



Article

Entrepreneurship Ecosystem of Cooperatives in Mexico City

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Abstract: This study enhances our understanding of entrepreneurial ecosystems in Mexico City, emphasizing their crucial roles in fostering cooperative activity within specific contexts. It delves into the intricate interplay of ecosystem elements and their interconnectedness, shedding light on how it shapes entrepreneurial ventures in the region. We used a qualitative methodological approach and conducted semi-structured interviews defined from theoretical analysis and snowball sampling to identify key local actors, how they interact, and what obstacles they face. Our data show that the ecosystem comprises many actors, such as social economy organizations, civil society, beneficiaries, and alternative markets, as well as such diverse elements as the regulatory framework, public policies, and financing programs. The actors who have the most impact and work most consistently with cooperatives are the academy, cooperative unions, and government entities. All of them actively interact with each other, but we underscore the need for greater dynamism to enhance entrepreneurial activity.

Keywords: entrepreneurship ecosystem; cooperatives; social economy

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1. Introduction

Entrepreneurship is considered an essential element in economic and social development (Rideout and Gray 2013; Kantis et al. 2015; Shane and Venkataraman 2000; Acs et al. 2014). Companies do not emerge, expand, and flourish in isolation; rather, they evolve via interactions with various actors. Entrepreneurship can thus be viewed as a dynamic process that fosters synergies between these actors and other essential elements (Audretsch et al. 2021). In other words, entrepreneurship requires a favorable environment that encourages the creation of new companies, the strengthening of existing ones, and the improvement of the economic and social conditions in the regions.

The number of cooperatives in Mexico City (CDMX, for its Spanish acronym) increased in 2006 due to the establishment of various public policies to bolster their activities. The rise has been particularly pronounced since 2015, amplifying the significance and influence of cooperatives within this city.

It is important to understand the entrepreneurial environment of these companies given their capacity to generate social and economic benefits; however, there is little research that studies the entrepreneurship ecosystem and social companies such as cooperatives. Likewise, even though these types of studies are still rare, researchers need to consider contextual elements, their networks of interactions, and how they improve entrepreneurial activity (Audretsch et al. 2021; Mack and Meyer 2016; Motoyama and Knowlton 2017; Alvedalen and Boschma 2017; Stam and Spigel 2016).

The objective of this work is to delineate the ecosystem of cooperative entrepreneurship in Mexico City, elucidate the actors and components constituting it, and examine their interactions in facilitating and fortifying the establishment of cooperative companies. To achieve this, a qualitative investigation was carried out through semi-structured interviews determined by theoretical research and snowball sampling. The

results obtained allow us to identify how the ecosystem of cooperative entrepreneurship is formed, how it works, and how it contributes to the solution of social problems faced by local communities.

This study lays the groundwork for future research on cooperative entrepreneurship and entrepreneurial ecosystems. It also informs the development of government policies and programs designed to promote and fortify cooperatives, addressing economic and social problems. Firstly, we conduct a theoretical review of cooperative entrepreneurship and entrepreneurial ecosystems. Subsequently, we delve into the contextual background of the research, outlining the methods and techniques employed. Following this, we analyze the findings gleaned from both the fieldwork and theoretical study. Finally, we draw conclusions and identify potential fields for future research.

2. Theoretical Review of the Entrepreneurship Ecosystem

The study of ecosystems began to gain relevance in academic research in the early 1990s to explain how cultural, environmental, and political aspects favor or hinder entrepreneurial regional activity (Drakopoulou-Dodd and Anderson 2007). International organizations such as the World Economic Forum and the Organization for Economic Cooperation and Development (OECD) have used this approach in their development and innovation proposals, seeking to create high-performance ventures (Acs et al. 2014; Audretsch and Belitski 2017; Autio et al. 2014; Spigel and Harrison 2018; Stam and Bosma 2015; Stam and Spigel 2016).

In the realm of the social sphere, an entrepreneurship ecosystem can be defined as a connection that exists between social organizations and their context (I Domènech and Colomer 2011). It is a set of public and private entities with tangible and intangible resources, including elements such as capital, infrastructure, and networks; it promotes the development of ventures through an exchange of information, resources, and economic, social, and cultural knowledge between entities and people (Arcos and Morandeira 2020).

The social entrepreneurship ecosystem has been studied in various contexts. For example, Morocco Kabbaj et al. (2016) found that the pivotal elements comprising the ecosystem include financing, human capital, educational institutions, the market, culture, policies, and a national strategy fostering entrepreneurial endeavors. Yet, it is equally crucial to emphasize the imperative of constructing and integrating an ecosystem that nurtures the development of social enterprises, ensuring that each component is interlinked with specialized knowledge and skills.

In the United Kingdom, Roy et al. (2015) studied how the government, using the political framework, provides context-specific support for social entrepreneurs, fostering institutionalization and strong attachment of the ventures to the legal and political framework.

In Peru, studies demonstrated that the actors of the social entrepreneurial ecosystem are entrepreneurs, third-sector organizations, and academics, who promote, develop, research, and educate about the phenomenon of social entrepreneurship using innovative, inclusive, and self-sustainable ways to generate value and strengthen the society's fabric (Ruiz et al. 2016).

The actors and elements identified across various contexts as crucial components in shaping models that facilitate entrepreneurial activity are described in Table 1.

Table 1. Actors and elements that make up the entrepreneurship ecosystems.

Actor/Element	Definition
Financial support	Access to public or private financial resources.
Public politics	Public policies, regulations, and social programs designed to support entrepreneurial activity, as well as the fiscal framework that encourages this activity.
Entrepreneurship education	Incorporation of entrepreneurship as an educational subject in basic and higher education centers.
Transfer of R&D	Research and development focused on solving problems faced by smaller companies.
Commercial and legal infrastructure	Accessibility of intellectual protection for innovations developed by smaller organizations.
Opening of the internal market	Ease of entry into local and national markets for new entrepreneurs.
Access to physical infrastructure	Access to communication technologies and communication routes for the transportation and logistics of products at a fair price.
Social and cultural norms	Rules that promote the creation of new companies and generate a good reputation for entrepreneurs in society.
Financial support	Access to public or private financial resources.

Source: Own elaboration based on various authors (Audretsch and Belitski 2017; Maroufkhani et al. 2018; Neumeyer and Santos 2018; Roundy et al. 2018; Scaringella and Radziwon 2017; Spigel and Harrison 2018).

The elements outlined in the table are deemed essential for entrepreneurs to translate a business idea into a sustainable, long-term project. It is important to note that the actors and elements described cannot function in isolation; collaborative efforts are indispensable to cultivate entrepreneurial ecosystems.

These studies depict an ecosystem as a framework wherein actors and elements such as government, academia, the market, legal framework, and civil society collaborate to foster entrepreneurship for the benefit of society. This collaborative endeavor is framed within the political, cultural, and environmental context of a specific locale.

3. Cooperative Entrepreneurship in Mexico City

The Alianza Cooperativa Internacional (2018) defines a cooperative as an autonomous and voluntary association composed of people who have common economic, social, and/or cultural needs and aspirations that are satisfied by establishing a democratic company.

In Mexico, according to the Ley General de Sociedades Cooperativas (1994), cooperatives are organizations with economic and social purposes composed of at least five partners (people), whose objective is the democratic administration of the economic and social activities of the company. They must comply with the principles and values of freedom of association and voluntary withdrawal of partners, democratic administration, limitation of interests to some contributions of partners, distribution of income in proportion to the participation of partners, promotion of the education of solidarity economy and ecological culture, participation in cooperative integration, and respect for the individual right of members to belong to any political party or religious association.

The development of cooperative companies is not a simple task since interested entrepreneurs must face challenges related to how this particular type of organizations should be constituted, organized, and operated, in addition to dealing with the constraints of their economic, social, and political environment (Sala-Ríos et al. 2018). In Mexico, there are few public records and statistics on these companies; the supply of financing, education, and training is limited; cooperative culture is not encouraged enough; cooperatives do not have enough representation; their collaboration networks and strategic alliances are scarce; they do not have the capacity to acquire technology and infrastructure; they suffer from organizational problems; their members do not have professional training; their economic

compensation is low; and they are reluctant to change (Izquierdo 2009, 2012; Rojas and Cañedo 2020; Sosa et al. 2019; Medina and Flores 2015; Cabrera 2015).

The principle of participation in cooperative integration is what makes these organizations form second-level (unions and federations) and third-level (confederations) cooperatives. These then act as interlocutors with the government to demand an appropriate legal framework. Likewise, the educational principle forces cooperatives to look for allies in the academy. Cooperatives also seek benefits for their local communities; therefore, studying entrepreneurship of this type requires a holistic analysis to identify the actors and elements that influence its constitution and sustainability.

Between 2015 and 2018, the government, in conjunction with the National Polytechnic Institute (IPN, for its Spanish acronym), implemented a joint program to support the development of cooperative societies. This led to the emergence of approximately 470 cooperative ventures, as mentioned by the technical coordinator of the Cooperativas CDMX program in 2018 (Álvarez 2019).

The ventures established in this period are primarily located in the municipalities of Xochimilco, Tlalpan and Iztapalapa. The majority are made up of women, single mothers, heads of families, young people without access to education or decent jobs, and older adults. They enter cooperative entrepreneurship prompted by the absence of employment options, inequality, and exclusion, as well as more positive motivations such as the entrepreneurs' affinity with the cooperative philosophy and the search for solutions to local problems.

The economic activities carried out by these enterprises are mainly agroecology, food preparation, and provision of education and care services. The difficulties they face are associated with a lack of financing, limited access to new technologies, underdeveloped market strategies, and a perceived lack of business skills.

The initial aim of the program was generating jobs for people in vulnerable situations; therefore, priority was given to groups such as people with disabilities. As a consequence of this, these ventures face operational and permanence problems once the support programs end, since, despite receiving training and financial support, the vast majority of their members do not have experience in establishing socioeconomic organizations. Nevertheless, some cooperatives have managed to survive by strengthening their productive and commercial processes thanks to collaborative networks between social economy actors, cooperatives, academics, and government bodies.

Since 2015, the government has contributed significantly to promoting the creation and strengthening of cooperatives through programs like Promotion, Constitution and Strengthening of Social and Solidarity Enterprises in Mexico City in 2019, 2020, and 2021, and Social Economy of Mexico City in 2022 and 2023.

4. Materials and Methods

The presented research adopts a qualitative approach grounded in a comprehensive analysis of the literature pertaining to entrepreneurial ecosystems. It specifically examines the interplay between the principles and values of cooperatives and the involved actors. Additionally, the study scrutinizes the legal framework governing these associations, identifying the institutional actors and elements that facilitate the entrepreneurship of such organizations.

The authors of this research participated in the process of formation and professionalization of approximately 800 cooperatives between 2015 and 2018 as part of a program called "Support for the Development of Cooperative Societies of Mexico City". This experience allowed us to identify the primary actors that make up the ecosystem and consider them in the first round of interviews.

This approach facilitated the identification of additional elements and actors not initially considered during the preliminary analysis, such as self-directed groups formed conjunctively by academia, government, and the social sector called Nodes to Promote the Social and Solidarity Economy (NODESS, for its Spanish acronym). As a result, further interviews were conducted using a snowball sampling technique until information

saturation was reached (Alloatti 2014; Blanco and Castro 2007; Miele Barrera et al. 2012). Table 2 shows the actors interviewed to determine the Cooperative Entrepreneurship Ecosystem of Mexico City, as well as its network of collaborations.

Table 2. Actors interviewed

Agency/Organization Interviewed	Actor or Element Identified in the Ecosystem	Identification of Other Agencies/Organizations to Interview
Ministry of Labor and Employment Promotion	Government	Tlalpan district
Culture Secretariat of Mexico City	Government	None
UPIICSA-IPN	Academia	Collaboration networks
MAAK Network	Collaboration networks	Local markets and consumer cooperatives
Union of Cooperatives of Mexico City	Union of cooperatives	NODESS
Union of Cooperatives of the ESS		
NODESS Vida y Saberes (UPIICSA-IPN)	NODESS	None
Social Consulting Cooperative	Legal framework	Federations and confederations
Huélxolotl Down	Cooperatives	Local markets
Semilla Buena		Consumer cooperatives
The Chicuarota		NODESS
Consumer Cooperative	Consumer cooperatives	None

Source: Own elaboration.

The eleven interviews conducted with actors addressed pre-established topics, including their involvement in entrepreneurship and the reinforcement of cooperatives, their vision and professional experiences, and the results achieved by their ventures. Additionally, discussions encompassed their understanding of other actors and elements influencing the formation of these organizations.

The qualitative analysis of the interviews involved a meticulous and comprehensive examination of their detailed transcriptions. Data analysis followed two main steps: a) familiarization with the data and b) coding of the testimonies. This approach facilitated a thematic analysis to identify, organize, and analyze various themes and categories (Braun and Clarke 2006; Miele Barrera et al. 2012) in order to explain how the interactions between the actors lead to solve problems present in vulnerable communities in Mexico City. The categories established in the analysis are as follows:

- Contributions of actors to cooperative entrepreneurship;
- Areas of opportunity for actors;
- Relationships with other actors;
- Role of the actors.

The thematic analytical framework was created with the help of the qualitative data analysis software Atlas.Ti, and the established categories were used to interpret the data and present the results. Finally, we used the onodo.org platform to analyze the collaboration networks between the actors and to outline the dynamics and relationships found in the Cooperative Entrepreneurship Ecosystem of Mexico City (EEC-CDMX for its Spanish acronym Spanish), as well as to identify the strongest and weakest actors.

5. Results

5.1. Cooperative Ecosystem of Mexico City

The origin of the Cooperative Entrepreneurship Ecosystem of Mexico City (EEC-CDMX) dates back to the first social organizations in Mexico City; however, it experienced an important rebound when the Cooperative Promotion Law of the Federal District was enacted in 2006. It decreed that cooperatives must be fostered by actors within the cooperative system (such as their unions, federations, and confederations), as well as government and academic bodies. Figure 1 presents the EEC-CDMX and the actors that participate in it, and their roles, functions, and contributions to the strengthening of cooperative ventures.

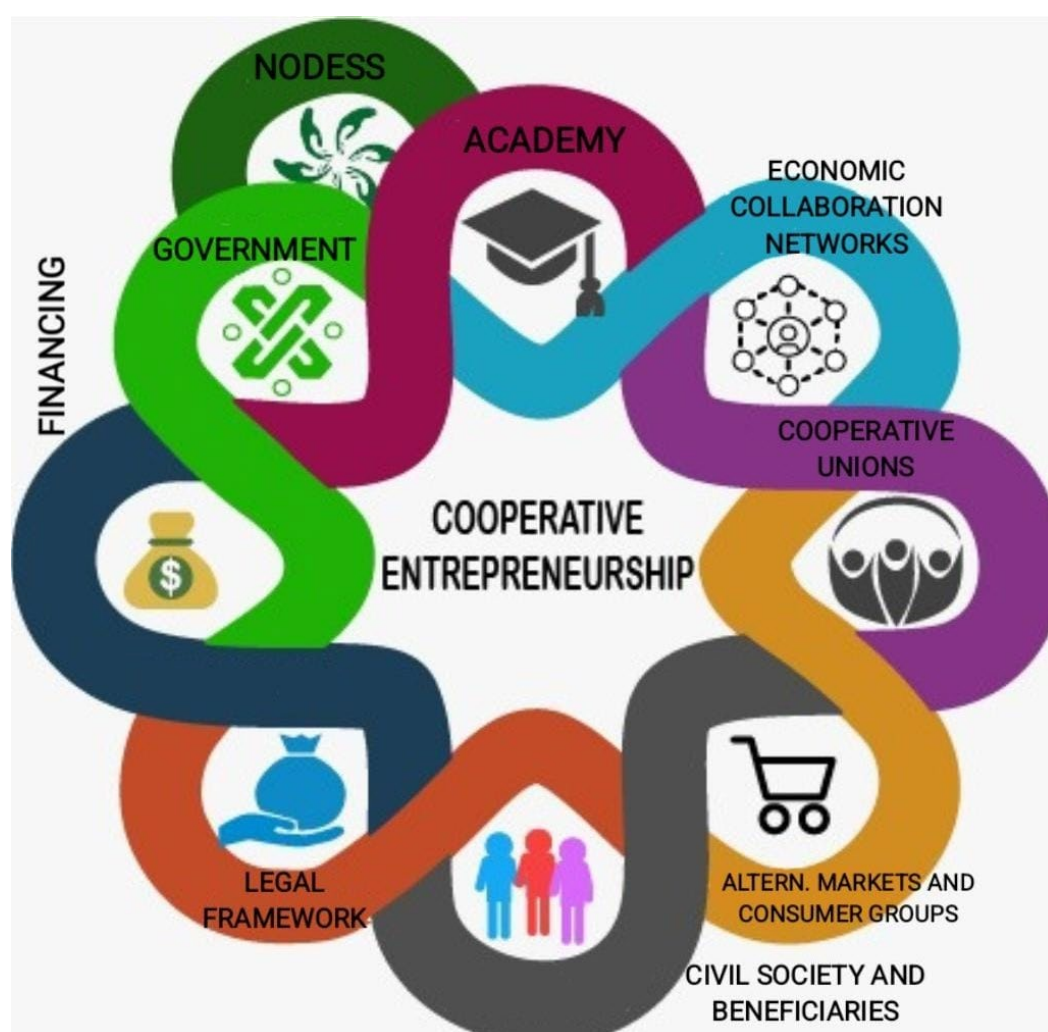


Figure 1. Cooperative entrepreneurship ecosystem of Mexico City. Source: Own elaboration based on Díaz de León (2020).

5.1.1. Legal Framework

The legal framework that shapes the formation and development of cooperatives stems from the Political Constitution of the United Mexican States, which, in Article 25, indicates that public, social, and private sectors must undergo economic development. It recognizes the importance of the social economy in the country, stating in the eighth paragraph of this same article that the necessary mechanisms must be established for the organization and expansion of the economic social sector, which includes cooperatives.

The Social Economy Law, issued on 23 May 2012, is derived from the aforementioned article and not only aims to organize and bolster the social sector of the economy to generate economic benefits but also to attain opportunities for decent employment and equitable distribution of income. In Article four, this law recognizes cooperatives as organizations that belong to this sector.

The law decreed the creation of the National Institute of Social Economy (INAES, for its Spanish acronym), which promotes training, research, and support programs to strengthen this sector and its public policies. Likewise, the law stipulated the creation of the National Congress of Organizations of the Social Sector of the Economy to disseminate cooperative financing and its philosophy.

Moreover, on 3 August 1994, the General Law of Cooperative Societies was enacted, aiming to define the principles guiding their formation and functioning. Cooperatives are required to adhere to this law, as it delineates their philosophical underpinnings, establishment procedures, permissible types (such as savings and loans, production of goods and services, or consumption), operational functions, administrative protocols, economic frameworks, as well as the rights and responsibilities of members. It also outlines the formation of the cooperative system and dissolution processes for its organizations.

In Mexico City (previously officially called Federal District), the promotion of cooperative entrepreneurship within the legal system started in 2006 when the Law of Promotion of Cooperatives of the Federal District was created and promulgated. The law was issued to allow budget allocation to strengthen cooperatives in the city. It mandated that the Ministry of Labor and Employment Promotion (STyFE, for its Spanish acronym) of Mexico City actively promote cooperative activities through its policies and programs, and designated the Secretariat of Economic Development and Finance as an actor in the cooperative drive. It also mentions that the delegations (now districts) must participate by allocating finance and designing joint academic or technical training programs.

5.1.2. Government

At the national level, the cooperatives in Mexico City have the support of the INAES. Since 2019, it has designed policies that allow the linking of cooperatives with universities and the government.

Since 2008, the STyFE has set up programs to promote cooperatives in Mexico City, one of the most representative being the Program to Support the Development of Cooperative Societies of the Mexico City, which boosted entrepreneurship and professionalization of approximately 800 cooperative societies between 2015 and 2018. The STyFE's Program of Promotion, Constitution, and Strengthening of Social and Solidarity Enterprises in Mexico City benefited 2,200 social and solidarity enterprises in 2019, 689 in 2020, and 781 in 2021. In addition, STyFE's program of Social Economy of Mexico City will benefit 1442 such enterprises in 2022 and 980 in 2023, as shown in Figure 2.

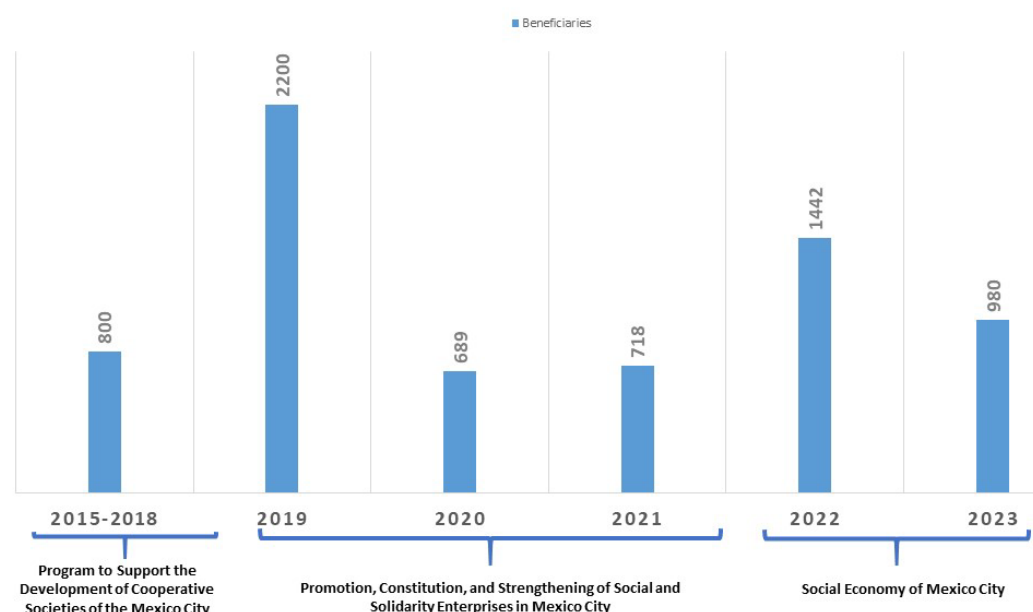


Figure 2. Social and solidarity enterprise beneficiaries of programs from STyFE between 2015 and 2023. Source: Own elaboration based on STyFE data.

The city also implemented local initiatives, with one notable program spearheaded by the district of Tlalpan. This district has an Open School of Social Economy and provides consistent economic support to its cooperatives.

5.1.3. Academia

Academia has emerged as a critical ally for cooperatives in Mexico City. An example of this is the IPN, which took part in the Cooperativas CDMX program by designing entrepreneurship models based on the needs, principles, and values of these organizations and carrying out training.

Once the IPN concluded its participation in the Cooperativas CDMX program, it continued accompanying the city's cooperatives. This led to the creation of the Research Group on Cooperatives and Organizations of the Social and Solidarity Economy (GICoops. for its Spanish acronym), the Economics and Social Innovation Seminar, NODESS Vida y Saberes, as well as postgraduate theses and research projects registered with the Research and Postgraduate Secretariat of the IPN and the National Council of Humanities Science and Technology (CONAHCYT, previously officially called CONACYT).

The academic work focused on researching and documenting the challenges encountered by the cooperative movement in Mexico City. These were explored in postgraduate theses and research projects, alongside efforts to disseminate and advocate for the social and solidarity economy among undergraduate students.

The cooperatives also seek assistance from the National Autonomous University of Mexico (UNAM), where they receive support by engaging social service students. They also benefit from support and guidance from the Metropolitan Autonomous University (UAM) through forums and seminars. Additionally, they have access to training and advice from the University of Chapingo.

5.1.4. Cooperative Unions and Government

Cooperative unions are second-level organizations that seek to be interlocutors between cooperatives and governments. In Mexico City, we identified at least two of them: The Union of Cooperatives of Mexico City, which has more than 150 members, and the Union of Social and Solidarity Economy Cooperatives, with approximately 60 members.

The latter managed to win a tender in May 2020 to supply face masks in the Iztapalapa district, benefiting more than 30 of its members.

These unions also seek to design public policies and connect cooperatives and academia. They defend the rights of cooperatives and train them to improve their production and commercial processes. However, they are not well regarded by the more traditional cooperative sector since they are often related to political actors.

5.1.5. Social Economy Collaboration Networks

These networks are informal organizations that bring together cooperatives, normally in the same field, to link them with local markets for the fair distribution of their products. They also work with academic actors to request training when they detect a problem within organizations or with government actors to demand better support programs.

5.1.6. Beneficiaries

Civil society and beneficiaries are actors that become important in cooperativism due to the philosophy of this social movement. The principles and values of cooperatives encourage their members to be promoters of change in their communities. They seek to offer benefits to the residents of their municipalities, for example, by educating young people in environmental and conservation issues.

In addition, they seek to promote cooperativism as a form of organization that generates decent and inclusive employment. As mentioned before, in Mexico City, a high percentage of cooperatives is made up of people in precarious situations who find a means of earning income and achieving decent livelihoods through cooperative participation.

Thus, cooperatives are concerned with solving health, education, and environmental problems and tackling these in their communities with the help of their business ventures.

5.1.7. Financing

Accessing finance is perceived as the most formidable challenge for cooperatives in Mexico City. These organizations can obtain funds via government programs, such as the Support Program for Cooperative Societies of Mexico City promoted by the STyFE from 2015 to 2018. In 2019, it evolved into the Program of Promotion, Constitution, and Strengthening of Social and Solidarity Enterprises in Mexico City (FOCOFESS), which continued during 2020 and 2021 and evolved again into the Social Economy of Mexico City in 2022 and 2023.

These programs are designed to enhance cooperative entrepreneurship from the inception and establishment phase, providing support during their formation and throughout their initial year of operation. However, as cooperatives expand and require financing for innovation processes within their organizations, they often encounter challenges in securing private funding. Their relatively small scale and, according to reports from cooperative members, discrimination by private banking institutions, hinder their access to such financing.

Savings and loan cooperatives also constitute the sector. However, these cooperatives (a) are very rare in Mexico City and (b) do not have the capacity to make loans to other cooperatives, since they are only authorized to make transactions between natural persons. Therefore, they cannot be an ally for production cooperatives.

5.1.8. Nodes to Promote the Social and Solidarity Economy

The Nodes to Promote the Social and Solidarity Economy (NODESS, for its Spanish acronym) is an initiative of the National Institute of Social and Solidarity Economy (INAES) to form self-managed groups made up of at least one government actor, one academic, and a Social Sector Organization of the Economy (OSSE, for its Spanish acronym) to promote social economy organizations and cooperatives. In Mexico, 14

NODESS have been formed within the initial period of the program (2019–2020). Two of them were created in Mexico City, namely, NODESS *Cultura de la Ciudad de México* and NODESS *Vida y Saberes*.

The purpose of the NODESS *Cultura de la Ciudad de México* is to support social organizations and cooperatives whose main objective is the promotion of cultural activities. To this end, this NODESS has carried out training and generated research such as a description of cultural cooperatives, a census, and other reports that help understand this sector of cooperativism.

The NODESS *Vida y Saberes*, based in the Interdisciplinary Professional Unit of Engineering and Social and Administrative Sciences (UPIICSA, for its Spanish acronym) of the National Polytechnic Institute (IPN), is one of the most complex NODESSs in the country. It has achieved the integration of four cooperatives, two unions of cooperatives, seven academic actors, and three local government actors in Mexico City, such as the Secretariat of Economic Development (SEDECO, for its Spanish acronym); the Secretariat of Education, Science, Technology, and Innovation (SECTEI, for its Spanish acronym); and the Secretariat of Inclusion and Social Welfare (SIBISO, for its Spanish acronym).

The NODESS *Vida y Saberes* actors have jointly developed training and advisory programs for more than 125 social organizations and cooperatives. These include public policy proposals on issues of the care economy and social economy, an observatory of social economy and cooperativism in Mexico City, and the dissemination of materials. Additionally, the NODESS actors have participated in research projects of the IPN and CONAHCYT, strengthening the productive and commercial processes of the cooperatives in Mexico City and documenting and making visible the contributions of this economic sector to the society.

5.1.9. Alternative Markets, Collectives, and Consumer Cooperatives

One of the main problems faced by entrepreneurs is inclusion in markets. In this sense, cooperative ventures in Mexico City have benefited from alternative or local markets. These producer-to-consumer points of sale are spaces that the cooperative movement has successfully won by itself. Some of these spaces are in the Xochimilco district where El Mercado de las Cosas Verdes is located, or in the Coyoacán district where the Ruta Orgánica collective organized its market. Tlalpan district holds a well-established market called El Mercado Alternativo de Tlalpan.

Other actors that support cooperative commerce are consumer groups who raise society's awareness of responsible, ethical, and local consumption. The groups with the greatest presence in Mexico City are La Imposible consumer cooperative; Multitruque Mixihuca community; Te Quiero Saludable, Despensa Solidaria and Chapata Vive cooperatives; and Amasijo Narvarte collective.

These spaces seek to be a fair distribution option for producers and cooperatives in Mexico City that do not have enough space and marketing networks to perform it on their own. It is a growing actor within the ecosystem, and, although the number of these markets, cooperatives, and collectives is minimal, they have become a viable fair and ethical option for producer cooperatives.

5.2. Collaboration Networks between EEC-CDMX Actors

The Entrepreneurship Ecosystem of Cooperatives of Mexico City (EEC-CDMX) comprises actors and elements that work jointly to strengthen cooperative ventures. Figure 3 schematizes the collaboration networks that exist between them.

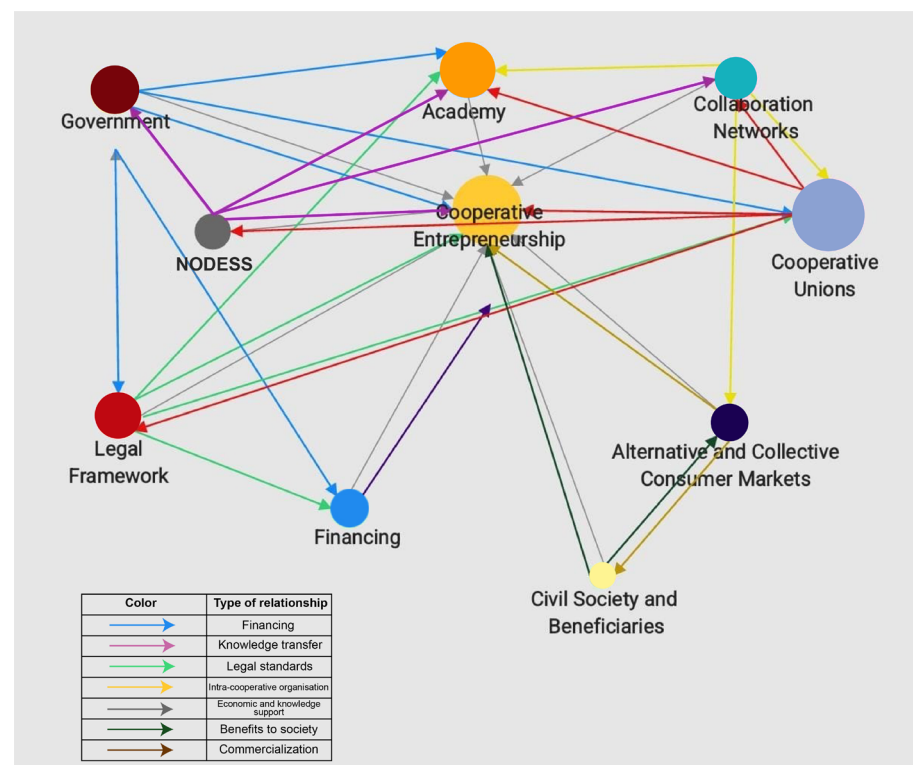


Figure 3. Collaboration networks in the Entrepreneurship Ecosystem of Cooperatives of Mexico City (EEC-CDMX). Source: Own elaboration. Source: Own elaboration based on Díaz de León (2020).

The scheme demonstrates how the legal framework and government funds bolster cooperative organizations. On the one hand, the government generates programs that provide sources of financing for these ventures, and, on the other hand, it promotes technical and organizational training through links with academia. The government also interacts with the cooperative unions to know the context of these organizations, often with the help of the NODESS, which acts as an intermediary between the cooperative sector and the government.

As mentioned above, academic bodies and the government participate in programs to support cooperative entrepreneurship. They also maintain networks with the NODESS, connecting in this way to the cooperative unions and generating specific training programs following the needs of the cooperatives that belong to them. In addition to this, the academy carries out research projects and proposals for CONAHCYT to research and support such organizations.

The actors establish networks to cultivate environments conducive to fair commerce. To do so, they foster ongoing collaborations within cooperative unions, NODESS, and academia. As a result of this work, alternative markets, collectives, and consumer cooperatives have become one of the main alternatives to traditional trade. During the contingency period in COVID-19 pandemic, these markets managed to survive and support the families that depend on these cooperatives, adapting and evolving to home sales.

Although collaborative networks do not have a legal constitution, they are important because they generate marketing alliances, such as relationships with alternative markets, fairs, and consumer groups; provide help to market alliances, such as relationships with alternative markets, fairs, and consumer groups; and help raise awareness in society about the importance of fair and responsible solidarity consumption.

NODESS seeks to link the social, governmental, and academic sectors to strengthen the enterprises of cooperatives and organizations in the social sector. To better understand

the cooperative context, NODESS maintains links with cooperative unions and collaboration networks. Access to finance for cooperatives is predominantly limited to government programs established within the legal framework, posing a significant challenge for these entities.

The civil society and beneficiaries comprise individuals who reap the benefits of cooperatives, whether by participating in their programs and accessing products marketed at fair prices, or experiencing the enhancements made to local community livelihoods. However, civil society's relationship with cooperatives is unidirectional; it is only through markets and consumer groups that it is directed towards cooperatives. The same is true for beneficiaries, whose relationship with cooperatives is based solely on the benefits they receive from the activities these organizations carry out in the community, such as discounts, promotions, reforestation programs, or community care.

Financing is another important factor because it allows the creation and strengthening of cooperatives. However, their relations are weak because they are only present through government programs that stem from the legal framework of cooperatives.

The presented scheme shows that the strongest actors in the EEC-CDMX network are the academy, the cooperative unions, and the government. These actors seek to professionalize their commercial and productive processes and provide financing for entrepreneurship. The weakest actor within the ecosystem is financing, and this is related to the size of these organizations, which are mostly made up of five partners and are considered microenterprises.

5.3. Problem Solving within the EEC-CDMX

The collaboration networks between the actors within EEC-CDMX have allowed these ventures to achieve greater survival than traditional ones. Approximately 50% of the cooperatives that were established between 2015 and 2018 managed to survive after the first three years of autonomy (Rivera 2019). They benefited from the initial intervention of the government and academia and subsequently began to interrelate with local markets, cooperative networks, NODESSs, and others.

These organizations play a significant role in addressing challenges such as the scarcity of decent employment opportunities for individuals in vulnerable circumstances. As mentioned above, these include young people lacking formal education and job prospects, elderly individuals, single mothers, as well as people with disabilities and migrants. The research shows that cooperative associations serve as pivotal platforms for facilitating labor integration, thereby enabling individuals to enhance their livelihoods and quality of life.

As shown in previous analyses (Díaz de León et al. 2021), the interconnections within the ecosystem enable cooperatives to contribute to environmental protection and uphold the preservation of local traditions and culture within their communities. They also foster the advancement of the social economy and cooperative principles while providing support for entrepreneurial ventures and enhancing the skills and professionalism of their members.

Given the above, it becomes evident that this ecosystem's various actors collaborate to promote and advocate for cooperativism in Mexico City. However, certain actors, such as financing initiatives, exhibit relative weakness. Even so, we can begin to envision actions to bolster these organizations and benefit the communities in which they operate.

6. Discussion

We analyzed the entrepreneurship ecosystem as a model in which actors such as government, academia, markets, legal frameworks, and civil society interact to boost entrepreneurship for the benefit of larger society framed by the political, cultural, and environmental local context of an organization (Audretsch and Belitski 2017; Maroufkhani et al. 2018; Neumeyer and Santos 2018; Roundy et al. 2018; Spigel and Harrison 2018). In

Mexico City, the dominant actors within the ecosystem are the government and academia, with the former primarily supporting financing initiatives and the latter focusing on education. The findings of this research allow us to identify the NODESS and the collaboration networks of the social economy as new actors that are not mentioned in the theory. Regarding the access to markets, the city's cooperatives have proactively established their own spaces where fair commerce is practiced.

The relationships between the academy and the cooperatives within the ecosystem have allowed the generation of new knowledge and skills and the creation of a learning space for various actors (Aguilera and Reye 2016; Camargo et al. 2017; Paz and Lebrero 2016; Phillips et al. 2015). These relationships have empowered the production sector significantly.

7. Conclusions

This article allows us to determine the actors and elements that make up the entrepreneurship ecosystem, shedding light on their intricate relationships and collaborative networks. Notably, it distinguishes itself from the existing literature on entrepreneurship ecosystems due to the unique nature of cooperative ventures and their underlying philosophy. This distinctiveness is evidenced by the presence of actors such as NODESS, alternative markets, unions, and confederations of cooperatives, all of which actively foster the establishment of new cooperatives while simultaneously promoting their professionalization.

The elements and actors in the ECC-CDMX, with the exception of financial institutions, contribute invaluable knowledge and expertise, along with best practices in production and commerce. These contributions have been instrumental in the survival of ventures and have simultaneously addressed issues of unemployment among most marginalized groups.

Despite the vulnerabilities faced by entrepreneurs, this is a resilient entrepreneurial ecosystem that supports the inception and growth of ventures. This is evidenced by the substantial increase in cooperative formations since 2015.

The fact that several actors and elements strengthen the EEC-CDMX gives it greater relevance. Actors from both the government and academia have transformed the map of cooperatives in Mexico City, among which stand out academic institutions such as IPN, UNAM, UAM, and the University of Chapingo, and government bodies such as INAES, the STyFE, the Ministry of Culture, the mayor's office in the district of Tlalpan, the SEDECO, the SECTEI, and the SIBISO.

Although cooperative ventures have indeed made significant progress since their emergence, there are still areas of opportunity in Mexico City and nationwide. At the local level, the lack of alternative markets and electronic online sales tools, added to the population's lack of knowledge and disinterest in consuming agroecological, ethical, and local products, causes cooperative product commerce to advance slowly.

However, the challenge of insufficient financing persists in starting and growing cooperatives. We attribute this to the lack of legislation enabling savings and loan cooperatives to contribute to strengthening other cooperatives in Mexico City, coupled with limited support from governmental bodies and insufficient sector-specific knowledge, alongside the dearth of options from private banks. These factors collectively hinder the growth trajectory of cooperative organizations, causing it to proceed at a sluggish pace.

It is crucial to note the government's efforts to support cooperatives by facilitating training and establishing professional development initiatives. While some local branches extend financial aid, this often falls short in enhancing operational capabilities. Moreover, the reluctance of several districts to endorse the establishment of such organizations exacerbates the challenge.

These factors present opportunities for leveraging existing legislation to favor the social economy, as well as for orchestrating activities within municipal offices and

secretariats in Mexico City. Interventions aimed at training and professionalizing cooperatives could involve governmental entities, consulting cooperatives, and academic actors invested in social and cooperative enterprises. Furthermore, this scenario provides a platform for society to grasp the advantages of active engagement within the cooperative ecosystem.

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