.) however, it is important to get a deeper understanding of the innovative edge of the main and vibrant sectors in each country, regions and state to be able to reinforce the entrepreneurial ecosystem and consequently encourage the most innovative and transformational entrepreneurs.
- The results of the survey applied to the automotive firms, located in Hidalgo, Mexico showed there are a relationship between age, growth and employment. Young firms (within 5 years of creation in Mexico) showed a better performance: bigger growth in the last three years than the older companies, provided more

employment, shown improvement in product and process including patenting in some cases but no one export.

- The GEM provides us important insights through the framework conditions, to build a more efficient entrepreneurship ecosystem includes improvements in:
 - Education
 - R&D transfer
 - Access to finance
 - Friendly regulatory framework
- The GEM survey considered that the strongest enabler of entrepreneurship in Mexico is its infrastructure; however, regulation in national policy has the lowest positive perception. Financing programs and basic education needs improvement, and there are also important issues to address in terms of internal market openness; progress in these areas will greatly benefit the entrepreneurial ecosystem.
- The confidence of Mexicans in their ability to start a business has been decreasing, but their perception of the opportunities for doing so has increased in the same period. Fear of failure has remained generally consistent since GEM data was first collected in the country in 2001 (about one third of the population). In the past three years,
- Building a supportive entrepreneurship ecosystem requires time, resources, and political commitment.
- The big challenge is getting entrepreneurs to be more innovative and technologically oriented, which will increase competitiveness and satisfy the global consumer.
- Coordinating efforts with the private sector, leveraging the screening abilities of private agents, and using risk-sharing arrangements to align incentives could help governments try to pinpoint firms worthy of public sector support.

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