

"Startups" network as an instrument for open innovation during uncertainty: the legal framework in Ecuador

La red de emprendimiento como instrumento para innovación abierta durante tiempos inciertos: el marco legal en Ecuador

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City: Quito

Country: Ecuador

Original article (research)

RFJ, No. 9, 2021, pp. 291-318, ISSN: 2588-0837

ABSTRACT: The purpose of an entrepreneurship is to build and scale a sustainable business model through an enterprise. The lack of tangible and intangible resources is often at this very early stage. According to previous studies, new ventures could overcome the lack of resources -key to their success-forming relationships with partners (networking) through open innovation (OI) processes. However, the structure of each network affects their own processes and outcomes; the innovation processes and the network structure mutually shape each other. Opening up the innovation process implies the involvement of startups in relationships with different typologies of actors: Incubators, Large corporations, Higher education institutions, among others. Understanding the role, relation, position and power of each actor in the ecosystem allow us identify its network position which is critical for resource access.

In order to determine the level of ecosystem maturity and its interactions is necessarily to analyze the entrepreneurship context. According to the Ecuadorian Entrepreneurship Profile (GEM, 2019) Ecuador has a strong position related to physical infrastructure, cultural and social norms and entrepreneurial education at post-school stage comparing with the media of the World. However, indicators like entrepreneurial finances, taxes and bureaucracy, government support, R&D transfer and entrepreneurship programs are quite far from the global average.

Utilizing the newly publish Ecuadorian Organic Law for Entrepreneurship and Innovation (Official Registry No. 151, 2020) which aims to provide a normative framework that encourages the entrepreneurship, innovation and technological development this article analyzes startup's network centrality elements focusing on:

- i) Main actors and the nature of these relations;
- ii) Institutions which hold the central position in the network;
- iii) Partnerships and networks to support innovation processes and outcomes;
- iv) Financial mechanisms to support entrepreneurship and innovation; and,
- v) Education to carry out partnerships.

As a consequence, the main actor determined by law is CONEIN as a ruling body and the Entrepreneurship Advisory Council. The presence of individual entrepreneurs is scarce. Although, CONEIN holds the central position in the network, in that aspect is a vast opportunity for Entrepreneurship Advisory Council to boost participation among private sector members and be a higher influence in the public policy making. By law, partnerships and networks to support innovation processes and outcomes are not clear, but entrepreneurs acquire greater

centrality in the ecosystem than before, which could privilege their access to resources and knowledge especially from Higher education institutions.

Financial mechanisms to support entrepreneurship and innovation are established, but will be necessary to allocate budget for this instrument, as well as for the entrepreneurship national strategy. The private investment is mentioned, nevertheless deep legal reforms are demanded in order to incentive its presence. Education regulation is incorporated in the law to carry out entrepreneurship and innovation. In the hereafter, will be necessary to incorporate partnership and financial education programs.

The conception of adequate articulated programs for entrepreneurship, management, research and development, transfer, R&D funding, networking and human capital strengthen could favor open innovation. However, other instruments are necessary in terms of information release, taxability, bureaucracy, labor and direct investment that allows open innovation appear. The purpose of the Government is key to ensure governance, rule of law, and accountability of itself and entrepreneurship actors to ensure stability and economic prosperity.

KEY WORDS: Entrepreneurship, open innovation, networking, networking structures, performance, rule of law.

RESUMEN: El propósito de un espíritu empresarial es construir y escalar un modelo de negocio sostenible a través de una empresa. La falta de recursos tangibles e intangibles se encuentran a menudo en esta etapa muy temprana. Según estudios previos, los nuevos emprendimientos podrían superar la falta de recursos, clave para su éxito, formando relaciones con socios (networking) a través de procesos de innovación abierta (OI). Sin embargo, la estructura de cada red afecta sus

propios procesos y resultados; los procesos de innovación y la estructura de la red se moldean mutuamente. Abrir el proceso de innovación implica involucrar a las startups en relaciones con diferentes tipologías de actores: Incubadoras, Grandes corporaciones, Instituciones de educación superior, entre otros. Comprender el papel, la relación, la posición y el poder de cada actor en el ecosistema nos permite identificar la posición de su red que es fundamental para el acceso a los recursos.

Para determinar el nivel de madurez del ecosistema y sus interacciones es necesario analizar el contexto del emprendimiento. Según el Perfil de Emprendimiento Ecuatoriano (GEM, 2019) Ecuador tiene una posición fuerte relacionada con la infraestructura física, las normas culturales y sociales y la educación emprendedora en la etapa post-escolar en comparación con los medios del mundo. Sin embargo, indicadores como las finanzas empresariales, los impuestos y la burocracia, el apoyo gubernamental, la transferencia de I + D y los programas de iniciativa empresarial están bastante lejos del promedio mundial.

Utilizando la recién publicada Ley Orgánica de Emprendimiento e Innovación (Registro Oficial No. 151, 2020) que tiene como objetivo proporcionar un marco normativo que fomente el emprendimiento, la innovación y el desarrollo tecnológico, este artículo analiza los elementos de centralidad de la red de startups enfocándose en:

- i) Principales actores y naturaleza de estas relaciones;
- ii) Instituciones que ocupan una posición central en la red;
- iii) Alianzas y redes para apoyar los procesos y resultados de innovación;
- iv) Mecanismos financieros para apoyar el espíritu empresarial y la innovación; y,
- v) Educación para realizar alianzas

En consecuencia, el actor principal que determina la ley es el CONEIN como órgano rector y el Consejo Asesor de Emprendimiento. La presencia de empresarios individuales es escasa. Si bien el CONEIN ocupa la posición central en la red, se presenta una gran oportunidad para que el Consejo Asesor de Emprendimiento impulse la participación de los miembros del sector privado y tenga una mayor influencia en la formulación de políticas públicas. Por ley, las alianzas y redes para apoyar procesos y resultados de innovación no son claras, pero los emprendedores adquieren una mayor centralidad en el ecosistema que antes, lo que podría privilegiar su acceso a recursos y conocimientos, especialmente de las instituciones de educación superior.

Se establecen mecanismos financieros de apoyo al emprendimiento y la innovación, pero será necesario asignar presupuesto para este instrumento, así como para la estrategia nacional de emprendimiento. Se menciona la inversión privada; sin embargo, se demandan profundas reformas legales para incentivar su presencia. La regulación educativa está incorporada en la ley para llevar a cabo el emprendimiento y la innovación. En lo sucesivo, será necesario incorporar programas de asociación y educación financiera.

La concepción de programas articulados adecuados de emprendimiento, gestión, investigación y desarrollo, transferencia, financiamiento de I+D, networking y fortalecimiento del capital humano podría favorecer la innovación abierta. Sin embargo, son necesarias otros instrumentos en términos de divulgación de información, tributación, burocracia, mano de obra e inversión directa que permitan que surja la innovación abierta. El propósito del Gobierno es clave para garantizar la gobernanza, el estado de derecho y la rendición de cuentas de sí mismo y de los actores empresariales para garantizar la estabilidad y la prosperidad económica.

PALABRAS CLAVE: Emprendimiento, innovación, redes de colaboración, estructura de las redes de colaboración, desempeño, normativa.

INTRODUCTION

According to the definition by Blank (2010) a startup is a company, partnership or temporary organization designed to search for repeatable and scalable business model. In this phase, new ideas are brought to the market and transformed into economically sustainable enterprises (Spender et al., 2016). However, the establishment of startups presupposes a lack of tangible and intangible resources (Wymer and Regan, 2005) in order to build new business models. Existing studies give evidence that forming relationship with partners is key to their success (Teece, 2010). In addition, by adopting open innovation (OI), new ventures could overcome the lack of resources derived from the liability of their smallness and newness (Bogers, 2011) allowing both the acquisition of resources and the introduction of new products in the market. In the OI literature, networks have been considered as an instrument to their success (West and Gallagher, 2006).

Although startups are powerful engines of open innovation (OI) processes (Colombo and Piva, 2008; Davila et al., 2003; Mustar et al., 2008). Wang and Fang (2012) have found that network structure affects new firms' innovativeness. It is necessary for startups as well as for other actors involved in the innovation processes to understand how the structure of the network affect their own processes and outcomes. Neyens et al. (2010) considered the impact of the duration of alliances on startups' innovation performance. Zhang and Li (2010) have found that having relations with intermediary organizations (e.g. technology service firms, accounting firms, law and talent search firms) is positively related to new ventures' product

innovation. Pérez Pérez and Sánchez (2003) have found that startups' networks evolve over time.

These findings are just some of the examples of how innovation processes and network structure mutually shape each other: actors in the network define the requirements for new products or services, accept or refuse them, and modify their relations in the process. This phenomenon is especially relevant when considering startups, which change the structure and processes of the network when entering the market (La Rocca and Snehota, 2014). Likewise, Spender *et al.* (2016) notes that regardless of the context, environmental uncertainty, affects the causal link between network structure and the considered measure of performance.

1. THE ACTORS BEHIND STARTUP'S NETWORKING

Opening up the innovation process implies the involvement of startups in relationships with different typologies of actors. Qualitative aspects of the relations in the network underlines the importance of two factors: the actors involved and the evolution of the relations over time (Spender *et al.*, 2016). Understanding the nature of these relations and the mechanisms used to manage them is just as important as understanding their structure. The following actors are frequently related with Startups and Open Innovation:

a) Incubators. An incubator is a company that promotes the development of a new startups by providing technical advice, services such as management training or office spaces. According to studies, there are three types of incubators: technology-based, industrial and higher education incubators. Each of them are focus on stimulate innovation processes along the lifecycle of a startup. According to the Higher Education,

Science, Technology and Innovation National Secretary (SENESCYT, 2020), 24 incubators are registered and active, 11 (45.8%) of them belong to higher education institutions and 13 are private (54.2%).

b) Large corporations. In the entrepreneurship ecosystem large companies play an important role for startups to create new spin-offs or spinouts (Spender, J. *et al.*, 2017) as well as to give access for resources and information. Large corporations adopt different mechanisms to fund startups as venture capital or joint ventures collaborations. According to UNESCO (2020) in United States 71.5% (\$340,728M) of the R&D country spending corresponds to large corporations, equivalent to 1.93% of its GDP. Meanwhile, in 2019 China and Japan large businesses invested in R&D \$287,795.3M and \$131,839.8M respectively, equivalent to 77.29% and 77.76% of the total R&D national expenditure (Fig.1). Unfortunately, in Ecuador this type of mechanism is not developed; the data of UNESCO (2020) show that large companies invested in R&D only \$343,061K equivalent to 0.17% of the GDP and 42.3% of the total R&D national investment.

c) Higher education institutions. A relevant actor in new ventures' network is Higher Education Institutions (HEIs); an OI ecosystem for startups is not complete without their integral role. HEIs are an important source of knowledge, upon which innovation has become dependent, making HEIs crucial for open innovation. Simões *et al.* (2012) analyzed the role of HEI as an intermediary, bridging the gap between producers and consumers of knowledge, since they possess staff and various research units that can help venture startups

and entrepreneurs to identify opportunities, mobilize resources, and create value. As a network actor HEIs incentivize and energize the diverse elements to integrate into an innovation network (Spender, *et al.*, 2016), that promotes knowledge sharing and supports nascent entrepreneurs at the various stages of venture creation. In high-income countries innovation processes are well supported by HEIs that each year receives and compete for public funds to fund innovation, science and technology development. In 2018 US HEIs invested \$62,349.0M in R&D. Nevertheless, in the same year the total R&D investment of South America countries reached \$52,546.4M, \$9,802.6M less than US HEIs (UNESCO, 2020).

d) Other actors. According to the "Regulation for the registry, accreditation and strengthening of innovation spaces and agents in Ecuador" (SENESCYT, 2017) other innovation actors involved in the national entrepreneurship ecosystem are entrepreneurship accelerators linked with financial, market and internationalization services. Risk capital operators which focus on the risk capital management and investment; they have a similar structure like the Venture Capital firms (VC). Also, are the innovation managers dedicated to design research and innovation projects for knowledge transfer. Finally, are the coworking spaces dedicated to provide coworking services like events, networking and shared-based infrastructure areas for new entrepreneurs.

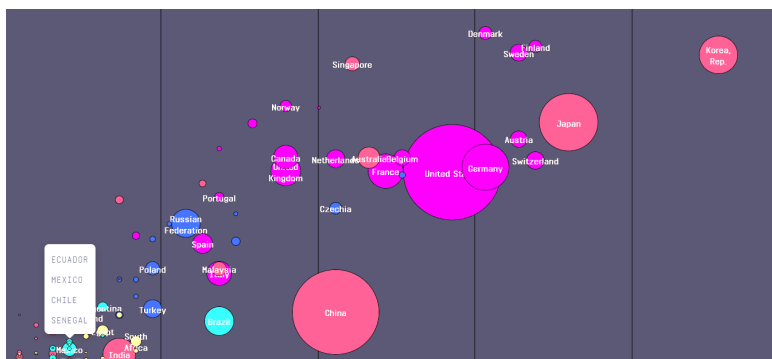


Figure 1: Rank of R&D investment per country.

Source: UNESCO (2020, s. p.).

Understanding the role, relation, position and power of each ecosystem actor is key to identify the maturity of a startup ecosystem. Strong networks allow startups to merge from low innovation to high innovation initiative in a relative short time.

2. NETWORK ORIENTATION

Network position represents a critical resource for startups because it allows to exchange and leverage its substantial resources and the activities of partners in the network (Wang and Fang, 2012). Network centrality defined as the level of position, which the new venture occupies within its industry boundaries. Centrality will be established by the relation among actors within startup network: HEIs, incubators, VC firms, large companies, among others. Therefore, network centrality provides a positional advantage to a new venture enabling it to obtain resources or information from others, which is needed for growth and promote its innovation. Network centrality increases the volume of innovation and knowledge acquired from a wide variety of sources. In other

hand, cooperative network is determined by social network acceptance. According to literature, cooperative relationships can assist a new venture's competition. The hypothesis about network centrality and innovation bet that there is a positive relationship between the degree of network centrality a startup occupies in their network and its innovative performance. Therefore, there is a negative relationship between the degrees of interaction with cooperators a startup fostered and its innovative performance.

3. ECUADORIAN ENTREPRENEURSHIP PROFILE

According to Global Entrepreneurship Research Association (2019), the ranking of entrepreneurial framework in Ecuador evidence a strong position of the country related with physical infrastructure (6.97), cultural and social norms (5.92) and entrepreneurial education at post-school stage (5.39) comparing with the media of the World. However, indicators like entrepreneurial finances (2.88), taxes and bureaucracy (2.66), government support and relevance (2.66), research and development transfer (3.10) and government entrepreneurship programs (3.44) are quite far from the globe average.

In the region, Ecuador ranks second in the Total early-stage (TEA) entrepreneurial activity and forth on Establish business ownership rate (Fig. 2). One important function of new entrepreneurship can be to introduce new products and services into markets. According to the Global Entrepreneurship Monitor GEM (2019) answers to new questions in the 2019 research reveal that in seven economies (Canada, Colombia, Guatemala, Ecuador, Panama, Chile and the United Arab Emirates), one in 20 adults are starting or running a new business with products or services that they say are at least new to the local area. This is an encouraging sign that innovation is truly entering the heart of entrepreneurship but

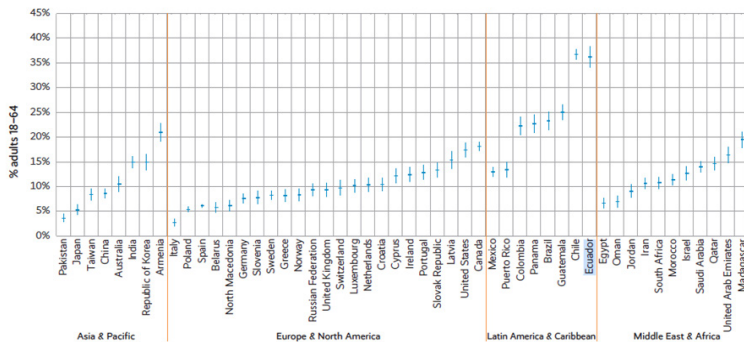


Figure 2: Total early-stage Entrepreneurial Activity (TEA) rate (%adults) in 50 economies in four regions

Source: GEM adult population survey (2019, s. p.)

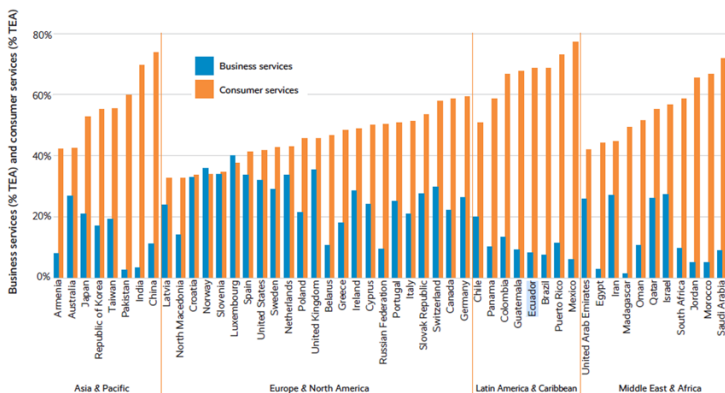


Figure 3: Business services and consumer services as % TEA.

Source: GEM adult population survey (2019, s. p.)

Also, as shown in the Fig. 4 the TEA rate related with the GDP/per capita shows a concentration of entrepreneurs well-paid in the high-income countries, meanwhile in the low- and middle-income economies like Ecuador the concentration of entrepreneurs surveyed are in the lowest decile of the GDP/per capita rank. Of the 33 economies in the high-income group, 26 have a TEA rate that is less than 15%.

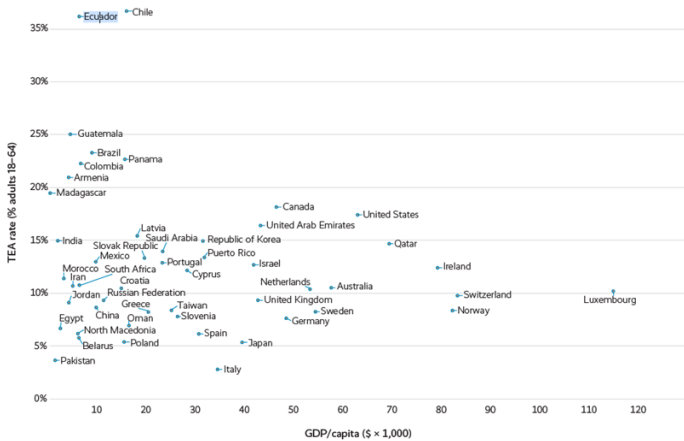


Figure 4: Total early-stage Entrepreneurial Activity (TEA) rate and GDP/Capita.

Source: GEM adult population survey (2019)

In terms of the social and cultural foundations of entrepreneurship 59% of adults (18-64) in Ecuador reports knowing someone who has started a business in the past two years, 56% mention that there are good opportunities to start a new business in their area and 55% of adults surveyed believe that is easy to start a business in Ecuador (GEM, 2019). However, around 82.7% of early-stage entrepreneurs reported

that they started a business because of a lack of better options, which stills as the main motivation to start a business (Fig. 5).

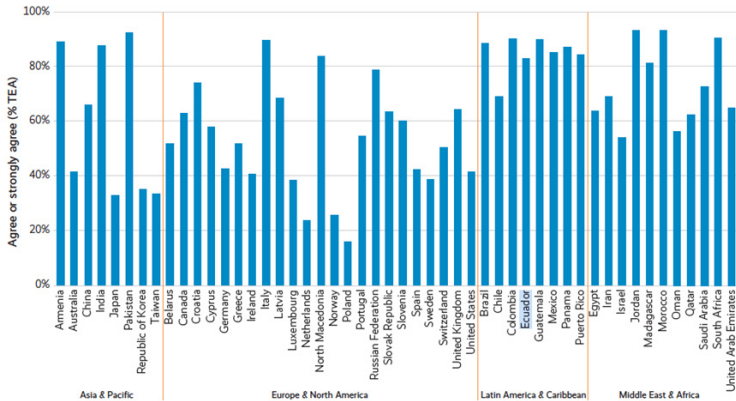


Figure 5: Motivation to earn a living because jobs are scarce.

Source: GEM adult population survey (2019)

According to the World Bank Group’s Doing Business report (2020), Ecuador is among the lowest-ranked countries in terms of the cost (time and money) of starting a business. And while there have been some recent reductions, import tariffs are still relatively high compared to neighboring countries. This may translate into higher production costs, limiting the competitiveness of Ecuadorian products in the international market. Furthermore, foreign direct investment is much lower than in neighboring countries and is currently trending towards a much lower figure than the official expected number for this year. Policies aimed at boosting foreign investment are not having the anticipated impact.

The discernment of the entrepreneurial profile of the country gives us a proper framework for the analysis of the entrepreneurship and innovation law –from the networking

point of view- that catalyzes entrepreneurship from a necessity-driven business, to a sophisticated model based on high-revenue, innovation, technology-based and internationalization of enterprises.

4. LAW FOR ENTREPRENEURSHIP AND INNOVATION IN ECUADOR

After several rounds of analysis, on February 28, 2020 the National Assembly of Ecuador approved the Organic Law of Entrepreneurship and Innovation, published in the Official Registry No. 151. According to its Article 1 the purpose of the law is to provide a normative framework that encourages the entrepreneurship, innovation and technological development in Ecuador for all economic activities of public and private nature, in its various forms.

Art. 2 mentions the following objectives of the law:

- a) Facilitate the creation, operation and elimination of enterprises;
- b) Promote the efficiency and competitiveness of entrepreneurs;
- c) Promote public policies and programs for technical, financial and administrative support for entrepreneurs;
- d) Strengthen the articulation and synergy between higher education institutions and the actors of the national productive system; and,
- e) Promote innovation in productive development.
(Organic Law of Entrepreneurship and Innovation, 2020)

In the regulatory context, the plenary session considers that: "a law is required to facilitate and harmonize the participation of actors in the entrepreneurial ecosystem that encourages entrepreneurship, as well as maximizes its duration,

economic and social results" (Organic Law of Entrepreneurship and Innovation, 2020) Therefore, it is necessary to analyze how the new regulation affects the particular aspects of strengthening networking and innovation that have been previously mentioned.

5. ANALYSIS OF THE ENTREPRENEURSHIP AND INNOVATION LAW ON STARTUPS NETWORKING

Understanding the complexity of new ventures' networks is key adopting innovation processes for startups' success. According to the literature, the centrality of an enterprise in its network positively influences the obtaining of information and access to resources, aspects that favor its acceleration and success. However, getting the system to embrace new initiatives is a great challenge for decision makers, since it implies risk and resources for the oldest members of the business, knowledge and innovation networks. Therefore, will be appropriate to highlight the wide opportunity that the public sector has through the new Entrepreneurship and Innovation Law to promote the articulation the institutions and actors in the entrepreneurship system to allow a subtle transition of new entrepreneurs in the system until reaching greater centrality. Below is shown the analysis of the startup's network centrality elements and their approach in the new law.

5.1. Main actors and the nature of these relations

According to Art. 3 of the Entrepreneurship and Innovation Law (2020) in order to have a governing body for entrepreneurship and innovation public policy, the National Council for Entrepreneurship and Innovation (CONEIN) is created. Additionally, a Entrepreneurship Advisory Council is also created in charge to advise and support CONEIN. It will be constituted for the monitoring of public policies integrating

representatives from several industries like manufacture, tourism, commerce, finances among others public and private institutions. The following are also recognized: the governing body of public real estate management and business accelerators or entrepreneurship support centers (Art. 13), commercial offices in Ecuador abroad (Entrepreneurship and Innovation Law, 2020, Art. 15), the Ministry of Education, SENESCYT, and the Technical Secretariat for Training and Vocational Education (Art 19). Different types of investors appear on the radar of the entrepreneurial ecosystem, such as: seed capital and venture capital investors (Entrepreneurship and Innovation Law, 2020, Art. 25-26), angel investors (Entrepreneurship and Innovation Law, 2020, Art. 27) and crowdfunding managers (Entrepreneurship and Innovation Law, 2020, Art. 32) that connect promoters with investors.

The spirit of the legal framework promotes better articulation and collaboration between the public and private sectors in order to stimulate entrepreneurship. In addition, an institutional framework is strengthened by the creation of CONEIN as a governing body in charge to regulate and control a large part of the ecosystem members to reach a national strategy and the formulation of public policies, programs and projects to support entrepreneurship. However, from the point of view of startups networks and open innovation the law without a clear configuration of how this structure will put forward more specific instruments and programs to cover the lack of tangible and intangible resources, entrepreneurship collaboration, data generation and management of innovation and technology driven process stills sketchy.

Without prejudice to their corporate status, the law identifies entrepreneurs as "individuals" or "subjects" of these services, losing sight of their relations in networks that

could benefit the ecosystem and therefore in opportunities to consolidate and grow the public and private startup investment.

5.2. Institutions which hold the central position in the network

Although there is a broad mapping of actors that nourishes the map of entrepreneurship networks, since the object of the law is to achieve mainstreaming of the public policy in charge of the National Council for Entrepreneurship and Innovation (CONEIN), this institution gains power and prominence compared to the rest of the actors. From the point of view of entrepreneurs, regarding the publication of the law, the CONEIN owns a central point in the network diminishing the impact of the relationships between startups among the actors (Fig. 6).

The role that the Entrepreneurship Advisory Council can play, as an organization that brings together all type of private actors is essential, as well as its relationship with industry associations and cluster representatives strengthening their participation as entrepreneurs in the formulation of policies and programs. According to the law, new entrepreneurs are beneficiaries, despite the fact that their articulation and coordination with all actors, especially funding institutions and knowledge facilitation organizations is key to achieving innovation success.

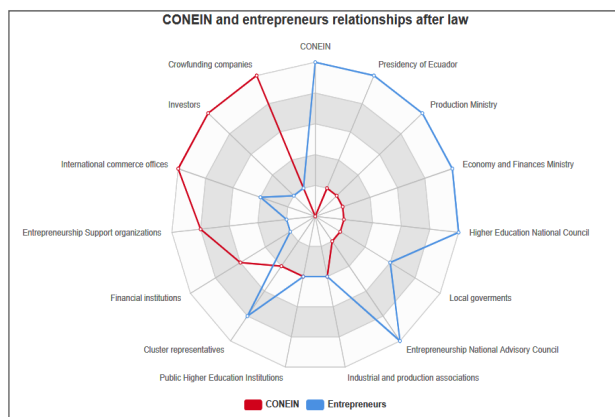


Figure 6: Location by law of CONEIN and entrepreneurs in the network.

Own elaboration

5.3. Partnerships and networks to support innovative processes and outcomes

According to the Article 2 is a purpose of the Organic Law of Entrepreneurship and Innovation (2020): “to strengthen the interaction and synergy between the educational system and public, private, mixed, popular and solidarity-based, cooperative, association, community and artisanal actors of the national productive system”. This objective is possible within an entrepreneurial framework that facilitates, includes and encourages the development of companies and projects in a specific place (Organic Law of Entrepreneurship and Innovation, 2020, Art 3). Therefore, connections between public and private actors are highlighted for the formulation of public policies through CONEIN (Organic Law of Entrepreneurship and Innovation, 2020, Art. 6), and the Consultative Council on Entrepreneurship and Innovation (Organic Law of

Entrepreneurship and Innovation, 2020, Art. 10). Likewise, the law implements new simplified corporate modalities for the creation and liquidation of companies, which favor the optimization of time and resources for entrepreneurs.

In Fig. 7 roles and actors described in the law and their location on the entrepreneurship map are drawn where the centric positions reflect greater incidence and impact of the actors in the ecosystem. As is shown, entrepreneurs acquire greater centrality than before, regarding financial services, investment, access to knowledge and other support services, while their relationships with the public institutions are centralized in the CONEIN. Relations with local governments and industry representatives are maintained.

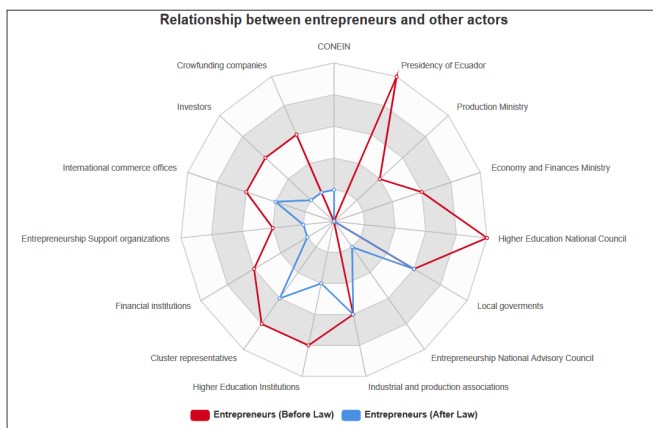


Figure 7: Relationship between entrepreneurs and other actors before and after the Law of Entrepreneurship and Innovation.

Own elaboration

In terms of the centrality theory, the lack of tangible and intangible resources and the liability of the smallness and newness of new firms characterized in the Ecuadorian entrepreneurship profile could be mitigated if the startups

occupy a central position in the network like now. The Entrepreneurship Advisory Council again will play an important role to release information between their members and promote initiatives for entrepreneurship training, R&D transferring, networking and human capital strengthen that could favor open innovation processes.

Unfortunately, the law does not explicitly encourage collaboration between entrepreneurs, nor does it propose schemes for greater articulation between public and private for the provision of services other than real estate (Organic Law of Entrepreneurship and Innovation, 2020, Art. 13). The 'necessity-driven business' mention by GEM (2019) in the Ecuadorian profile will still lack of better options if they do not join together and if they do not participate in decision-making processes. The application bylaw publication of the Organic Law of Entrepreneurship is pending which is expected to allow us a better understanding of the public and private decision-making procedures.

5.4. Financial mechanisms to support entrepreneurship and innovation

From the original considerations of the Organic Entrepreneurship Law, access to credit is considered as a mechanism to strengthen the entrepreneurial ecosystem. Among the attributions of CONEIN, in addition to formulating binding policies and guidelines for credit access (Organic Law of Entrepreneurship and Innovation, 2020, Art. 9. b) in Chapter V of the Law, it is established that all enterprises registered in the National Registry of Enterprises (Organic Law of Entrepreneurship and Innovation, 2020, Art. 12) must have immediate access to financial services (Organic Law of Entrepreneurship and Innovation, 2020, Art. 24), such as: seed capital (Organic Law of Entrepreneurship and Innovation, 2020, Art. 25), venture capital (Organic Law of Entrepreneurship

and Innovation, 2020, Art. 26), angel investment (Organic Law of Entrepreneurship and Innovation, 2020, Art. 27) and public credit programs (Organic Law of Entrepreneurship and Innovation, 2020, Art. 29). This access represents a great advance in the consolidation of innovation processes that require high technological investment, but if the Government do not promote deep legal reforms and other instruments for data release, taxability, bureaucracy and labor, private investment will still be scarce causing a huge negative impact for the innovation funding. Entrepreneurship training programs are necessary in order to promote financial education.

5.5. Education to carry out partnerships

One of the most important advances in entrepreneurship law is the understanding of a culture and education that requires strengthening the ecosystem to enable better conditions. Entrepreneurial culture is understood as a set of qualities, knowledge and necessary skills that an entrepreneur possesses (Organic Law of Entrepreneurship and Innovation, 2020, Art. 3. Literal 5). Aspects and values such as self-esteem, autonomy, sense of belonging to the community, teamwork, solidarity, associativity, encouragement of research and lifelong learning are part of an integral entrepreneurship formation (Organic Law of Entrepreneurship and Innovation, 2020, Art. 4. Literal 5). Hence, Chapter IV proposes the promotion of entrepreneurial culture and education which ratifies the law objective of "improving capacities, abilities and skills that allow successful entrepreneurship" (Organic Law of Entrepreneurship and Innovation, 2020, Art. 18), among others. Soft skill training for the development of entrepreneurial and innovative spirit is highlighted at all education levels, including a clear content and criteria for its evaluation (Organic Law of Entrepreneurship and Innovation, 2020, Art. 19). The coordination of strategies is delegated to the Ministry of Education for the basic and

intermediate education levels, as well as to the SENESCYT for higher education.

A deepening of education is necessary to promote entrepreneurship. The Global Entrepreneurship Monitor (2019) recognizes great advances in higher education in Ecuador, which qualifies at 5.39 / 10 points. Not so, basic level education that has an evaluation of 3.49 / 10.

CONCLUSIONS

Considering the bibliography reviewed as well as the Ecuadorian entrepreneurship profile, the majority of new firms establish in Ecuador are 'necessity-driven businesses' started because of the lack of better options. Likewise, because of the lack of tangible and intangible resources, an individual entrepreneurship intervention and the liability of their smallness and newness, the innovation process is difficult to emerge resulting on low-impact startups from the consumer services sector maneuvering in a highly competitive market lack of revenues.

Higher import tariffs -compared to neighboring countries-, non-technology driven process and few training programs derivate in higher production costs and limit the competitiveness of Ecuadorian products in the international market. Low direct investment also reduces the financial opportunities for new firms and startups internationalization. Accordingly, just few startups in Ecuador achieve sustainability and high economic impact.

From the dynamic of a network point of view, understand that the structure of a network affects new firms' innovativeness and startups change the structure of their networks when entering the market is key to promote new

firm's centrality. Thus, to promote new firm's resources access, innovation and technology-based transferring is only possible if key actors of the Ecuadorian ecosystem like incubators, higher education institutions, acceleration companies, venture capital firms, large corporations, financial institutions and the Government of Ecuador strengthen their relations, articulate actions, release information, open networking spaces and are able to embrace open innovation.

The analysis of the law shows a great advance regarding aspects such as the strengthen of the governance and rule of law for the entrepreneurship ecosystem. Also, articulates efforts between the institutions for entrepreneurship education and financial access as a started point for public policy. Still necessary to build mechanisms to support innovation process in their different phases. The design of adequate articulated programs for R&D transfer, R&D funding, networking and human capital strengthen could favor open innovation. Nevertheless, deep legal reforms and other instruments are necessary in terms of data release, taxability, bureaucracy, labor and direct investment that allows open innovation to appear. The role of the Government is key to ensure governance, rule of law, accountability as well as to coordinate efforts between the public and private sectors to guarantee stability and economic prosperity.

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Received: 01/10/2020

Approved: 15/04/2021

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*Research project 036-UIO-2021 Analysis of the startup network as an instrument of open innovation during uncertainty - FSPI Program.

