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Startup initiatives in social service industries: cohousing and energy communities

社会创业公司(Startups)对于社会服务产业的倡议:合作型住宅和能源社区

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ABSTRACT

Innovative companies turn transformative ideas into products/services to generate a profit, while social startups aim to build a better world by providing social benefits. With a novel focus on Spain, this study examines the development of cohousing and energy communities and the barriers to their implementation. The aim is to clarify whether these communities should be governed under the same principles as social startups, with government support to encourage their growth. The data for the study were gathered from semi-structured interviews with promoters of these initiatives. The results highlight the features that they share with social startups, as well as the need for harmonised regulations to govern their implementation. The findings also underscore the importance of educating people about the need to bring about a social transformation, which will require widespread community acceptance. Decision-makers should encourage the development of social startups to ensure the transition to a sustainable economy.

创新公司将变革性的想法转化为产品或服务，以填补市场空白并创造利润。与之不同的是社会创业公司(startups)以社会效益为目标，旨在建立一个更好的世界。本研究探讨在西班牙这种新环境中发展合作型住宅和能源社区所存在的固有问题。研究目的旨在调查，在获得有利于其增长的政府援助的同时，是否应该应该根据社会创业公司(startups)的原则进行管理。该研究的数据是通过与西班牙多个省市的倡议者进行半结构式访谈而收集到的。研究结果显示了它们与社会创业公司(startups)的共同特性以及对于实施立法规范的需求。此外本文，还强调了全社区对教育普及的接受度和其实施的紧迫性在社会转型中起到的重要前提作用。作为确保向可持续经济转型的一种方式，决策者应该鼓励社会创业公司的发展。

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1. Introduction

Startups are small, emerging, innovation-based companies. Their potential for rapid growth and the relatively modest economic resources required in early-stage businesses are features that make startups attractive to potential investors (Christensen & Raynor, 2013; Torres &

Jasso, 2022). Distinct from other types of businesses in terms of their growth trajectory and development, startups implement scalable and replicable business models in highly uncertain environments (Blank, 2007). Successful startups require entrepreneurs who are capable of detecting market opportunities and rapidly gathering the resources needed to deliver an original product or service that adds value for customers (Ghezzi, 2019).

Social startups are for-profit businesses with a commitment to addressing social and environmental issues. This commercial ecosystem is in continuous growth and is highly attractive to potential investors (Pisoni & Onetti, 2018). The origin of social startups lies in the search for sustainable ideas to fill gaps in the market, unimpeded by geographical limitations on their growth.

This innovative environment has given rise to the concept of cohousing, which provides attractive housing solutions to individuals. It lets occupants live in a residential environment with shared services that allow them to go about their daily lives at below-market prices. In Spain, the growth in cohousing falls under the legislation that governs cooperatives, whose profitmaking activity translates into social benefits for members (Alguacil et al., 2021). Statutes are also required to regulate members' actions and ensure the smooth running of these projects (Arbell, 2022). Whereas in Nordic countries such as Denmark cohousing began to emerge in the 1960s, it is still in its early stages in Spain, and it faces the inherent problems associated with a novel activity that lacks specific regulation.

Energy communities, the other type of emergent innovative social business considered in this study, are aimed at fighting climate change by reducing carbon emissions from people's daily activities. The necessary transformation of all production and consumption processes calls for a unified effort by all nations (United Nations, 2015). The technological progress that has enabled our modern economy has unfortunately relied on fossil fuels, creating a climate disaster (Asselt, 2021). To address this issue, the energy transformation requires social change at all levels. Education and environmental research must adapt to promote collective action with multi-actor networks, placing value on socio-technological innovation (Jorgenson et al., 2019).

By combining energy communities and cohousing, proponents of collaborative housing offer sustainable solutions to reduce energy consumption and carbon emissions (Summeren et al., 2022). According to the EU renewable energy directive, cohousing is defined as self-organising groups of households formed around their use of energy. Thus, cohousing projects can be considered energy communities (Tummers, 2021).

The aim of this research is to examine whether cohousing and energy communities can be classified as social startups and highlight the problems faced by these forms of entrepreneurship, which seek to dismantle certain deep-rooted stereotypes in today's society. There is growing concern for sustainability, with cohousing and energy communities actively providing environmentally friendly solutions. This study seeks to put these projects into context and by so doing answer the following research questions:

Q1. Should cohousing and energy communities be classified as social startups?

Q2. What needs to be done to scale up the minority model of cohousing and energy communities? What are the main barriers to doing so?

The answers to both questions are found by applying the case method to two models of social startups currently expanding in many European countries. This approach is

complemented by semi-structured interviews with promoters of cohousing and energy communities in two Spanish regions. The paper details the stages of development of these projects, and also highlights the social and governance obstacles that are typically faced by emerging activities governed by general regulations. Cohousing has attracted the interest of the scientific community, with research focusing on countries where it has a long tradition, such as Denmark (Jakobsen & Larsen, 2019), the United States (Boyer & Leland, 2018), and Germany and Sweden (Scheller & Thörn, 2018). At the same time, the importance of the energy transformation has led to the development of a body of knowledge on the consequences of adopting the wrong approach. For instance, Carley and Konisky (2020) expressed concern about achieving a fair transition, where the burden of change is borne by all nations. According to Chien (2022), the major challenge facing the global society is the transformation of energy systems, where efficiency is central to achieving such goals. In response to this challenge, innovative companies are championing business models capable of accelerating the conversion process (Singh et al., 2021). However, the literature contains no studies of the classification of cohousing and energy communities as social startups and thus projects that are subject to the same regulations. In recent years, there has been an explosion of social startups and the business ecosystem is aligning with the sustainability advocated by the 2030 Agenda. In order to ensure their universal acceptance and increase uptake, there is a need for better public education on the benefits offered and harmonised legal regulations to support their growth.

The rest of the paper is structured as follows. Section 2 reviews the literature on social startups, cohousing and energy communities to identify potential synergies. Section 3 describes the method. Section 4 presents the cases, which are located in two Spanish regions: the Region of Valencia and the Basque Country. Based on these case studies, the two research questions raised earlier are answered in Section 5. Finally, the conclusions and contributions of the study are summarised in Section 6.

2. Literature review: social startups versus cohousing and energy communities

2.1. The social startup innovation ecosystem

The rapid growth of startups is mainly due to the need to modernise a globalised economy in need of large-scale sustainable solutions (Lian et al., 2022). It is further driven by their popularity with investors, who, in addition to profitability, seek to promote research and development (R&D) unconstrained by geographical borders (Audretsch et al., 2021). In 2021, 540 companies achieved ‘unicorn’ status (defined as startups valued at least \$1 billion), compared to 150 in 2020 (Startup Genome, 2022).

In this innovation context, social startups are defined as new market-oriented companies committed to solving cultural, environmental and/or social problems. In addition to profit and operational efficiency, they also seek to improve community well-being. Profit is not their main objective, except to the extent that it can help make the world a better place (Cacciolatti et al., 2020). There is a wide range of social startups in both developing and developed countries. For example, some social startups in developing countries are aimed at helping unemployed women (El Ghaib & Chaker, 2022) or providing access to

basic resources such as water (Cheah & Ho, 2019). In developed countries, they might be aimed at supporting integration and helping the elderly (Dörr, 2021).

These social enterprises are governed by the principles of democracy, participation and social justice (Goduscheit et al., 2021). Their business activities focus on the pursuit of the common good, and they reinvest almost all of their profits for this purpose (Cheah et al., 2019). Their performance is measured in terms of their positive return to society, not just revenues or share prices. New technologies enable their dissemination (Anuradha, 2018). According to the United Nations, social startups have become a highly effective innovative tool for solving key social problems such as poverty, employment and social exclusion (Salamzadeh et al., 2018). The keys to their effective management resemble those of any other type of startup, with the exception that they are economically oriented to social services. They fill a market niche, and they require investment support in the early phases of development (Dijkstra et al., 2022).

2.2. Cohousing as a solution to housing problems

Within this context, collaborative housing provides housing solutions adapted to all stages of people's lives (Alguacil et al., 2021). It can potentially resolve societal issues such as the increasingly pressing problems of rural depopulation, ageing, a lack of social values associated with intergenerational coexistence, as well as providing a defence mechanism against possible pandemics (Tortosa & Sundström, 2022; Weeks et al., 2022). For example, according to Glass and Norris (2022), the mutual support of members of these communities has played a key role in enabling people to cope with social isolation due to lockdowns during the COVID-19 pandemic.

In recent decades, collaborative housing has evolved to adapt to the transformations of a society with diverse housing problems (Lang et al., 2020), giving rise to initiatives such as cohousing, community land trusts and community self-help projects (Czischke et al., 2020), among others. Danish communities have shown that this diversity positively affects life satisfaction (Jakobsen & Larsen, 2019). However, the expansion of cohousing is slow and means overcoming numerous governmental and psychosocial obstacles, even more so than in the case of coworking (Bouncken et al., 2022; Kraus et al., 2022). Boyer and Leland (2018) argued that the limited uptake of cohousing is not because it is unattractive but because a substantial part of the population lacks access to it; hence the need for public financial support.

The unique feature of this new way of living is the collaboration between residents. Formal and informal covenants ensure the participation of all cohabitants. It therefore entails more involvement than simply sharing a living space; it also has relational, organisational and value dimensions. Beck (2020) listed four dimensions of cohousing. The first is vision and values, such as living together without surrendering privacy, in line with sustainable and social living. The second is organisation, which refers to financial and legal cohabitation through tacit and explicit community agreements. The third is relational, which refers to design, the feeling of belonging and togetherness, and the guarantee of individuality. The final dimension is physical, which refers to the specific characteristics of private and semi-private housing units and common facilities. Recent research on this paradigm has focused on clarifying its inherent problems (Table 1).

Table 1. Key aspects of cohousing.

Author(s)	Data	Objective	Conclusion(s)
Larsen (2019)	Survey of 72 communities	To study the development of Danish cohousing over the last 5 decades	The key concern of cohousing development is tenure structures.
Lubik and Kosatsky (2019)	Case studies	To assess the health effects of three housing models: co-operative, cohousing and indigenous communal housing	Cohousing promotes social inclusion and increases the perceived well-being and mental and physical health of residents.
Carrere et al. (2020)	77 experiences	To synthesise evidence on experiences of the relationship between cohousing and well-being and health	There is evidence of the positive impact of cohousing on physical and mental health, as well as other aspects related to social, emotional and economic support.
Angioni and Musso (2020)	4 cases studies of senior cohousing	To study telehealth integration in cohousing	Evidence is provided of the potential of remote monitoring and diagnostics, as well as the use of sensors and video for anomaly detection and predictive analytics.
Glass (2020)	5 cases of elder cohousing	To understand the reasons for the decision to live in cohousing	Evidence shows that the choice is driven by the search for a sense of community.
Wang et al. (2021)	24 interviews	To analyse the motivation to create or join cohousing	The social side is the main appeal of this type of housing, followed by environmental, financial, family and health considerations.
Rojo-Pérez et al. (2022)	58 interviews	To examine the process of cohousing development and management in Spain	The results provide a basis for designing specific regulations to support the development of cohousing.

The literature review shows that there are still barriers restricting the speed and scope of development of this new way of living. Socially speaking, it tends to be limited to well-educated, medium-high income, white people. At the local level, this feature limits its development to circles of similar individuals (Arbell, 2022). On the other hand, the advantages have been clearly enumerated in the studies to date: sustainable housing, community well-being and affordable prices (Glass & Norris, 2022; Warner et al., 2020). According to Guity Zapata and Stone (2022), the development of these communities is rooted in economic and socio-political factors, with residents seeking autonomy and an active role in building themselves a home.

However, even though cohousing first emerged more than 50 years ago, in some countries, such as Spain, senior collaborative housing was not implemented until the year 2000. It is still in the early stages of development, requiring external support to help ensure its expansion. Rojo-Pérez et al. (2022) reported that 20 years later, there is still a notable lack of knowledge about senior cohousing, despite its innumerable benefits in terms of enabling an active and healthy ageing process. This conclusion has been echoed in many European countries; for example, Kvietskute and Hauge (2022) confirmed that cohousing is an under-explored option in Norway, where social motivation and pragmatism are the main drivers of this sustainable and environmentally friendly alternative.

2.3. Energy communities versus energy prosumption

Far-reaching changes must be made to production, distribution and consumption patterns to reduce their climate impact, and energy is the key factor in this regard (Marti & Puertas, 2022). Energy transition entails a move towards responsible and sustainable consumption in all sectors of the economy, aided by advances in digitalisation and

electrification (IRENA, 2019). This context of transformation has seen the emergence of energy communities, which are legally defined as non-profits created to develop clean energy projects. Their members seek environmental, economic and social benefits (Real Decreto-ley 23/2020). They operate under the auspices of European directives EU, 2019/944 and EU, 2018/2001, which allow for the active participation of consumers in all energy markets and services to promote the use of renewable energies (REs). The aim is energy prosumption, a term that the European Environment Agency (2022) uses to denote the situation where citizens, institutions and companies play the joint role of producers and consumers of REs. There are several advantages of energy prosumption: (1) exposure to price variations is lower because energy prosumers produce part of what they consume; (2) no additional land is required because installations are placed on rooftops; (3) savings are channelled into moving towards the energy transition. However, in order to be cost effective, energy communities must be scaled-up to expand their scope and lower costs. According to Bokolo (2020), business architectures together with information technologies are necessary to support the growth of municipalities and foster energy sustainability through energy prosumption. Liu et al. (2022) showed that combining hybrid storage with the use of REs reduces carbon emissions by just over 50%, making zero-energy communities feasible.

The government policies associated with this process can create opportunities for the development of community energy. Leonhardt et al. (2022) reported that financial support, feed-in tariffs, grid services, and fiscal incentives are valuable instruments to support this transition. In addition, Heuninckx et al. (2022) suggested regulatory changes, facilitators and communication efforts.

Focusing on this concept, a number of studies have examined the transformation of urban and rural hubs to foster REs through energy prosumption (Bokolo et al., 2019; Matschoss & Repo, 2020; Sayah et al., 2021). Partnerships in the form of cooperatives facilitate energy transition and compliance with SDG 7, accelerating the process and providing universal energy access (Jenkins, 2019). According to Sovacool et al. (2017), co-ownership motivates sustainable practices, where social justice must prevail. It is a question not only of environmental issues but also of overcoming energy poverty to drive sustainable development. This activity in the energy sector has attracted the interest of the scientific community, with scholars attempting to provide knowledge that can support decision making (Table 2).

For the new energy system to succeed, a shift in roles is required, with greater citizen participation. The collaboration, commitment, responsibility and connection of all sectors is essential (Katircioglu & Katircioglu, 2022; Vernay & Sebi, 2020). Pena-Bello et al. (2022) proposed that peer-to-peer (P2P) exchange could provide a suitable way of ensuring public collaboration in the energy transition. They highlighted the need to allow energy prosumers to trade energy to achieve community independence while benefitting financially. However, the unpredictability and intermittent nature of distribution can cause instability in the P2P energy business (Malik et al., 2022). According to Creamer et al. (2019), community energy projects have broader implications due to the achievement of social goals, capacity building, energy justice and democracy. A sharing economy can help reduce consumption through energy efficiency and energy saving measures, thereby reducing emissions (Dabbous & Tarhini, 2021).

Table 2. The literature on energy transition

Author(s)	Data	Objective	Conclusion(s)
Hess and Renner (2019)	Policies implemented by France, Germany, Netherlands, Poland, Spain and United Kingdom	To review the decarbonisation policies of 6 European countries between 2007 and 2017	In terms of energy transition policies, a link between extreme right-wing parties and opposition to these policies should not be automatically assumed.
York and Bell (2019)	Energy statistics review	To determine whether there is a shift from fossil fuel use to RE use	RE growth is not replacing fossil fuels.
Kuzemko et al. (2020)	Review of energy transition policies	To analyse the role of COVID-19 in the sustainable energy transition	Post-pandemic economic stimulus packages and social practices may shape energy demand, carbon intensity and the speed of change.
Murshed (2021)	South Asian economies 1992–2015	To assess the impact of regional trade integration of economies in the transition to REs	There is a unidirectional causal relationship between trade integration and the consumption of REs.
Wahlund and Palm (2022)	Literature review	To identify the similarities and differences between energy democracy and active forms of energy citizenship	The literature shows a bias towards decentralised energy systems, overlooks representative democracy and focuses excessively on the analysis of European and North American problems.
Hu et al. (2022)	37 OECD countries 2000–2019	To analyse the drivers of energy transition in OECD countries	Regional authorities encourage transition, whereas results are mixed on climate change laws.

3. Method

The research has been conducted using the case method applied to two types of social start-ups developed in different Spanish provinces. The aim is to study the various stages of incorporation and growth to analyse their integration in the business ecosystem and society. The information was collected through semi-structured interviews conducted during October 2022 with the promoters of the two startups. Data quality is influenced by the type of interview, which can be structured or semi-structured. Structured interviews are used with large samples and consist of a set of predefined questions in a specific order, ensuring uniformity across all data collection sessions (Trapp et al., 2022). In this type of interview, accuracy prevails over detail. Hence, semi-structured interviews were chosen for the present study to provide greater flexibility. With semi-structured interviews, the researcher uses an interview guide to get participants to explain their experiences and discuss the specific aspects of their projects that they consider most relevant (Willig, 2008).

Given the nature of the study, participants were asked to share their experiences by responding to simple questions such as: How did the idea of the project arise? What are the stages of its implementation? What are the characteristics of the team backing the project? What barriers have been encountered? With a constant focus on quality, qualitative data were gathered to reach conclusions on the topic of interest. In terms of the profile of the interviewees, they had a high educational level and were aged between 35 and 60.

The method applied here is an example of what is known as the extended case method (Burawoy, 1998). The data gathered from the interviews can be considered reflexive

because the data collection process reduced the gap between interviewer and interviewee. The aim was to go from specific ideas to general conclusions. For example, by analysing the features of the chosen cases, they can be placed somewhere on the broad spectrum of social startups. The specific aims of the data collection are threefold: (1) to provide the history of the projects from their inception, (2) to highlight the social interactions with potential conflicts between their members and (3) to identify the effects of specific events on members' experiences.

4. Social startup models: cohousing and energy communities

As with any company, the legal form of a startup influences its operations. This paper presents two case studies of cooperatives. The aim is to determine whether they could be considered a specific type of social startup. According to Spanish regulations, a cooperative is a company made up of individuals who join together to do business and jointly administer, control and manage the company (Ley 27/1999). Decisions are reached by consensus under the principle of social equality; there are no power differentials among members. Regardless of the volume of shares held, each member has one vote. All members are jointly responsible for managing the company and ensuring its future viability. They are obliged to allocate part of their profits to non-distributable funds. Therefore, a high degree of collaboration, interdependence and flexibility is required (Holbeek et al., 2022; Yang et al., 2021).

The sector in which a cooperative operates influences its functions. For example, housing-oriented cooperatives bring together individuals whose common goal is to find a home, whereas energy cooperatives bring together individuals to modify their sources of energy. Statutes must be drawn up to regulate the use, rights and obligations of members, as well as the assignment or exchange of rights, and the sale price, if any.

4.1. The development of collaborative housing in the Region of Valencia (Spain)

In recent years, cohousing projects in Spain have gained momentum. Despite initially slow progress, the Region of Valencia is home to more than 80% of all cohousing projects in the country. This housing model is being implemented despite the absence of any specific legislation to regulate and protect users beyond each region's housing cooperative laws (Decreto Legislativo 2/2015; Ley 5/2011). Given that the aim is to provide not only housing to members and their cohabitants but also services to improve their quality of life, there needs to be a mixed regulation that governs specific aspects of consumer cooperatives. Cohousing is sometimes confused with coliving. In coliving, one person owns the housing facility, and users have access to a room with a separate bathroom and kitchen. They share common spaces such as the dining room, library and living room (Bergan et al., 2021).

The case studies analysed here are two senior collaborative housing projects in the Region of Valencia overseen by the Valencian Federation of Housing and Rehabilitation Cooperatives (FECOV). FECOV gives legitimacy to actions in the cooperative environment, serving as an interlocutor between government agencies and cohousing project partners. It also provides education, networking, communication and even financial advice. In some sense, it acts as a social incubator, exerting a positive impact on the region by providing services to social change-oriented enterprises (Giordano et al., 2021).

The two Valencian cohousing projects, AGORA and ITACA, were promoted by a group of people aged over 55, who wished to change their style of living in the latter stages of their lives. The promoting partners have a medium-high socio-economic and educational profile. They share similar values, missions and visions, as if they were part of a company. They act in a collaborative environment of coexistence and mutual support, attempting to create a lifelong sustainable project. Both projects are in the initial phases: the cooperative has been set up and the collaborative coexistence plan that will govern members' daily lives has been defined. With the help of technical experts, the promoters have also defined a business plan, choosing the location of the building. In one case, the building will be constructed on public land (AGORA) and in the other it will be built on rural land (ITACA).

The target market for these homes is people aged 55–70 who are non-dependent and who have a common desire to live in a community. To participate in the project, they must make an initial down payment of €25,000 to €36,000. This money will be used to buy the land and cover 20% (AGORA) to 30% (ITACA) of the total cost. The rest will be financed by banks. Loan repayment instalments will be paid by the cooperative through monthly fees charged to members. If any member leaves the cooperative, the initial contribution will be returned, after adjusting for inflation. Any future members will have to pay the initial down payment and the fees for incorporation. This system prevents real estate speculation, which is contrary to the basic principles of cohousing. The reason for members to participate in this project is the active desire to plan for a new stage of life. It entails breaking away from family dependence and committing to living in constant collaboration with and support for other members.

The cooperative owns the land and the building. It grants its members the use of individual housing and common areas. It is also expected to provide services such as food, personal development, health and social assistance. The way the housing is created and used is determined by the members in an assembly.

The projects have been developed in several phases following agreement among members and the supporting experts. The first phase is real estate management and social progress, which covers the period up to the completion of the building. At the same time, dissemination actions and feasibility analyses are carried out. This process leads to the consolidation of the group. In the case of ITACA, the stages are clearly defined. (1) The first stage is the initial approach, where the idea is explored for one year. (2) The second stage is commitment, where a steering committee is created for the initial startup. (3) The third stage is study and planning, where the legislation is analysed, along with economic considerations, the size of the project, the core values, and the vision and mission of the group. (4) The fourth stage is implementation, where the cooperative is founded and the search for land takes places. (5) The fifth stage is feasibility, viability and development, where the land is leased with a right to purchase, while the necessary urban planning permits are processed, and financing and new members are sought to achieve the ideal size. (6) The final project stage is the stage of construction. This process was inspired by lean methodology, which is commonly used by startups and was adapted in this case to address the specific characteristics of cohousing.

So far, these projects have faced innumerable governance, social and financial obstacles. Both projects have enough members to start building, but banks are proving reluctant to provide financing. The fact that the end borrower is a cooperative of

elderly people, together with the lack of a specific regulation for this type of cooperative, has delayed progress in completing the stages highlighted earlier. In Spain, the approval of the national law on startups is in its final phase and it is expected to come into force in 2023. However, this law does not cover cohousing, even as a specific case. At the regional level, the Valencian government is developing regulations on collaborative housing, but they are not applicable to the whole of Spain.

As a concept, cohousing was developed in the Nordic countries, and has also been implemented in Canada, the United States and Uruguay. The initial idea was to provide optimal housing solutions to inhabitants (Carrere et al., 2020). In addition to the aforementioned problems, Spain faces serious difficulties in expanding the model because of a strong attachment to the ownership of private property. These projects are relatively novel initiatives, and so dissemination is fundamental. Providing solutions for senior housing is a growing need worldwide; this type of cohousing offers a solution, with a focus on efficiency.

The success of the Danish model is based on substantial aid from the state. Initially, this aid boosted the construction of cooperative housing. Members tend to have a relatively high economic and educational level (Jakobsen & Larsen, 2019). Similar situations have been reported in other studies (Sanguinetti & Hibbert, 2018; Wang et al., 2021).

4.2. The development of energy cooperatives in Spain

The Spanish climate is a key motivation for the installation of solar photovoltaic technologies as an attractive way of supporting the energy transition (Di Pietro, 2022). However, Spain has only 33 energy communities, compared to 1,750 in Germany, 700 in Denmark and 500 in the Netherlands. This remarkably low number is mainly due to the absence of a specific regulatory model to make them viable (PWC, 2022).

This paper analyses two Spanish energy communities in development: Cooperativa Energética de Catarroja (CEC) and PIZTU cooperative society. The aim of the analysis is to identify problems that prevent members from becoming energy prosumers and thus hinder the energy transition. The first of these energy communities is located in Catarroja, a small Mediterranean town. The other is located in Zumaia, a small town in Gipuzkoa in the north of Spain. Both were founded as cooperatives, and were governed by specific regulations under the local legislation.

The CEC was created under the Federation of Electric Cooperatives of the Region of Valencia. This federation offers technical support to energy community initiatives. The CEC has its origins in the worker's cooperative Aieluz, which works to raise the energy literacy of individuals, companies, organisations and public administrations. Its goal is to teach efficient energy use to foster an environmentally and socially sustainable energy system. It began as a social startup with a unique and well-established purpose to promote the energy transition by educating all actors involved in this change.

The CEC has 33 founding members, although it hopes to reach and even exceed 100. Businesses and industries have expressed interest in participating. The first stage has been slow because this cooperative is a pioneer in the Region of Valencia and there is a lack of institutional support. This energy community seeks to break away from the price acceptance of energy consumers. The business plan targets energy savings for members, and education plays an important role. Three ways of alleviating the energy burden on

users have been identified: ensuring efficiency and rehabilitation, reviewing contracts, and using renewables. The latter is where energy communities come to the fore.

Following the European directives on local energy communities, the CEC will produce its own energy for distribution among its members. It will soon extend its uses to food, buildings and transport. In the context of buildings, energy production is achieved by installing solar panels on the roofs of buildings, warehouses or any other available construction. This initiative, promoted by CEC's technical partner Aieluz, has created a method that can be scaled and replicated in other locations.

PIZTU, a cooperative with 37 members, is in the process of defining projects and recruiting new members. All must share the same philosophy and energy concerns, as well as the goal of achieving an environmentally friendly transition. The aim is not only to produce energy but also to reduce consumption. Only two of the founding members have an energy background. Therefore, an intensive education programme has been undertaken to explain the project. This process has raised awareness of the need to transform the energy supply and collaborate to meet energy goals (SDG 7).

The CEC plans to use its own capital and its partners have expressed their intention to cover the installation costs given the delays in relation to subsidies. PIZTU, on the other hand, requires external financing and even donations from local inhabitants. Spanish regions receive European funds for these purposes, but it is taking longer than expected to distribute these funds. Both cooperatives propose the sale of the energy they generate and then the redistribution among their members to reduce their energy bills. They have not yet developed a mechanism for self-consumption or direct allocation to members of the cooperative. Innovative projects are still needed to turn these cooperatives into real energy prosumers and thus encourage not only self-consumption but also storage and energy efficiency to create savings.

5. Results and discussion

Based on the study of these two cases, the research questions posed earlier can be answered. First,

Q1. Should cohousing and energy communities be classified as social startups?

Like social startups, the main aims of cohousing and energy communities relate to social, environmental and economic benefits. By making a profit, they can ensure cheaper services. They are scalable social ideas that seek to meet market demand. The data reveal that these communities are in a period of expansion and that people are still becoming familiar with the concept. The consolidation of cohousing and energy communities is influenced by the stance of the founders of these projects and their socio-economic commitments (Boyer, 2018). These initiatives are being developed in an environment of uncertainty and risk, and the founding partners may have to bear the cost of technical support without any guarantee of success. This situation is consistent with that of social startups, but certain unique features have been identified which mean these two initiatives can be considered special cases (see Table 3 and Figure 1).

As shown in Table 3, these two initiatives share many characteristics with social startups that would bring them under the same legal framework. Cohousing fills a gap in the market that the traditional real estate sector has been unable to fill. Society, which is

constantly evolving, aspires to solve a housing problem that is becoming increasingly serious on a global level. A change of mentality is taking place whereby the aspiration to own private property is being displaced by a desire to build a form of shared residence. The values of community support form the basis of this innovative activity (Feng et al., 2019; Glass & Norris, 2022; Puplampu, 2020). However, there are still cultural barriers that prevent growth at the local level (Arbell, 2022).

Energy communities seek to foster the energy transition by promoting the use of cleaner, more environmentally friendly sources of energy, meaning these projects contribute to the global goal of reducing carbon emissions. Indeed, the profitability of these companies translates into progress towards meeting SDG 7. As such, social benefits prevail over economic ones.

The success of both initiatives lies in both the motivation of the entrepreneurs (Renko, 2013) and the number of similar initiatives in operation (Haugh et al., 2022). These social innovations require government support to ensure their survival (Jiao et al., 2020). This support will grow as the implementation of such projects becomes the norm. Like social startups, they require financial and business planning to ensure their viability (Cacciolatti et al., 2020; Lall & Park, 2022), become more sustainable and achieve superior economic performance (Cheah et al., 2019).

Q2. What needs to be done to scale up the minority model of cohousing and energy communities? What are the main barriers to doing so?

The cases analysed in this study show that both cohousing and energy communities provide solutions to underlying problems in society. They are created to meet a demand that is not covered by the existing supply. People are not prepared to make drastic changes in their daily lives to ensure sustainable socio-economic development. These initiatives require stable, harmonised policies that promote attractive business models to foster innovative services and provide better education for individuals. For example, Weeks et al. (2020) emphasised the need for ties between researchers and decision-makers to share experiences that can encourage the adoption of the most suitable measures.

The profile of the groups that are driving cohousing reveals the need to educate the public and help them see this form of cohabitation as a solution to their housing problems. There are complex issues involved, and education plays an essential role in

Table 3. Cohousing and energy communities vs. social startups

	Cohousing/Energy community	Social startup
Driver	Human potential	Human potential
Main objective	Social benefits within the framework of the SDGs	Social benefits within the framework of the SDGs
Secondary objective	Economic profitability to provide cheaper services	Economic profitability to provide profits to owners
Legal form	Majority-owned cooperative	No standard legal form
Timeframe	Slow development	2–5 years
Company profile	Original prototypes being replicated in Spain	Scalable and replicable
Risk level	Medium, with some uncertainty	High, with considerable uncertainty
Financing	Partners, bank loans and European aid in the case of energy communities	Initial group contribution and investment rounds
Government support	Limited	Limited

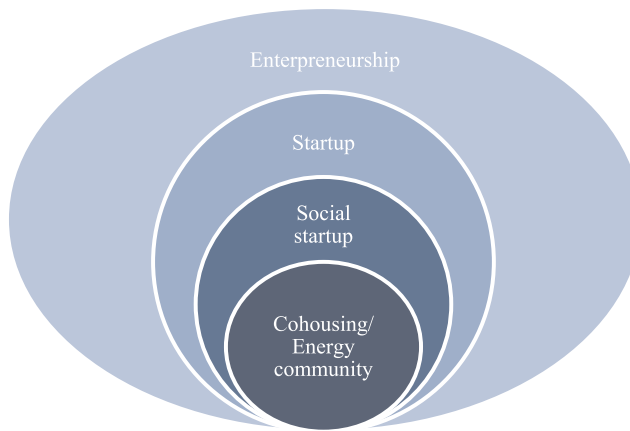


Figure 1. Entrepreneurship universe.

ensuring success (Arbell, 2022). Both ITACA and AGORA are being driven by citizens and technical experts with the right education and background to tackle the difficult task of promoting an initiative that challenges the dominant logic in Spanish society.

Similarly, in relation to energy, there is a lack of awareness among the general public. This sector is complex, and users are typically reluctant to change. This reluctance is almost always due to a lack of knowledge, and sometimes even of the terminology that is used. Aeioluz has proven to be an active channel to promote acceptance and interest, generating a collaborative social context around energy. Hence, CEC has grown more easily than PIZTU. This educational function is beginning to gain momentum in Europe. For example, in France, local energy agencies have been created to promote energy literacy and efficiency, thus alleviating the burden placed on energy communities (Vernay & Sebi, 2020).

The present environmental and social emergency must be tackled using sustainable development strategies. As noted by Otamendi-Irizar et al. (2022), humanity is facing global challenges that must be addressed by taking actions based on sustainability and social innovation, such as the ones proposed in this paper. In short, cohousing and energy communities are creating a collaborative social context, which urgently needs to be supported by education to ensure it is perceived as a form of sustainable growth. According to Hanke et al. (2022), energy education should not be limited to knowledge about how to change suppliers. Instead, it should publicise the activities of energy communities to support and disseminate their work. Altinay et al. (2022) claimed that academic creativity is the key to stimulating entrepreneurship; education is needed to support the establishment of these new practices in a society that must change its habits. Colapinto et al. (2020) and Lee et al. (2022) have cited the need for increased awareness of RE use, supported by greater technical expertise and financial resources.

6. Conclusions

Society is in a state of continuous change. Advancing at a dizzying pace, it requires a rapid response to emerging new demands. Innovation has become the driving force of this

response. By contributing to social, economic and environmental sustainability, it can help make the world a better place. Innovative ideas aimed at filling the gaps left unaddressed by the current social alternatives are becoming increasingly common. Concepts such as social innovation, social startups and collaborative coexistence are beginning to filter down to all levels of society. The cases studied in this paper reflect this situation, as well as revealing the need to accelerate their deployment within society. Entrepreneurs must work to overcome market rigidities and cultural barriers to ensure the development of these business models (Vatankhah et al., 2023). This research uses the case method to analyse two initiatives currently emerging in the entrepreneurial ecosystem – cohousing and energy communities – showing that they can effectively be categorised as social startups.

The real estate market cannot remain oblivious to reality. It must free itself from its rigidities to meet emerging demands. Problems such as population ageing, rural depopulation and access to housing are prompting the emergence of original ideas such as cohousing. The path to success is to turn it into a social project that cuts across classes, seeking both diversity in terms of the values of these communities and the effectiveness of the project. Likewise, prosumer energy communities are becoming a part of society, and this integration is helping curb climate change by making individuals aware of the need to participate. People must become involved and change their daily habits to ensure successful change. This transformation requires support from institutions in the form of regulations that encourage development, prevent inequalities and promote education to increase people's participation. It is about dismantling social barriers and structures. Public funding and cultural change are key elements to ensure universal awareness.

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