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RESEARCH ARTICLE

Institutional enablers for sustainable entrepreneurship: a configurational analysis

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Abstract Using fuzzy set qualitative comparative analysis (fsQCA), we examine the association of regulative, normative, and cultural-cognitive dimensions with sustainable entrepreneurship and sustainability impact in the entrepreneurially dynamic region of Catalonia in Spain. We identify four distinct configurations of institutional dimensions explaining our outcomes. A strong normative dimension, measured through sustainability culture, and the perception of sustainable business opportunities in the cultural-cognitive dimension both emerge as critical institutional enablers. Additionally, either the normative or cultural-cognitive dimension can compensate for the absence of government support (regulative dimension). This study advances theory by emphasising the interplay of these institutional enablers and highlighting the relevance of the cultural-cognitive dimension for sustainable entrepreneurship. Policymakers could consider these findings to effectively encourage diverse pathways to enable sustainable entrepreneurship and to scale genuine sustainability impact.

Plain English Summary This paper examines the association of regulations, social norms, and cultural-cognitive processes with sustainable entrepreneurial activity and sustainability impact. We identify four configurations revealing distinct interactions of institutional dimensions fostering sustainable entrepreneurship. Social norms and cultural-cognitive processes appear especially relevant, giving new insights into how to drive sustainable change beyond a fixation on technological advances effectively. From a policy perspective, we advocate for government interventions to restructure regulatory frameworks in ways that systematically support sustainable entrepreneurs. We also emphasise the critical importance of revitalising citizen political participation to shape sustainability action and business practices, preventing the responsibility for addressing environmental and social challenges from falling entirely on market forces. Lastly, we point out the need for multidisciplinary business education programs equipping founders with new skill sets to act upon sustainability challenges while creating resilient and publicly desired organisations.

Keywords Sustainable entrepreneurship · Sustainability impact · Institutional dimensions · Institutional approach · FsQCA

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1 Introduction

Sustainable entrepreneurship potentially creates radical, incremental change toward restoring the balance between nature, society, and economic activity (Parrish, 2010) and re-purposes the economic system to operate within Earth's planetary boundaries (Schaltegger et al., 2018). To truly overcome the inertia hindering sustainability transformations, scholars increasingly draw attention toward societal structures (Stål, 2015; Vatn, 2020). This shift moves the debate beyond the efficiency and innovation potential at the organisational level (Henrysson & Nuur, 2021), highlighting instead the crucial role of the institutional environment into which sustainable entrepreneurship is embedded (Gast et al., 2017; Maaßen & Urbano, 2024; Sud et al., 2009).

Concerning institutions, scholars have examined topics such as legitimacy (Spanuth & Urbano, 2024; Vedula et al., 2022b), hybridity (Davies & Chambers, 2018) and the influence of institutional factors on sustainable entrepreneurship (Meek et al., 2010; Wang et al., 2022; Wasserbaur et al., 2022; Wesseh et al., 2024). While some research has explored the idea that institutional factors form configurations (Stephan et al., 2015), most contributions to date have analysed these factors in isolation, leaving a gap in understanding their joint effects.

More precisely, there is still a limited understanding of how institutional dimensions interact to shape sustainable entrepreneurship and sustainability impact.[1] Therefore, we ask: How and why do the institutional dimensions (regulative, normative, and cultural-cognitive) interact and are associated with sustainable entrepreneurial activity and sustainability impact?

To answer this research question, we build a configurational model (Furnari et al., 2021) on the interplay of institutional dimensions and their influence on sustainable entrepreneurship. This model comprises three dimensions (regulative, normative, and cultural-cognitive institutions) based on Scott's (1995) institutional framework. A systemic view and the study of interacting institutional dimensions are decisive for understanding institutional arrangements, e.g. how sustainable entrepreneurs rely on different sets of institutional enablers depending on their context.

To investigate this model, we apply fuzzy set qualitative comparative analysis (fsQCA) (Ragin, 2008) and derive configurations based on 124 survey answers of sustainable entrepreneurs from the entrepreneurially vibrant region of Catalonia in Spain. Then, we further illustrate the configurations qualitatively through six in-depth interviews and secondary sources. FsQCA is particularly effective in identifying and analysing complex configurations that are difficult to capture with traditional qualitative or quantitative methods (Fiss, 2007). Its systematic and structured approach allowed us to investigate how different institutional enablers interact to shape sustainable entrepreneurship and sustainability outcomes.

Results reveal four distinct configurations of institutional dimensions, highlighting how their interplay is linked to sustainable entrepreneurial activity and sustainability impact. The interaction of the normative and cultural-cognitive dimensions is associated with our outcomes. Additionally, in isolation, the normative or cultural-cognitive dimension can compensate for the absence of the regulative dimension. Understanding such institutional enablers (Davidsson et al., 2020; Kimjeon & Davidsson, 2021) as conducive to sustainable entrepreneurship has important theoretical and policy implications.

We advance theory in three different ways. First, by employing fsQCA methodology, we examine the complementarity and substitution effects of institutional dimensions, offering a more nuanced understanding compared to their analysis in isolation. Second, we highlight the critical role of informal institutions, particularly the interaction between normative and cultural-cognitive dimensions, as essential enablers for sustainable entrepreneurs. Third, we are among the few studies to incorporate the cultural-cognitive dimension, enhancing understanding of why certain individuals act upon sustainability within similar societal constraints and shedding light on the pivotal role of cognitive and emotional processes in driving such actions.

[1] We understand sustainability impact, in line with Fichter et al. (2023), as the medium- or long-term system-level changes in social, technical, or natural systems that contribute to sustainable development by addressing meso- and macro-level phenomena beyond organizational boundaries and single-stakeholder value creation.

2 Theoretical framework

2.1 The institutional approach and sustainable entrepreneurship

The institutional approach is a widely accepted framework for examining entrepreneurship, positing that the legal and sociocultural context impacts a person's choice to start a business (Busenitz et al., 2000). Accordingly, the institutional environment shapes entrepreneurial activity (Audretsch & Belitski, 2017; Bradley & Klein, 2016). In the past, the impact of institutional factors on entrepreneurship and economic development has been extensively studied (Urbano et al., 2019) with authors suggesting that institutions are conducive to economic development (Baumol, 1990; Rodrik, 2003). Specifically, strong institutions precondition a higher level of entrepreneurial quality and activity (Baumol, 1990; Baumol & Strom, 2007).

North (1990, 2005) distinguish between formal and informal institutions. Informal institutions encompass belief systems (e.g. role models and trust), social norms and culture (e.g. entrepreneurial culture and community-wide normative) and cognitive factors (e.g. skills, risk-taking and leadership). Formal institutions are procedures and costs to create a firm and support mechanisms for new firm creation (e.g. property rights, contracts, procedures, and laws and regulations). He highlights the dominance of informal institutions over formal ones, noting that while formal rules change quickly and have limited influence on human behaviour, informal institutions are deeply rooted in cultural beliefs, evolve slowly, and better explain human choices (North, 1990, 2005).

Building on this, Scott (1995) further specifies this framework, identifying three institutional dimensions: regulative, normative, and cultural-cognitive. These dimensions impact entrepreneurial activity (Álvarez et al., 2014) since they set explicit and implicit boundaries for individual actions (Welter, 2012). In fact, higher-quality entrepreneurial ecosystems are shaped by a combination of regulative, normative, and cultural-cognitive institutional pillars conducive to sustainable entrepreneurship (Audretsch et al., 2021).

So far, sustainable entrepreneurship researchers have—explicitly or implicitly—studied Scott's (1995) institutional dimensions related to sustainable entrepreneurship in isolation. For instance, concerning the regulative dimension and its effect on sustainable entrepreneurship, authors examined green entrepreneurship policy (Wang et al., 2022), government support (Zhao et al., 2021), environmental compliance (Wesseh et al., 2024), and financial, educational, and political support (Sahasranamam & Nandakumar, 2020). In terms of the normative dimension, researchers explored social norms (Meek et al., 2010), cultural values (Hechavarría, 2016), societal collectivism and trust (Pathak et al., 2016), and entrepreneurial culture (Boffa et al., 2023). Regarding the cultural-cognitive dimension, Krueger et al. (2011) analyse entrepreneurial cognition to understand deep mental models to understand sustainable thinking. A few studies analysed all three institutional dimensions through Scott's (1995) framework related to sustainable entrepreneurship. Works focus on gaining legitimacy (Gasbarro et al., 2018), institutional barriers (Steinz et al., 2016), and environmental quality moderated by institutions (He et al., 2020), while only one identified contribution analysed the joint institutional effects of the regulative, normative, and cultural-cognitive dimensions (Stephan et al., 2015). Although Stephan et al. (2015) theorise configurations, their methodological approach employs multilevel analysis to test linear relationships and interactions between institutional dimensions. Considering configurations as causally complex, quantitative methods are criticised for their limitations in addressing equifinality—the idea that multiple pathways can lead to the same outcome (Fiss, 2007). In contrast, fsQCA is specifically helpful in revealing the causal nature of configurations, such as conceptualising cases as combinations of attributes. FsQCA emphasises the combinatory nature of attributes, uncovering how specific configurations of institutional dimensions interact to produce a given outcome (Fiss, 2011).

2.2 A configurational perspective on institutional dimensions and sustainable entrepreneurship

To analyse the interconnected nature of institutional factors, we build a configurational model of institutions' combined influence on sustainable entrepreneurship (Fig. 1). We rely on Scott's (1995) framework to group the institutional factors potentially influencing sustainable entrepreneurship. This framework emphasises the interaction between regulative

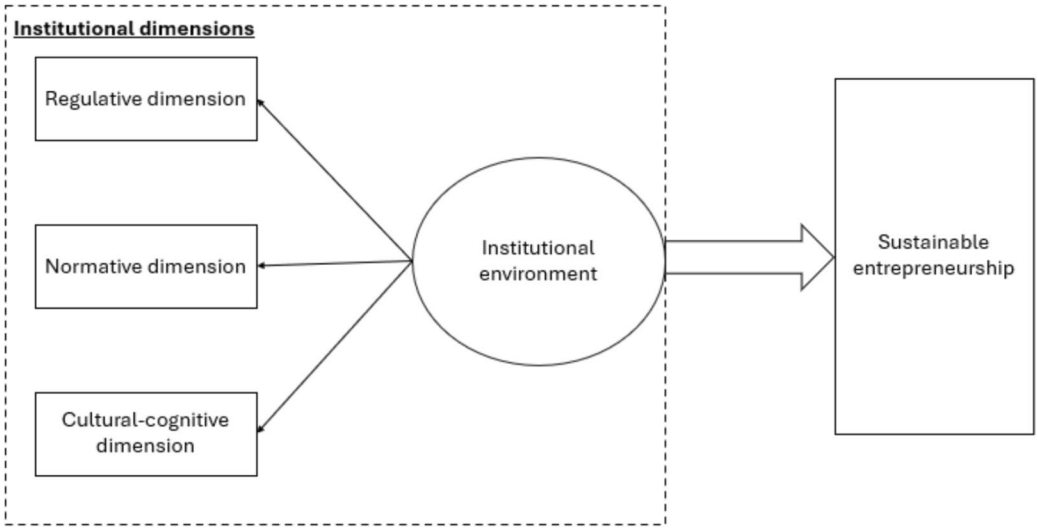

Fig. 1 Configurational model

factors (government support), normative factors (sustainability culture) and cultural-cognitive factors (opportunities to start a sustainable firm).

The regulative dimension involves formal rules, laws, and regulations. It is about governance, compliance, and the formal structure that dictates how organisations and individuals behave, enforced through laws and government policies (Scott, 1995). There is a long tradition of institutional economists studying rules and regulations for successful sustainability governance, identifying property rights, ownership and contracts as efficient regulative tools (Agrawal, 2001; Cole et al., 2014; Schlager & Ostrom, 1992). Precisely, Vatn (2010) argues that transacting over environmental amenities is always costly, making state intervention a precondition for enabling the market creation of environmental services.

In entrepreneurship, the regulative dimension takes form in contracts, procedures of firm creation, political structure, and property rights, associated with reductions in transaction costs enabling or constraining entrepreneurial activity (Urbano et al., 2019). Since governments pressure economic actors to reach sustainability goals, a series of laws and policies are enforced targeting industries to transition to low-carbon economies. These regulations are meant to encourage sustainable practices of economic actors and entail regulations on emissions, waste management, or resource utilisation.[2] Regulations especially but not exclusively affect incumbents having difficulties shifting their core business model, therefore trying to reduce the creation of negative environmental externalities[3] by complying with minimum environmental liabilities.

Sustainable entrepreneurs, however, are new market entrants with a higher potential to adopt radical and holistic sustainable business models (Henry et al., 2020). Previous research found that government incentive programs and policies play a crucial role in facilitating sustainable entrepreneurship (Hall

[2] Some examples at the EU level are (1) the Extended Producer Responsibility (EPR), an environmental policy making producers responsible for the entire lifecycle of their products, especially for their take-back, recycling, and final disposal, (2) the "Polluter Pays Principle", a policy approach where the costs of environmental damage are borne by the parties responsible for causing the pollution, incentivizing businesses to adopt more sustainable and environmentally friendly practices, and (3) the Nature Restoration Law aiming to restore ecosystems and biodiversity across the EU's land and sea areas, setting specific targets for habitat restoration that can impact businesses by requiring changes in land management practices, potentially affecting sectors like agriculture, construction, and energy.

[3] Environmental externalities refer to external costs that stem from economic activities, exerting negative impacts outside the marketplace. These are effects caused by one party on another, without any form of compensation, for example, environmental degradation (van den Bergh, 2001).

et al., 2010; Pacheco et al., 2010; Zhao et al., 2021). Particularly, Wang et al. (2022) found evidence of the influence of specific environmental subsidies supporting green technological innovation, green fiscal policies, or investments for green jobs, skills, and training on sustainable entrepreneurship.

The normative dimension encompasses social norms, values, and standards, reflecting how societal expectations shape behaviours and practices (Scott, 1995). North (1990) describes them as practised codes of conduct structuring societal interactions. Social norms are embodied in the values, culture, and social capital that define societies.

The literature agrees on the relevance of social norms for a functioning economy, collective well-being, and sustainability. Ostrom (2000) emphasizes its role in enabling cooperation and the successful collective management of common pool resources. Scholars highlight informal institutions (Khlystova et al., 2022), in the form of social capital (Burt, 2000; Coleman, 1988), as needed to create policies for public interests. Putnam (1993) explains: "The social capital approach, focusing on the indirect effects of civic norms and networks, is a much-needed corrective to an exclusive emphasis on the formal institutions of government as an explanation for our collective discontents" (p.9). Also, Ingebrigtsen and Jakobsen (2007) understand values and norms reflected in culture as a prerequisite for economic activities safeguarding a "constant renewal and the revitalisation of ideas, knowledge, and values" [….] while "it is imperative that it is not subject to the power structures of the economy, i.e., it must unfold in freedom" (p. 202).

Applied to entrepreneurship, social norms play a role as part of the informal institutional environment shaping firm creation (Urbano et al., 2019). Scholars identified entrepreneurial culture (Stephan et al., 2015), values of uncertainty avoidance, performance orientation (Autio et al., 2013), innovation, and pursuing high growth (Colombelli et al., 2016; Szerb et al., 2019) as prevailing social norms within traditional entrepreneurship research.

Sustainable entrepreneurship seems to be shaped by differing norms and values (Maaßen & Urbano, 2024). Generally, scholars have examined the power of social norms affecting sustainable behaviour (Cialdini et al., 1990; Sparkman & Walton, 2017; White et al., 2013). For example, Essiz et al. (2021) found that intergenerational influence is a strong factor in environmental socialization. Meek et al. (2010) highlight norms of environmentally responsible consumption and norms of family interdependence—people closely connected to their family, experiencing a generational transfer of environmental values and aiming to ensure their health and well-being—as conducive to sustainable entrepreneurship. Founders can be sensitized towards social and environmental topics by their environment, such as family, friends, or their culture and community.

Moreover, norms can influence sustainable entrepreneurs through supply and demand side mechanisms. On the supply side, sustainable entrepreneurs depend on the institutional quality and sustainability orientation of the whole ecosystem they are embedded in (Audretsch et al., 2024), and whether sustainability is seen as a desirable practice. Sustainable entrepreneurs cannot act in isolation, and sustainable practices oftentimes require high levels of coordination between actors and an aligned value network to achieve sustainability in the ecosystem (Kanda et al., 2021). On the demand side, social norms such as customers' sustainable lifestyles and green consumption practices influence sustainable entrepreneurs (Audretsch et al., 2024). The surrounding culture can favour or not sustainability, and norms can significantly vary across regions.

The cultural-cognitive dimension focuses on the external world of stimuli and how the individual responds to them, specifically the interaction between the individual and society's external belief system (Scott, 1995). According to North (2005), humans form mental models to explain and interpret the environment, drawing on their own experiences where well-defined institutions and individuals sharing understanding can lead to more effective coordination and cooperation. In this sense, "institutions influence behaviour not simply by specifying what one should do but also by specifying what one can imagine oneself doing in a given context" (Hall & Taylor, 1996, p. 948). Here lies a special contribution of new institutional theory, emphasising the relationship between the individual and institutions where individual action takes place within available institutional templates guiding a course of action (Powell & DiMaggio, 1991); in other words, the individual has control over events in a given system (Coleman, 1990).

The cultural-cognitive dimension helps us understand why, in a given context, some people care about

sustainability and translate their individual actions into impact. Scholars identified certain internal qualities (cognitive, socio-emotional, and relational processes) influencing people towards sustainability (Wamsler et al., 2021), e.g. compassion towards the suffering of humans and the environment (Pfattheicher et al., 2015), and agency as a sense of empowerment (Walsh et al., 2020). These internal qualities can translate into sustainability action, further conditioned through self-efficacy (the belief that actions have a change effect) (Hawkins et al., 2015). Also, social identity and trust are powerful influences favouring socially and environmentally desirable governance (Putnam, 1993).

Moreover, cognitive dissonance plays a role in reducing dissonance between knowledge, conflicting values, and actual behaviour (Wamsler et al., 2021). Scholars observed discrepancies between cultural practices (actual behaviour norms) and cultural values (ideals and beliefs), demonstrating that people's actions can differ significantly from what they believe or value ideally (Frese, 2015). Similarly, Chiu et al. (2010) explore what they term "intersubjective culture"—the phenomenon of personal beliefs not necessarily aligning with values and beliefs that are culturally endorsed.

The cultural-cognitive dimension is especially interesting for understanding sustainable entrepreneurship, as a form of action to achieve sustainability impact, shedding light on the internal processes decisive for sustainable entrepreneurs. It can explain how sustainable entrepreneurs perceive opportunities and act upon social and ecological problems (Eller et al., 2020; Maaßen et al., 2023), showing precisely why, in a given system where similar social norms shape individuals, only some entrepreneurs prioritize sustainability action in their business endeavours while others conform to the growth and performance-driven types of entrepreneurship.

This dimension translates to entrepreneurs' knowledge, confidence, skills, and competencies (Estrin & Mickiewicz, 2012; Hafer & Jones, 2015; Levie & Autio, 2008), how information from the regulative and normative institutions is processed and how the interplay between external factors and entrepreneurs' internal characteristics is shaped (Verheul et al., 2002). Individuals could be incentivised to create opportunities for sustainable entrepreneurial activity if they perceive the presence of necessary knowledge and skills in their environment (Audretsch et al., 2021). Sustainable entrepreneurs are especially driven by awareness of market imperfections (Cohen & Winn, 2007) and the identification of social or ecological problems and their solutions (Belz & Binder, 2017). They also have specific knowledge of the natural and communal environment under threat, internalising social and environmental problems and, thus, perceive entrepreneurial opportunities (Hanohov & Baldacchino, 2018; Patzelt & Shepherd, 2011).

3 Methodology

3.1 Research setting

Catalonia provides an ideal setting for this study, as it is recognised as a highly entrepreneurial region within Spain and Europe, offering a stimulating environment for entrepreneurs (Observatorio del Emprendimiento de España: Global Entrepreneurship Monitor, 2023). Barcelona, the capital of Catalonia, is the 5th best ecosystem in the European Union for start-up creation, closely ranked behind Paris, Berlin, Stockholm, and Amsterdam and ahead of Munich, Dublin, Helsinki, Madrid, and Copenhagen (ACCIÓ, 2023). The achievements of Barcelona can be partly credited to the efforts of the Catalan Government, which in recent years has been dedicated to creating a robust entrepreneurial environment benefiting both founders and investors (Coll-Martínez et al., 2022).

The region's vibrancy is additionally reflected by the award of the "European Entrepreneurial Region", which Catalonia received in 2012 and Barcelona in 2023. This award, given by the European Commission, recognises regions that have implemented innovative and effective entrepreneurial policies (European Committee of the Regions, 2023). In 2023, Barcelona was recognised with the award for its commitment to creating a more sustainable, inclusive, and resilient economy. The city initiated the "Barcelona Green Deal 2030", a strategic plan designed to transform Barcelona into a region fostering digital and technological efficiency while prioritising social equality. Part of the plan is reducing bureaucratic barriers, eliminating the business start-up tax for entrepreneurs, and other measures to facilitate economic activity (Ajuntament de Barcelona, 2021).

Additionally, in 2020, the business start-up tax for entrepreneurs was abolished, and various other tax incentives and subsidies were introduced. Furthermore, the city council participates in investment funds to encourage firm creation (Ajuntament de Barcelona, 2021).

Catalonia is pioneering in sustainable business creation, offering various government incentive programs specifically adjusted to support the needs and challenges of sustainable entrepreneurs. For instance, the local development agency of Barcelona, "Barcelona Activa" offers a series of training[4] for sustainable entrepreneurs. Also, the ProACCIÓ Green program[5] of the Catalan Agency for Business Competitiveness (ACCIÓ), including services, grants, and activities supporting sustainability projects and responsible innovation,[6] stimulates sustainable business creation.

The progressive landscape for sustainable business creation underlies deeply rooted norms and values in Catalonia. It is characterised by a strong sense of cultural identity, including its own language (Catalan). The push for autonomy and independence has been intertwined with progressive ideologies (Dinas, 2012), promoting ideas of environmentalism (Zahedi et al., 2019), social justice, and inclusive policies (Ajuntament de Barcelona, 2017). The political landscape in Catalonia often leans more towards leftist and separatist parties, which typically advocate progressive policies (Segura i Mas & Barbé i Pou, 2011).

These underlying norms and values create an environment where political, social, and ecological movements are widely accepted by society. A report on perceptions of the state of the environment reveals that 99% of Catalans are strongly concerned and think it is very urgent to act on climate change (CERES, 2021). A culture deeply valuing collective action will likely see more citizen initiatives—in other words referring to Scott's (1995) cultural-cognitive pillar, the environment in Catalonia allows for such actions to happen. A range of examples of collective action can be given from the region of Catalonia, which represents a hub for various forms of activism.

One of Catalonia's most significant political movements is the push for independence from Spain. This movement has seen massive demonstrations, political campaigns, and a referendum in 2017. Such a movement is not only about secession but also encompasses issues of cultural identity, language rights, and self-governance. Barcelona, Catalonia's capital, is known for its history of urban activism. This includes movements against gentrification, tourism pressure, and affordable housing. Neighbourhood associations and platforms like PAH (Platform for People Affected by Mortgages)[7] have been instrumental in these efforts. Also, Catalonia flourishes in environmental protection initiatives, seeing various environmental movements (O3sac, 2018) focusing on issues like protecting the Mediterranean coastline and preventing the further extension of the Barcelona port and airport[8][9].

An example of Catalonia's strong focus on gender equality is the success of the Barcelona soccer team "FC Barcelona Femení" (women's football team), which achieved significant success at the European level also due to equality initiatives promoting gender equality in sport. This includes efforts to provide better resources, training facilities, and opportunities for women's teams, aligning with broader progressive values of equality and inclusivity (The Guardian, 2018).

3.2 Data collection

Primary data collection Firstly, we identified the study population from the recently launched and unique database "Startupshub Catalonia",[10] openly accessible on the webpage of ACCIÓ. The database lists more than two thousand start-ups founded in Catalonia. The webpage, including the database, allows for refining the list of total results, providing, amongst others, filters for "Circular Economy", "Sharing Economy", "Social Economy", and "Smart Cities". We applied such filters to derive a list of start-ups working in the sustainability sector, giving 648 results representing our study population.

[4] https://emprenedoria.barcelonactiva.cat/es/incubadora-innobadora

[5] https://www.accio.gencat.cat/en/serveis/innovacio/innovacio-empresarial/proaccio-green

[6] Other public and private organizations providing support to social and sustainable businesses are Tandem Social (https://www.tandemsocial.coop/en/), Ship2BFoundation (https://www.ship2b.org/en/), Ateneu Cooperatiu (https://coopcatcentral.cat/), and XES (https://xes.cat/).

[7] https://pahbarcelona.org/ca/portada/

[8] https://zeroportbcn.wordpress.com/

[9] https://twitter.com/niunpamdeterra

[10] https://startupshub.catalonia.com

For data collection, we applied triangulation using multiple methods to give more substantial support to our arguments (Eisenhardt, 1989; Yin, 2009). We combined survey data with interview data and secondary sources. Survey data collection occurred from July to October 2023, when we emailed the 648 start-ups identified. In our emails, we asked the start-up's founder to answer the online survey. Throughout this time, we followed up on the firms by phone to ensure they received our email containing the online survey.

To guarantee the survey's validity and get the first exploratory results, we conducted a pilot study with three firms before distribution consisting of online meetings with the start-ups' founders. These meetings allowed us to modify our survey and improve its clarity before distributing it to 648 firms. The survey consisted of 25 questions on perceived institutional dimensions affecting start-ups in Catalonia and the founders' estimation of their firm's sustainability impact. Also, one of the questions asked was whether the respondent knew firms based in Catalonia operating similarly to theirs regarding sustainable initiatives. By doing so, we found out about other start-ups that could be of interest to our study, applying a snowballing methodology (Goodman, 1961; Marshall, 1996). We studied the suggested firms carefully to ensure they matched our criteria of being a start-up in the sustainability sector based in Catalonia. We derived fifteen extra start-ups to contact. Eventually, from a total of 663 contacted start-ups, we received 124 fully completed surveys used for our analysis, giving a response rate of 18.7%.

Supplementary data collection For the second part of data collection, we conducted semi-structured interviews with six selected founders from our study population to complement survey data and get in-depth insights into the relationships under study. We carefully screened to select theoretically useful cases (Eisenhardt, 1989; Eisenhardt & Graebner, 2007), reflecting positive examples of the phenomenon of interest (Yin, 2009) and building theory on institutional dimensions and sustainable entrepreneurship. Specifically, in our case selection, we tried to cover the nine sectors we also asked for in the survey (agriculture/food, biotechnology, built environment/design, energy, fashion and textiles, manufacturing/materials, services, transport/logistics, and waste management) to assure the case sample's richness and variation (Eisenhardt, 1989). We ensured that no start-up was from the same sector. Interviews encompassed questions on the start-up's business models, their intended sustainability impact, and the institutional dimensions in Catalonia affecting the firms throughout their development. Interviews lasted around 50–70 min and were recorded and transcribed [see Appendix 1 for interview questions]. Table 1 lists the start-ups whose founders we interviewed providing information on the entrepreneurs' profiles and descriptive information of their start-ups.

Lastly, data collection for secondary sources was derived from screening the cases' web pages. Also, the database "Startupshub Catalonia" provided basic information on the selected cases (location, founding year, number of employees, industry, and funding stage) that were useful for us as secondary sources.

3.3 Data analysis

For data analysis, we apply fuzzy set qualitative comparative analysis(fsQCA) (Ragin, 2008), in a stage-wise fashion using fsQCA 3.0 (Furnari et al., 2021), to derive configurations concerning institutional dimensions and sustainable entrepreneurship and sustainable impact based on 124 survey answers. Then, we further illustrate the configurations qualitatively through six in-depth interviews and secondary sources.

The use of Qualitative Comparative Analysis as a method is becoming more popular in the fields of business and social sciences (Dwivedi et al., 2018), especially in entrepreneurship research (Kraus et al., 2018),[11] and exploratory studies (Aversa et al., 2015). FsQCA offers the possibility to identify configurations that would be difficult to find through traditional qualitative or quantitative methods (Fiss, 2007). FsQCA is particularly suitable for examining causal complexity (Ragin, 2008). Given our focus on the interplay between institutional dimensions, sustainable entrepreneurship and sustainability impact, it emerges as a particularly compelling method for analysis.

The foundation of this set-theoretical analysis involves combinatorial logic, fuzzy-set theory, and Boolean minimisation. These elements are used to

[11] See Leppänen et al. (2023), Meurer (2022), Wang et al. (2023), and Zhou et al. (2023) for samples of fsQCA in entrepreneurship research.

Table 1 Case description

Start-up	Entrepreneur profile and level of education	Entrepreneur's professional experience prior to start-up	Sector, year of foundation, and location	Business activity
A	Male, 44, Master's in Engineering, Master's in Business Innovation	Automation engineering lead	Energy, 2022, Barcelona	Designing community-driven agrivoltaics installations
B	Female, 36, Bachelor's in Journalism, Master's in Digital Marketing & Social Media	Digital marketing manager	Waste management, 2018, Barcelona	Promoting a "Zero Waste life" through development of an application and educational campaigns
C	Male, 36, Bachelor's in Journalism, Master's in Multimedia Design	User experience designer	Services, 2019, Barcelona	Supporting social and environmental organizations in digital transformation projects
D	Male, 49, Bachelor's in Architecture, postgraduate in Business Administration	Founder & partner in renovation service start-up	Built environment/design, 2019, Barcelona	Designing sustainable furniture
E	Female, 35, high school degree	Founder of study center for video game design and programming	Biotechnology, 2018, Santa Perpètua de Mogoda	Developing biodegradable bioplastics
F	Female, 45, Bachelor's in Architecture	Architecture and landscape management	Fashion and textiles, 2016, Barcelona	Proposing an alternative solution to disposable menstruation products

identify combinations of case conditions that might be necessary and sufficient to result in an outcome (Ragin, 2006). In particular, fsQCA distinguishes between necessity analysis and sufficiency analysis. While a necessary condition must be present for an outcome to occur, it alone is not enough to guarantee the outcome (Oana et al., 2021). This implies that while a necessary condition is vital for the outcome, additional conditions may also be required (Fiss et al., 2013). In contrast, a sufficient condition is capable of producing the outcome, though the same outcome may arise through alternative sets of conditions (Ragin, 2006).

3.4 Measures

We utilised indicators from established literature for each institutional dimension and crafted corresponding survey items to inquire about respondents' perceptions of their institutional context (Table 2). All the items were measured using a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). Before conducting the analysis, we assessed the reliability and validity of the scale.

3.5 Calibration thresholds

We calibrated our data according to Ragin (2008) to subsequently be able to perform necessity and sufficiency analyses. The calibration procedure transforms raw scores into set measures, thereby rescaling the initial measures into fuzzy scores from 0.0 to 1.0 (Ragin, 2008). Table 3 presents the calibration thresholds applied in our study. Before performing the calibration for the fsQCA analysis, we computed the average score of all items associated with each construct, retaining the original Likert scale values (1 = "Strongly disagree" to 7 = "Strongly agree"). The calibration process transforms these values into fuzzy set membership scores, following Ragin's (2008) guidelines. Full membership refers to cases that exhibit the complete presence of the measured property (e.g. the regulative dimension is strong), which we assigned to the value of 7, corresponding to "strongly agree". Full non-membership indicates the complete absence of the property (e.g. the regulative dimension is weak), corresponding to the value of 1 "Strongly disagree". The crossover point represents the threshold where a case transitions from being more in than out (or vice versa) of the set, reflecting

Table 2 Constructs

Construct	Items	Source
Sustainable entrepreneurial activity	**To what extent do the statements regarding sustainable entrepreneurial activity apply to your business?**	
	Ecological or social sustainability were taken into account strongly in our business model	Fichter and Tiemann (2020)
	The topic of ecological or social sustainability has been of major significance in our founding concept	
	In future entrepreneurial activities (starting new businesses, contents of the actual business concept, opening up new markets), we will take ecological or social sustainability aspects into account	
Sustainability impact	**What do you think about the sustainability impact of your business?**	Eide et al. (2020)
	Our sustainable business model is aimed at mitigating the biggest challenges concerning sustainability we see in our industry	
	Our business model is an effective way to mitigate or solve the major challenges of sustainability we see in our industry	
Regulative	**Government support. In Catalonia…**	GEM NES Questionnaire (2012)
	The support for sustainable businesses is a high priority for policy at the local government level	
	The support for sustainable businesses is a high priority for policy at the regional government level	
	Government policies consistently favour new firms in the sustainability sector	
	A wide range of government assistance for sustainable businesses can be obtained through contact with a single agency	
	Science parks and business incubators provide effective support for sustainable businesses	
	There are an adequate number of government programs for sustainable businesses	
	Almost anyone who needs help from a government program for a sustainable business can find what they need	
	Government programs aimed at supporting sustainable businesses are effective	
Normative	**Sustainability culture. In Catalonia …**	
	There is strong awareness for sustainability in Catalonia	Bischoff (2021)
	Family members whose opinion I value would approve of my engagement in prosocial and pro-environmental behaviour	Kim and Seock, (2019)
	Family members whose opinion I value would approve of my engagement in sustainable entrepreneurship	
	Close friends who are important to me would support my engagement in sustainable entrepreneurship	
	The residents in my community would support my engagement in sustainable entrepreneurship	
	The general public would endorse my engagement in sustainable entrepreneurship	
Cultural-cognitive	**Opportunities to start a sustainable firm in Catalonia …**	GEM NES Questionnaire (2012)
	There are plenty of good opportunities for the creation of sustainable businesses	
	There are more good opportunities for the creation of sustainable businesses than there are people able to take advantage of them	
	Good opportunities for sustainable businesses have considerably increased in the past five years	
	Individuals can easily pursue sustainable entrepreneurial opportunities	
	There are plenty of good opportunities to create truly sustainable businesses	

maximum ambiguity or uncertainty in membership status. This point was set at 4, corresponding to "Neither agree nor disagree".

3.6 Analytical moments

After the calibration, the truth table [see Appendixes 2 and 3] was created using every logically possible configuration of regulative, normative and cultural-cognitive dimensions for both outcomes: sustainable entrepreneurial activity and sustainability impact, and then it was simplified by setting specific thresholds for consistency and frequency (Fiss, 2011; Ragin, 2008). Boolean algebra was subsequently used to analyse these tables and to determine their necessity and sufficiency relationships with the outcomes.

3.7 Illustration of configurations

After deriving our configurations through fsQCA, we further illustrate them qualitatively using our data from six in-depth interviews and secondary sources. We analysed our interview data by codifying it based on content analysis (Bryman, 2012). We coded the data through the lens of our previously identified configurations, finding additional evidence of differing institutional influences conducive to sustainable entrepreneurship and sustainability impact.

4 Results

Table 4 presents the necessity analysis, and Table 5 illustrates the results of the configurations derived from the sufficiency analysis. Four distinct configurations explain the institutional enablers leading to sustainable entrepreneurial activity and sustainability impact. Each configuration represents a specific combination of institutional dimensions contributing to these outcomes. The solution coverage and consistency scores indicate the overall robustness and reliability of the findings. We further illustrate the configurations qualitatively through six in-depth interviews and secondary sources.

4.1 Necessity analysis

Table 4 shows the results of the necessity analysis for both outcomes: sustainable entrepreneurial activity and sustainability impact. Applying a consistency threshold of 0.90 and a minimum coverage value of 0.60 (Ragin, 2008), our analysis showed that the institutional dimensions require interaction to achieve sustainable entrepreneurial activity and sustainability impact. Specifically, the interaction among the three institutional dimensions for both outcomes meets the necessity criteria (consistency ≥ 0.90 and coverage ≥ 0.60). For the sustainability impact outcome, pairwise interactions involving the normative dimension (normative + cultural-cognitive or regulative + normative) also meet the threshold, indicating that a strong normative dimension—a reflection of a favourable culture that supports sustainable entrepreneurs—is a necessary condition for the sustainable impact outcome.

4.2 Sufficiency analysis

We conducted a sufficiency analysis based on Fiss' (2011) (Table 5). Since our sample consists of 124 cases, we set a frequency threshold of 3 and a consistency threshold of 0.95, which is above the recommended threshold of 0.8 (Greckhamer et al., 2013). To analyse the configurations in the results, we considered both parsimonious and intermediate solutions to identify core and peripheral conditions (Fiss, 2011). Subsequently, we focused our analysis on the results derived from the intermediate solution for a meaningful balance between empirical accuracy and theoretical relevance (Ragin, 2008).

Table 3 Descriptive statistics and calibration thresholds

Condition	Mean	SD	Full in	COP	Full out	Min	Max	Cases
Sustainable entrepreneurial activity	5.71	1.35	7.0	4.0	1.0	1	7	124
Sustainability impact	5.51	1.42	7.0	4.0	1.0	1	7	124
Cultural-cognitive	4.41	1.23	7.0	4.0	1.0	1	7	124
Normative	5.34	0.93	7.0	4.0	1.0	1	7	124
Regulative	3.52	1.40	7.0	4.0	1.0	1	7	124

4.2.1 Culture-embedded entrepreneurship (path 1a)

Our first configuration represents a solution where founders associate sustainable entrepreneurial activity with the presence of social norms, specifically with a strong sustainability culture in Catalonia, while the absence of a supportive regulative dimension through government support is observed. This suggests that, in cases where government support or regulations are lacking, the presence of strong social norms and cultural values that encourage sustainability can still enable sustainable entrepreneurial efforts. The raw coverage of this configuration is 0.61, indicating that it accounts for a significant portion of cases. The unique coverage is 0.13, reflecting its distinct contribution compared to other configurations, with a consistency score of 0.95, ensuring its reliability.

Founder C describes his experience of the strong sustainability culture:

> "When we've gone out to explain to the world what we do, we're a social enterprise, right? What happens to us? When we approach the third sector, it's absolute connection."

Also, founder A depicts the environment in Catalonia as beneficial:

Table 4 Set-theoretical necessity analysis

Conditions tested	Sustainable entrepreneurial activity		Sustainability impact	
	Consistency	Coverage	Consistency	Coverage
Regulative	0.50	0.94	0.51	0.92
~ Regulative	0.67	0.91	0.69	0.89
Normative	0.88	0.91	0.89	0.89
~ Normative	0.29	0.95	0.30	0.94
Cultural-cognitive	0.69	0.93	0.73	0.94
~ Cultural-cognitive	0.49	0.92	0.49	0.88
Regulative + normative	0.88	0.91	0.90	0.88
Regulative + cultural-cognitive	0.73	0.92	0.76	0.92
Normative + cultural-cognitive	0.91	0.91	0.93	0.89
Regulative + normative + cultural-cognitive	0.91	0.90	0.93	0.88

~ sign refers to the absence of the condition

Table 5 Analysis of sufficient conditions

Paths	Sustainable entrepreneurial activity				Sustainability impact		
	1[a]	2[a]	A[b]	B[b]	3[a]	4[a]	C[b]
Regulative dimension	⊗		⊗		⊗		
Normative dimension	●	●				●	
Cultural-cognitive dimension		●		●	●	●	●
Consistency	0.95	0.94	0.91	0.93	0.96	0.95	0.94
Raw coverage	0.61	0.66	0.67	0.69	0.52	0.69	0.73
Unique coverage	0.13	0.18	0.18	0.19	0.02	0.19	0.72
Overall solution consistency	**0.94**		**0.91**		**0.95**		**0.94**
Overall solution coverage	**0.79**		**0.87**		**0.71**		**0.73**

[a]Configurations of intermediate solution (1, 2, 3, 4)

[b]Configurations of parsimonious solution (A, B. C)

● represents the presence of the condition

⊗ represents the absence and blank spaces "don't care" meaning that the condition may be present or absent in the configuration, while large circles represent core elements, small circles indicate peripheral elements

> "Let's say Barcelona is a very good city to start projects, really great, and the more I immerse myself in the ecosystem, the more I realise this is true because there are multiple forums where you can meet other entrepreneurs, organisations dedicated to helping startups, and so on."

The founders also describe their dissatisfaction with lacking formal support, as founder A states: "I see that the Catalan public administration lacks sufficient tools and instruments to better support startups."

Founder C emphasises specifically lacking emotional support and coaching:

> "The emotional aspect is key, and in fact, in the social entrepreneurship program, they always asked us, "What did you feel was missing?" At the end of the course, all the organizations say the same thing: emotional support, and coaching. I think this is one of the biggest barriers to starting in the social sector—having someone to support you so you don't give up when challenges arise."

4.2.2 Culture-individual embedded entrepreneurship (paths 2a and 4a)

The second and fourth configurations highlight a key finding: the combination of the normative and cultural-cognitive dimensions emerges as a sufficient condition for both sustainable entrepreneurial activity and sustainability impact. This alignment suggests that the interaction of the institutional enablers facilitating sustainable entrepreneurial activity also leads to sustainability impact. However, it is notable that this is the only configuration shared by both outcomes, indicating that while overlap exists, other institutional configurations may uniquely contribute to each outcome. These configurations highlight that founders perceive strong social norms and favourable opportunities to start a sustainable venture as key institutional enablers for sustainable entrepreneurial initiatives. This solution particularly emphasises the critical role of informal institutions as core causal conditions. The raw coverage in the outcome of sustainable entrepreneurial activity is 0.69, marking it the most comprehensive pathway among the configurations. The unique coverage is 0.16, and its consistency score of 0.95 further confirms its robustness. The raw coverage in the outcome of sustainability impact is 0.66, showing that this pathway explains a substantial number of cases. Its unique coverage of 0.18 highlights its specific role in the solution set, and the high consistency score of 0.94 confirms the strength of this relationship.

Founder B describes precisely the interplay between the normative and cultural-cognitive dimensions as crucial:

> "I am convinced that there is a part of received education at home as well as in school, and then there is also a personal inclination. I received education and I was sensitized towards the environment at home, but my sister is not like me, she has different interests."

Founder C depicts in detail how a combination of know-how, networking opportunities in Catalonia, and seeing a demand in people becoming more sensitive to plastic pollution were indicative factors for acting upon an opportunity:

> "I had quite extensive training in the field of biotechnology and specifically in making bioplastics with bacteria. So, the motivation was to say, hey, if this can be done with waste and it can actually be scaled up, then let's do it so it can be made available to everyone."
> "In the end, it's about finding the right people, but for that, you need to put yourself out there. And it's true that in Barcelona, you have many more opportunities for networking than in other locations in Spain. Here, it wasn't so much about seeing a market opportunity, because it came from know-how. But it was honestly the perfect timing because it was right when people were starting to look for sustainable alternatives to plastics. It was when people began to become more aware of issues like pollution and so on, so it all kind of went hand in hand."

4.2.3 Individual-embedded entrepreneurship (path 3a)

The third configuration identifies a solution where the absence of the regulative dimension, combined with the presence of the cultural-cognitive dimension, constitutes a sufficient condition for achieving sustainability impact. This configuration suggests that, even in the perceived absence of strong government

support or regulations, the recognition of business opportunities to address sustainability challenges can act as a compensatory mechanism, driving impactful outcomes. With a raw coverage of 0.525 and a unique coverage of 0.017, this configuration plays a more limited role but remains significant. Its consistency score of 0.963 underscores its validity.

Founder F describes the discovery of a business opportunity as follows:

> "I mean, we were looking to meet a very basic need. It was all very straightforward, but men of a certain age, who had never talked about menstruation with their partners, just didn't understand it. Discovering the menstrual cup seemed like a wonderful idea for women. I saw that it wasn't well known here in Spain."

At the same time, she criticises formal support due to over-focus on success stories, stigmatising failure and not stimulating a proper environment where founders can learn from failure:

> "(In Catalonia), they carry out many advertising actions, they host events and explain things and there is always a focus on social entrepreneurship. It has spread beyond Barcelona. All over Catalonia there is quite a lot of work being done in this area. However, they always only display the success cases, you know? And I think this is a problem because you don't just learn from successes. You know, being shown success stories all the time is fine, but it's also important to talk about what happens when you make mistakes, right?"

5 Discussion

This study highlights sustainable entrepreneurship as a complex phenomenon whose understanding extends beyond commonly assumed technological fixes that the current sustainability debate promotes. Specifically, we explore the association between institutional dimensions' configurations and sustainable entrepreneurial activity and sustainability impact, highlighting the interplay of institutions—particularly informal ones—in explaining our findings. Our study provides several contributions to extant research.

First, we emphasise the embeddedness of sustainable entrepreneurship within institutional structures (Hörisch et al., 2017). The sustainability debate is often framed through the lens of technological change, rooted in green growth paradigms (van den Bergh, 2001). However, this narrow focus is argued to be a primary cause of inertia in achieving genuine sustainable transformations (Stål, 2015). In contrast, we draw attention to the societal structures that underpin all business activities. Sustainable change should be understood not only as a technological but also as a cultural project (Vatn, 2020), given that the distribution of costs and benefits within a society is inherently linked to its institutional arrangements (Moreau et al., 2017).

Second, by using fsQCA methodology, we reveal internal configurations, specifically the institutional dimension's complementarity and substitution effects that stay opaque when applying typical statistical analysis (Fiss, 2011). We highlight how the normative and cultural-cognitive dimensions interact and, in combination, produce the outcomes of sustainable entrepreneurial activity and sustainability impact. Also, we show how either normative or cultural-cognitive institutional enablers can compensate for the absence of government support (regulative dimension). The distinct configurations we identify reveal that sustainable entrepreneurs perceive reality in diverse ways and rely on different institutional enablers. This nuanced understanding of institutional interactions represents a key contribution of our paper.

Third, the stronger relevance of informal institutions in guiding human choices is not a new finding since they are deeply embedded in cultural belief systems, while formal institutions underlie informal ones (North, 1990, 2005). The perception of inadequate regulative support may not reflect an actual lack of support but rather a disconnect between sustainable entrepreneurs' expectations and their perception of the effectiveness or accessibility of government programs. For these entrepreneurs, existing support mechanisms may be seen as insufficient, overly bureaucratic, or misaligned with the specific needs of sustainability-focused businesses.

More significantly, this perception could suggest that sustainable entrepreneurs require more than government support; they need a fundamental restructuring of incentive systems that currently fail to motivate their efforts (Pacheco et al., 2010). As Vatn (2010) pointed out, transacting over environmental amenities is inherently costly, making state intervention essential for fostering markets for environmental services. In line with this, Watson et al. (2023) offer innovative policy recommendations to genuinely support

sustainable entrepreneurs—focusing on replicating sustainability-oriented innovations rather than merely scaling enterprises and reorienting policies to track and optimise sustainability impacts.

Fourth, previous research has highlighted the role of informal institutions, especially in the value-laden domain of sustainability (Stål, 2015). While for traditional entrepreneurship, entrepreneurial culture (Stephan et al., 2015), performance (Autio et al., 2013), and high-growth orientation (Colombelli et al., 2016; Szerb et al., 2019) were identified as important enablers, the story changes for sustainable entrepreneurship. Previous research showed that tight cultural contexts condition sustainability adoption in businesses (Caprar & Neville, 2012). Our interview data aligns with that, and sustainable entrepreneurs draw on social capital (Putnam, 1993) and strong community involvement (Bacq et al., 2022).

Fifth, we highlight the central role of the cultural-cognitive dimension, which emerges as the most significant factor, appearing in three out of the four identified configurations. While the analysis of formal and informal institutional factors is increasingly studied, for instance, through the influence of government support (Zhao et al., 2021) or social norms (Meek et al., 2010) and values (Hechavarría, 2016), few studies have focused on individual entrepreneurial responses within similar societal constraints. Precisely, the cultural-cognitive dimension could have explanatory power regarding the internal qualities guiding sustainability action, such as cognitive, socio-emotional, and relational processes (Wamsler et al., 2021). Sustainable entrepreneurs could perceive opportunities depending on the mentioned processes and the positive perception of knowledge and skills in the environment (Audretsch et al., 2021). Also, precisely the interplay of the normative and cultural-cognitive dimensions is a key finding since sustainability action often depends on internal processes such as commitment, passion, knowledge, and self-efficacy related to sustainability issues (Sass et al., 2020) in combination with the external validation of such behaviour through normative acceptance (e.g. recycling as a socially accepted practice) (Castro-Santa et al., 2023).

5.1 Practical implications

Supporting such actors in society who overcome the long-prevailing inertia towards sustainability action is a crucial task of governments and policymakers. Policies embracing the "fourth wave" of entrepreneurs that act upon social and environmental issues (Volkmann et al., 2021) while critically questioning the growth-driven entrepreneurship model and its contribution to the public good (Vedula et al., 2022a, 2022b) are overdue. In this article, we shed light on the interplay of institutional dimensions shaping sustainable entrepreneurship, increasing comprehension of how such could be strengthened.

Governments need to acknowledge the economy's embeddedness in societal structures (Moreau et al., 2017). Effective state intervention should prioritise supporting firms that enhance collective well-being over shareholder value. This involves transforming business dynamics through expanded public ownership, community investments, and inclusive governance structures that empower workers and environmental representatives alongside shareholders (Vatn, 2020).

Second, individuals increasingly perceive themselves as consumers rather than citizens. This is because neoliberalism understands societal progress as only achievable through economic growth and free markets. Economic structures, therefore, secure favourable conditions for large corporations while positioning the market above society (Wittneben et al., 2012). Sustainability challenges become a market issue, and citizens' power in shaping their futures diminishes. In the words of Ingebrigtsen and Jakobsen (2007), culture expressed through social norms would have lost its ability to constructively interact with the economy and its power to require a shift in its value basis through processes of creativity and innovation.

Social norms, through social capital, are an important factor in creating economies in the public interest (Putnam, 1993) and give powerful guidance for people's behaviour in collective action problems (Ostrom, 2000). To unleash the power of social norms, the sustainability debate needs to be politicised to engage citizens and make them understand their responsibility for driving social change (Pansera et al., 2021). Initiatives of co-creation, collective problem-solving for sustainable action, and political education can be useful in fostering this understanding. Policymakers need to give space for the public to be involved to fully unleash the power of social norms and overcome the generally felt inertia—the feeling of not knowing how to contribute to sustainable change while doubting the power of the individual.

Third, the cultural-cognitive dimensions showed that sustainable entrepreneurs create opportunities by drawing on their own experience and knowledge of sustainability issues while seeing a market demand.

There is a need to elaborate fully new skill sets for sustainable entrepreneurs, including multidisciplinary knowledge and complex system-thinking skills, to be able to address interdependent sustainability questions (Hägg & Gabrielsson, 2020; Obrecht, 2016). Such educational programs would prepare entrepreneurs and the business world to create more holistic and resilient firms with genuine sustainability impact.

5.2 Limitations and future research

Our study is not free of limitations from which we derive possibilities for future research. First, although we based our research on a relatively small sample size, we complemented our data with in-depth interviews to give more profound insights. However, future research could expand data collection. This would possibly allow for identifying different patterns in the data and, for instance, examining whether sustainable entrepreneurs from distinct sectors experience institutional influences differently. This could be shown through stronger institutional support of businesses from a certain sector with higher societal acceptance.

Second, although cross-sectional studies promise new insights into the institutional influences on sustainable entrepreneurs, the consideration of the aspect of time through a longitudinal study could reveal how institutional dynamics change throughout the entrepreneurial process. In other words, analysing whether sustainable entrepreneurs are influenced by different institutional dimensions throughout their entrepreneurial process would be interesting. For instance, social norms could be very relevant at inception, while government support could be important in later stages of the entrepreneurial process, just as found for traditional entrepreneurship (Alvarez et al., 2025).

Third, our methodology allowed us to analyse different configurations of institutional influences, including the two outcomes of sustainable entrepreneurial activity and sustainability impact. It could also be interesting to split the sample size analysing whether configurations change for recently created startups and already established ones (older than 5 years).

Fourth, our study is one of the few that considers the cultural-cognitive dimension in the context of sustainability, revealing how sustainable entrepreneurs interpret their environment and how their actions respond to these interpretations. However, sustainable entrepreneurs could also be changing existing institutions. This could be measured through fully new institutional dimensions explaining entrepreneurs' social and environmental activism to change the existing status quo.

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Data availability The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declarations

Competing interests The authors declare that there are no competing interests.

Appendix 1: Interview questions

Business Activity & Motivation

1. What is your business about?
2. How do you relate your business activity to social and/or environmental sustainability?
3. What was your motivation to start the business?

    a. With family and friends, do you discuss sustainability and environmental issues? Could you provide some specific examples of these conversations?
    b. Are you and your family/friends actively engaging in eco-friendly initiatives (e.g., recycling, meat-reducing diet, avoiding air transport, donations to charitable projects)?
    c. Are you involved in any environmental activism/social or voluntary projects promoting social or environmental sustainability? If so, could you share details about the projects you participate in and your motivations for doing so?

Experiences of running a business

4. Could you describe the first moment you decided to create a business? What gave you the idea and what made you confident about taking this step?
5. Could you briefly describe this early process of creating the firm?
6. How did you realize you had the ability, skills and knowledge to run your own business? How did you realize you had the capacity to act upon social or ecological problems?
7. Can you share any personal or professional values that drove you to focus on sustainability in your venture?
8. Do you think turning new ideas into businesses is an admired career path in Catalonia or in your community?
9. Do you think acting upon social or ecological problems is well seen in Catalonia or in your community?
10. What do your parents and friends think about you being a sustainable entrepreneur?
11. Do you think being a sustainable entrepreneur is well-recognized in society?
12. Were there any industry ethics, societal expectations, or stakeholder expectations regarding sustainability that influenced your entrepreneurial journey?
13. Have entrepreneurial and/or sustainability values of Catalonia influenced you? For example, would you say in Catalonia there are favorable values towards sustainable start-ups?

Challenges and opportunities

14. What has been the main challenge throughout the process of starting your business?
15. When creating your firm, did you receive any kind of private or public financial assistance?
    a Was this financial assistance specifically dedicated to supporting green or social projects?
    b Would you say there are differences at the European, national, and regional levels when it comes to financial support for social or green projects?
16. Did you receive any kind of government support in Catalonia?
    a If so, how did they help you?
    b Would you say such government support understands the challenges and needs of sustainable entrepreneurs?
    c Is the support specifically designed for sustainable entrepreneurs?
    d What improvements would you suggest?

Tactics for dealing with challenges

17. Do you think fear of failure prevented you from developing your business idea earlier?
18. In the sustainability sector, there's often a fine line between genuine sustainable practices and the risk of greenwashing. Can you share how your start-up navigates this challenge and ensures that its sustainability claims are transparent and substantiated?
19. Can you think of any start-up that in your eyes practices 'greenwashing'?

Aspirations for the future

20. What are your expectations for the future regarding your business?
21. Do you expect to have (more) employees in the next year? How many?
22. What percentage do you expect to increase your income?

Firm's name
Interviewee´s data
Name & surname
Position
Profile of the Founder/s
Gender
Age
Level of Education (Bachelor/Master/High School Diploma/ PhD Degree/other)
Educational Background in Entrepreneurship or Management?
Educational Background in Sustainability?
Previous Occupation
Other occupations additional to work at Startup?
Previous Startups created?
Entrepreneurial Family Antecedents?
Profile of the Startup
Legal Form
Age of Start-Up
Sector

Appendix 2: Truth table sustainable entrepreneurial activity outcome

Regulative	Normative	Cultural-cognitive	Cases	Sustainable entrepreneurial activity	aw consist	PRI consist	SYM consist
0	1	0	26	1	0.958	0.929	0.929
0	1	1	28	1	0.958	0.931	0.940
1	1	1	32	1	0.960	0.936	0.941
1	1	0	9	0	0.947	0.891	0.891

Appendix 3: Truth table sustainable entrepreneurial activity outcome

Regulative	Normative	Cultural-cognitive	Cases	Sustainability impact	Raw consist	PRI consist	SYM consist
0	0	1	3	1	0.976	0.930	0.930
0	1	1	28	1	0.969	0.945	0.966
1	1	1	32	1	0.959	0.931	0.946
0	0	0	3	0	0.949	0.839	0.838
0	1	0	26	0	0.948	0.897	0.927
1	1	0	9	0	0.930	0.825	0.839

References

ACCIÓ. (2023). *Barcelona & Catalonia Startup Hub*. Barcelona.

Agrawal, A. (2001). Common property institutions and sustainable governance of resources. *World Development, 29*(10), 1649–1672.

Ajuntament de Barcelona. (2017). The impetus plan for the social and solidarity economy. Barcelona. Available at: https://base.socioeco.org/docs/impetusplan-sse-eng_web.pdf. Accessed 20 June 2024.

Ajuntament de Barcelona. (2021). Barcelona Green Deal: A new economic agenda for Barcelona 2030. Barcelona. Available at: https://ajuntament.barcelona.cat/premsa/wp-content/uploads/2021/04/GreenDeal_abril2021-3.pdf. Accessed 10 Feb 2024.

Álvarez, C., Urbano, D., & Amorós, J. E. (2014). GEM research: Achievements and challenges. *Small Business Economics, 42*(3), 445–465.

Alvarez, C., Lopez, T., & Urbano, D. (2025). Do institutional dimensions matter at different stages of the entrepreneurial process? A multi-country study. *Small Business Economics, 64*(2), 353–381.

Audretsch, D. B., & Belitski, M. (2017). Entrepreneurial ecosystems in cities: Establishing the framework conditions. *Journal of Technology Transfer, 42*(5), 1030–1051.

Audretsch, D. B., Belitski, M., & Cherkas, N. (2021). Entrepreneurial ecosystems in cities: The role of institutions. *PLoS ONE, 16*(3), e0247609–e0247609.

Audretsch, D. B., Belitski, M., Eichler, G. M., et al. (2024). Entrepreneurial ecosystems, institutional quality, and the unexpected role of the sustainability orientation of entrepreneurs. *Small Business Economics, 62*, 503–522.

Autio, E., Pathak, S., & Wennberg, K. (2013). Consequences of cultural practices for entrepreneurial behaviors. *Journal of International Business Studies, 44*(4), 334–362.

Aversa, P., Furnari, S., & Haefliger, S. (2015). Business model configurations and performance: A qualitative comparative analysis in Formula One racing, 2005–2013. *Industrial and Corporate Change, 24*, 655–676.

Bacq, S., Hertel, C., & Lumpkin, G. T. (2022). Communities at the nexus of entrepreneurship and societal impact: A cross-disciplinary literature review. *Journal of Business Venturing, 37*(5), Article 106231.

Baumol, W. J. (1990). Entrepreneurship: Productive, unproductive, and destructive. *The Journal of Political Economy, 98*(5), 893–921.

Baumol, W. J., & Strom, R. J. (2007). Entrepreneurship and economic growth. *Strategic Entrepreneurship Journal, 1*(3–4), 233–237.

Belz, F. M., & Binder, J. K. (2017). Sustainable entrepreneurship: A convergent process model. *Business Strategy and the Environment, 26*(1), 1–17.

Bischoff, K. (2021). A study on the perceived strength of sustainable entrepreneurial ecosystems on the dimensions of stakeholder theory and culture. *Small Business Economics, 56*(3), 1121–1140.

Boffa, D., Prencipe, A., Papa, A., et al. (2023) Boosting circular economy via the b-corporation roads. The effect of the entrepreneurial culture and exogenous factors on sustainability performance. *International Entrepreneurship and Management Journal, 19*(2), 523–561.

Bradley, S. W., & Klein, P. (2016). Institutions, economic freedom, and entrepreneurship: The contribution of management scholarship. *Academy of Management Perspectives, 30*(3), 211–221.

Bryman, A. (2012). *Social Research Methods* (4th ed). Oxford University Press.

Burt, R. S. (2000). The Network Structure Of Social Capital. *Research in Organizational Behavior, 22*, 345–423.

Busenitz, L. W., Gomez, C., & Spencer, J. W. (2000). Country institutional profiles: Unlocking entrepreneurial phenomena. *Academy of Management Journal, 43*(5), 994–1003.

Caprar, D. V., & Neville, B. A. (2012). "Norming" and "Conforming": Integrating cultural and institutional explanations for sustainability adoption in business. *Journal of Business Ethics, 110*(2), 231–245.

Castro-Santa, J., Drews, S., & van den Bergh, J. (2023). Nudging low-carbon consumption through advertising and social norms. *Journal of Behavioral and Experimental Economics, 102*, Article 101956.

CERES. (2021). Consulta sobre aspectes relacionats amb el medi ambient - Seguiment d'indicadors de sostenibilitat. Available at: https://xarxanet.org/sites/default/files/informe-tis-indicadors-sostenibilitat-2015.pdf. Accessed 15 Aug 2024.

Chiu, C. Y., Gelfand, M. J., Yamagishi, T., et al. (2010). Intersubjective culture: The role of intersubjective perceptions in cross-cultural research. *Perspectives on Psychological Science, 5*(4), 482–493.

Cialdini, R. B., Reno, R. R., & Kallgren, C. A. (1990). A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology, 58*(6), 1015–1026.

Cohen, B., & Winn, M. I. (2007). Market imperfections, opportunity and sustainable entrepreneurship. *Journal of Business Venturing, 22*(1), 29–49.

Cole, D. H., Epstein, G., & McGinnis, M. D. (2014). Digging deeper into Hardin's pasture: The complex institutional structure of 'the tragedy of the commons.' *Journal of Institutional Economics, 10*(3), 353–369.

Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology, 94*, 95–120.

Coleman, J. S. (1990). *Foundations of Social Theory / James S. Coleman*. The Belknap Press of Harvard University Press.

Coll-Martínez, E., Jové-Llopis, E., & Teruel, M. (2022). The city of start-ups: Location determinants of start-ups in emergent industries in Barcelona. *Growth and Change, 53*(2), 972–1007.

Colombelli, A., Krafft, J., & Vivarelli, M. (2016). To be born is not enough: The key role of innovative start-ups. *Small Business Economics, 47*(2), 277–291.

Davidsson, P., Recker, J., & von Briel, F. (2020). External enablement of new venture creation: A framework. *Academy of Management Perspectives, 34*(3), 311–332.

Davies, I. A., & Chambers, L. (2018). Integrating hybridity and business model theory in sustainable entrepreneurship. *Journal of Cleaner Production, 177*, 378–386.

Dinas, E. (2012). Left and right in the Basque Country and Catalonia: The meaning of ideology in a nationalist context. *South European Society & Politics, 17*(3), 467–485.

Dwivedi, P., Joshi, A., & Misangyi, V. F. (2018). Gender-inclusive gatekeeping: How (mostly male) predecessors influence the success of female CEOs. *Academy of Management Journal, 61*(2), 379–404.

Eide, A. E., Saether, E. A., & Aspelund, A. (2020). An investigation of leaders' motivation, intellectual leadership, and sustainability strategy in relation to Norwegian manufacturers' performance. *Journal of Cleaner Production, 254*, Article 120053.

Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review, 14*(4), 532–550.

Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *The Academy of Management Journal, 50*(1), 25–32.

Eller, F. J., Gielnik, M. M., Wimmer, H., et al. (2020). Identifying business opportunities for sustainable development: Longitudinal and experimental evidence contributing to the field of sustainable entrepreneurship. *Business Strategy and the Environment, 29*(3), 1387–1403.

Essiz, O., Mandrik, C., Essiz, O., et al. (2021). Intergenerational influence on sustainable consumer attitudes and behaviors: Roles of family communication and peer influence in environmental consumer socialization. *Psychology & Marketing, 39*(1), 5–26.

Estrin, S., & Mickiewicz, T. (2012). Shadow economy and entrepreneurial entry. *Review of Development Economics, 16*(4), 559–578.

European Committee of the Regions (2023) Three European regions awarded for their innovative and sustainable entrepreneurial strategies to overcome the COVID-19 pandemic. Available at: https://cor.europa.eu/en/news/Pages/eer-award.aspx. Accessed 23 Mar 2023.

Fichter, K., & Tiemann, I. (2020). Impacts of promoting sustainable entrepreneurship in generic business plan competitions. *Journal of Cleaner Production, 267*, Article 122076.

Fichter, K., Lüdeke-Freund, F., Schaltegger, S., et al. (2023). Sustainability impact assessment of new ventures: An emerging field of research. *Journal of Cleaner Production, 384*, Article 135452.

Fiss, P. C. (2007). A set-theoretic approach to organizational configurations. *Academy of Management Review, 32*(4), 1180–1198.

Fiss, P. C. (2011). Building Better Causal Theories: A Fuzzy Set Approach to Typologies in Organization Research. *Academy of Management Journal, 54*(2), 393–420.

Fiss, P. C., Marx, A., & Cambré, B. (2013). Chapter 1 Configurational Theory and Methods in Organizational Research: Introduction. In P. C. Fiss, B. Cambré, & A. Marx (Eds.), *Configurational Theory and Methods in Organizational Research* (pp. 1–22). Emerald Group Publishing Limited.

Frese, M. (2015). Cultural practices, norms, and values. *Journal of Cross-Cultural Psychology, 46*(10), 1327–1330.

Furnari, S., Crilly, D., Misangyi, V. F., et al. (2021). Capturing causal complexity: Heuristics for configurational theorizing. *Academy of Management Review, 46*(4), 778–799.

Gasbarro, F., Rizzi, F., & Frey, M. (2018). Sustainable institutional entrepreneurship in practice: Insights from SMEs in the clean energy sector in Tuscany (Italy). *International Journal of Entrepreneurial Behaviour & Research, 24*(2), 476–498.

Gast, J., Gundolf, K., & Cesinger, B. (2017). Doing business in a green way: A systematic review of the ecological sustainability entrepreneurship literature and future research directions. *Journal of Cleaner Production, 147*, 44–56.

Global Entrepreneurship Monitor (GEM). (2012). National Expert Survey (NES) 2012: Entrepreneurial Framework Conditions. Available at: https://www.gemconsortium.org/data/sets?id=nes. Accessed 25 June 2024.

Goodman, L. A. (1961). Snowball sampling. *The Annals of Mathematical Statistics, 32*(1), 148–170.

Greckhamer, T., Misangyi, V. F., & Fiss, P. C. (2013). Chapter 3 The Two QCAs: From a Small-N to a Large-N Set Theoretic Approach. In P. C. Fiss, B. Cambré, & A. Marx (Eds.), *Configurational Theory and Methods in Organizational Research* (pp. 49–75). Emerald Group Publishing Limited.

Hafer, R. W., & Jones, G. (2015). Are entrepreneurship and cognitive skills related? *Some International Evidence. Small Business Economics, 44*(2), 283–298.

Hägg, G., & Gabrielsson, J. (2020). A systematic literature review of the evolution of pedagogy in entrepreneurial education research. *International Journal of Entrepreneurial Behaviour & Research, 26*(5), 829–861.

Hall, J. K., Daneke, G. A., & Lenox, M. J. (2010). Sustainable development and entrepreneurship: Past contributions and future directions. *Journal of Business Venturing, 25*(5), 439–448.

Hall, P. A., & Taylor, R. C. R. (1996). Political science and the hree new institutionalisms. *Political Studies, 44*(5), 936–957.

Hanohov, R., & Baldacchino, L. (2018). Opportunity recognition in sustainable entrepreneurship: An exploratory study. *International Journal of Entrepreneurial Behavior & Research, 24*(2), 333–358.

Hawkins, I. W., Balsam, A. L., & Graves, D. (2015). The factors associated with the enduring pro-environmental behaviors of registered dietitians and the relationship between personal and practice behaviors: A qualitative study. *Journal of Hunger & Environmental Nutrition, 10*(1), 72–91.

He, J., Nazari, M., Zhang, Y., et al. (2020). Opportunity-based entrepreneurship and environmental quality of sustainable development: A resource and institutional perspective. *Journal of Cleaner Production, 256*(1), Article 120390.

Hechavarría, D. M. (2016). The impact of culture on national prevalence rates of social and commercial entrepreneurship. *International Entrepreneurship and Management Journal, 12*(4), 1025–1052.

Henry, M., Bauwens, T., Hekkert, M., et al. (2020). A typology of circular start-ups: An Analysis of 128 circular business models. *Journal of Cleaner Production, 245*, Article 118528.

Henrysson, M., & Nuur, C. (2021). The role of institutions in creating circular economy pathways for regional development. *The Journal of Environment & Development, 30*(2), 149–171.

Hörisch, J., Kollat, J., & Brieger, S. A. (2017). What influences environmental entrepreneurship? A multilevel analysis of the determinants of entrepreneurs' environmental orientation. *Small Business Economics, 48*(1), 47–69.

Ingebrigtsen, S., & Jakobsen, O. (2007). *Circulation Economics*. Peter Lang Verlag.

Kanda, W., Geissdoerfer, M., & Hjelm, O. (2021). From circular business models to circular business ecosystems. *Business Strategy and the Environment, 30*(6), 2814–2829.

Khlystova, O., Kalyuzhnova, Y., & Belitski, M. (2022). Towards the regional aspects of institutional trust and entrepreneurial ecosystems. *International Journal of Entrepreneurial Behaviour and Research*. https://doi.org/10.1108/IJEBR-02-2022-0108

Kim, S. H., & Seock, Y.-K. (2019). The roles of values and social norm on personal norms and pro-environmentally friendly apparel product purchasing behavior: The mediating role of personal norms. *Journal of Retailing and Consumer Services, 51*, 83–90.

Kimjeon, J., & Davidsson, P. (2021). External enablers of entrepreneurship: A review and agenda for accumulation of strategically actionable knowledge. *Entrepreneurship Theory and Practice, 46*(3), 643–687.

Kraus, S., Ribeiro-Soriano, D., & Schüssler, M. (2018). Fuzzy-set qualitative comparative analysis (fsQCA) in entrepreneurship and innovation research – the rise of a method. *International Entrepreneurship and Management Journal, 14*(1), 15–33.

Krueger, N., Hansen, D. J., Michl, T., et al. (2011). Thinking 'sustainably': The role of intentions, cognitions, and emotions in understanding new domains of entrepreneurship. *Social and Sustainable Entrepreneurship, 13*, 275–309.

Leppänen, P., George, G., & Alexy, O. (2023). When do novel business models lead to high firm performance? A configurational approach to value drivers, competitive strategy, and firm environment. *Academy of Management Journal, 66*(1), 164–194.

Levie, J., & Autio, E. (2008). A theoretical grounding and test of the GEM model. *Small Business Economics, 31*(3), 235–263.

Maaßen, C., & Urbano, D. (2024). Institutional environments for circular start-ups: Insights from an entrepreneurial European region. *International Small Business Journal, 42*(4, SI), 446–479.

Maaßen, C., Rovira, R., & Urbano, D. (2023). A process model for sustainable entrepreneurship: Evidence from a highly entrepreneurial European region. *Journal of Social Entrepreneurship*, 1–32. https://doi.org/10.1080/19420676.2023.2221262

Marshall, M. N. (1996). Sampling for qualitative research. *Family Practice, 13*(6), 522–526.

Meek, W. R., Pacheco, D. F., & York, J. G. (2010). The impact of social norms on entrepreneurial action: Evidence from the environmental entrepreneurship context. *Journal of Business Venturing, 25*(5), 493–509.

Meurer, M. M. (2022). Configurations of optimal identity distinctiveness among entrepreneurs as drivers of legitimacy. *Academy of Management Proceedings, 1*, 15173.

Moreau, V., Sahakian, M., van Griethuysen, P., et al. (2017). Coming full circle: Why social and institutional dimensions matter for the Circular Economy. *Journal of Industrial Ecology, 21*(3), 497–506.

North, D. C. (1990). *Institutions, Institutional Change and Economic Performance*. Cambridge University Press.

North, D. C. (2005). *Understanding the Process of Economic Change*. Princeton University Press.

O3sac. (2018). Baròmetre Ambiental 2018. Available at: http://mediambient.gencat.cat/web/.content/home/ambits_dactuacio/educacio_i_sostenibilitat/tercer_sector_ambiental/recursos/docs/baro/BarometreAmbiental2018.pdf. Accessed 30 Oct 2020.

Oana, I.-E., Schneider, C. Q., & Thomann, E. (2021). *Qualitative Comparative Analysis Using R: A Beginner's Guide*. Cambridge University Press.

Obrecht, J.-J. (2016). Sustainable entrepreneurship education: A new field for research in step with the 'effectual entrepreneur.' *International Journal of Entrepreneurship and Small Business, 29*(1), 83–102.

Observatorio del Emprendimiento de España: Global Entrepreneurship Monitor (2023) *Informe GEM España 2022–2023*.

Ostrom, E. (2000). Collective action and the evolution of social norms. *Journal of Economic Perspectives, 14*(3), 137–158.

Pacheco, D. F., Dean, T. J., & Payne, D. S. (2010). Escaping the green prison: Entrepreneurship and the creation of opportunities for sustainable development. *Journal of Business Venturing, 25*(5), 464–480.

Pansera, M., Genovese, A., & Ripa, M. (2021). Politicising Circular Economy: What can we learn from Responsible Innovation? *Journal of Responsible Innovation, 8*(3), 471–477.

Parrish, B. D. (2010). Sustainability-driven entrepreneurship: Principles of organization design. *Journal of Business Venturing, 25*(5), 510–523.

Pathak, S., Muralidharan, E., Saurav, P., et al. (2016). Informal institutions and their comparative influences on social and commercial entrepreneurship: The role of in-group collectivism and interpersonal trust. *Journal of Small Business Management, 54*, 168–188.

Patzelt, H., & Shepherd, D. A. (2011). Recognizing opportunities for sustainable development. *Entrepreneurship Theory and Practice, 35*(4), 631–652.

Pfattheicher, S., Sassenrath, C., & Schindler, S. (2015). Feelings for the suffering of others and the environment: Compassion fosters proenvironmental tendencies. *Environment and Behavior, 48*(7), 929–945.

Powell, W. W., & DiMaggio, P. (1991). *The New Institutionalism in Organizational Analysis*. The University of Chicago Press.

Putnam, R. (1993). The thriving community, social capital, and public life. *World Economy and International Relations, 4*, 77–86.

Ragin, C. C. (2006). Set relations in social research: Evaluating their consistency and coverage. *Political Analysis, 14*(3), 291–310.

Ragin, C. C. (2008). *Redesigning Social Inquiry: Fuzzy Sets and Beyond*. University of Chicago Press.

Rodrik, D. (2003). *In Search of Prosperity Analytic Narratives on Economic Growth / Edited by Dani Rodrik*. Princeton University Press.

Sahasranamam, S., & Nandakumar, M. K. (2020). Individual capital and social entrepreneurship: Role of formal institutions. *Journal of Business Research, 107*, 104–117.

Sass, W., Boeve-de Pauw, J., Olsson, D., et al. (2020). Redefining action competence: The case of sustainable development. *The Journal of Environmental Education, 51*(4), 292–305.

Schaltegger, S., Beckmann, M., & Hockerts, K. (2018). Sustainable entrepreneurship: Creating environmental solutions in light of planetary boundaries. *International Journal of Entrepreneurial Venturing, 10*(1), 1.

Schlager, E., & Ostrom, E. (1992). Property-Rights regimes and natural resources : A conceptual analysis. *Land Economics, 68*(3), 249–262.

Scott, W. R. (1995). *Institutions and organizations: Ideas, interests, and identities* (Fourth). SAGE Publications.

Segura i Mas, A., & Barbé i Pou, E. (2011). Catalonia: From industrialization to the present day. In D. Keown (Ed.) *A Companion to Catalan Culture* (pp. 71–96). Boydell & Brewer.

Spanuth, A., & Urbano, D. (2024). Exploring social enterprise legitimacy within ecosystems from an institutional approach: A systematic literature review and research agenda. *International Journal of Management Reviews, 26*(2), 211–231.

Sparkman, G., & Walton, G. M. (2017). Dynamic norms promote sustainable behavior, even if it is counternormative. *Psychological Science, 28*(11), 1663–1674.

Stål, H. I. (2015). Inertia and change related to sustainability – An institutional approach. *Journal of Cleaner Production, 99*, 354–365.

Steinz, H. J., Van Rijnsoever, F. J., Nauta, F., et al. (2016). How to green the red dragon: A start-ups' little helper for sustainable development in China. *Business Strategy and the Environment., 25*(8), 593–608.

Stephan, U., Uhlaner, L. M., Stride, C., et al. (2015). Institutions and social entrepreneurship: The role of institutional voids, institutional support, and institutional

configurations. *Journal of International Business Studies., 46*(3), 308–331.

Sud, M., VanSandt, C. V., & Baugous, A. M. (2009). Social entrepreneurship: The role of institutions. *Journal of Business Ethics* 85 (14th Annual International Conference on Promoting Business Ethics), 201–216.

Szerb, L., Lafuente, E., Horváth, K., et al. (2019). The relevance of quantity and quality entrepreneurship for regional performance: The moderating role of the entrepreneurial ecosystem. *Regional Studies, 53*(9), 1308–1320.

The Guardian. (2018). Everton and Barcelona take pioneering lead towards equality. Available at: https://www.theguardian.com/football/2018/jul/19/everton-barcelona-lead-towards-equality-whatif. Accessed 30 Sept 2024.

Urbano, D., Aparicio, S., & Audretsch, D. (2019). Twenty-five years of research on institutions, entrepreneurship, and economic growth: What has been learned? *Small Business Economics, 53*(1), 21–49.

van den Bergh, J. (2001). Ecological economics: Themes, approaches, and differences with environmental economics. *Regional Environmental Change, 2*(1), 13–23.

Vatn, A. (2010). An institutional analysis of payments for environmental services. *Ecological Economics, 69*(6), 1245–1252.

Vatn, A. (2020). Institutions for sustainability—Towards an expanded research program for ecological economics. *Ecological Economics, 168*, Article 106507.

Vedula, S., Doblinger, C., Pacheco, D., et al. (2022a). Entrepreneurship for the public good: A review, critique, and path forward for social and environmental entrepreneurship resesarch. *Academy of Management Annals, 16*(1), 391–425.

Vedula, S., York, J. G., Conger, M., et al. (2022b). Green to gone? Regional institutional logics and firm survival in moral markets. *Organization Science, 33*(6), 2274–2299.

Verheul, I., Wennekers, S., Audretsch, D., et al. (2002). An Eclectic Theory of Entrepreneurship: Policies, Institutions and Culture BT - Entrepreneurship: Determinants and Policy in a European-US Comparison. In: Audretsch D, Thurik R, Verheul I, et al. (eds) (pp. 11–81). Springer US.

Volkmann, C., Fichter, K., Klofsten, M., et al. (2021). Sustainable entrepreneurial ecosystems: An emerging field of research. *Small Business Economics, 56*(3), 1047–1055.

Walsh, Z., Böhme, J., Lavelle, B. D., et al. (2020). Transformative education: Towards a relational, justice-oriented approach to sustainability. *International Journal of Sustainability in Higher Education, 21*(7), 1587–1606.

Wamsler, C., Osberg, G., Osika, W., et al. (2021). Linking internal and external transformation for sustainability and climate action: Towards a new research and policy agenda. *Global Environmental Change, 71*, Article 102373.

Wang, X. X., Javaid, M. U., Salameh, A. A., et al. (2022). Interplay among institutional actors for sustainable economic development—Role of green policies, ecoprenuership, and green technological innovation. *Frontiers in Environmental Science, 10*. https://doi.org/10.3389/fenvs.2022.956824

Wang, H., Zhao, T., Cooper, S. Y., et al. (2023). Effective policy mixes in entrepreneurial ecosystems: A configurational analysis in China. *Small Business Economics, 60*(4), 1509–1542.

Wasserbaur, R., Sakao, T., Milios, L., et al. (2022). Interactions of governmental policies and business models for a circular economy: A systematic literature review. *Journal of Cleaner Production, 337*, Article 130329.

Watson, R., Nielsen, K. R., Wilson, H. N., et al. (2023). Policy for sustainable entrepreneurship: A crowdsourced framework. *Journal of Cleaner Production, 283*, Article 135234.

Welter, F. (2012). Determinants of entrepreneurship: Institutional factors. Prepared for the OECD.

Wesseh, P. K. J., Lin, B., Zhang, Y., et al. (2024). Sustainable entrepreneurship: When does environmental compliance improve corporate performance? *Business Strategy and the Environment, 33*(4), 3203–3221.

White, K., Simpson, B., White, K., et al. (2013). When do (and don't) normative appeals influence sustainable consumer behaviors? *Journal of Marketing, 77*(2), 78–95.

Wittneben, B. B. F., Okereke, C., Banerjee, S. B., et al. (2012). Climate change and the emergence of new organizational landscapes. *Organization Studies, 33*(11), 1431–1450.

Yin, R. K. (2009). *Case Study Research Design and Methods* (4th ed.). Sage Publications.

Zahedi, S., Batista-Foguet, J. M., & van Wunnik, L. (2019). Exploring the public's willingness to reduce air pollution and greenhouse gas emissions from private road transport in Catalonia. *Science of the Total Environment, 646*, 850–861.

Zhao, M., Liu, J., & Shu, C. (2021). Pursuing sustainable development through green entrepreneurship: An institutional perspective. *Business Strategy and the Environment, 30*(8), 4281–4296.

Zhou, W., Jiang, M., & Li, H. (2023). Explaining academic entrepreneurial motivation in China: The role of regional policy, organizational support, and individual characteristics. *Small Business Economics, 61*(3), 1357–1378.