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Authors	McGrath, Helen;Tanner, Sean;Palo, Teea;Alton, David;Drummond, Conor;Ryan, Annmarie
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Research paper

Leveraging sustainability tensions: A framework for understanding multi-level dynamics in small entrepreneurial firms☆

Helen McGrath [a], Sean Tanner [a], Teea Palo [b,*], David Alton [a], Conor Drummond [a], Annmarie Ryan [c]

[a] Cork University Business School, University College Cork, Ireland
[b] University of Edinburgh Business School, Scotland, UK
[c] Department of Management and Marketing, Kemmy Business School, University of Limerick, Ireland

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ABSTRACT

Sustainability creates tensions for small entrepreneurial firms yet understanding of how these firms navigate such tensions within business networks remains limited. Drawing from an Industrial Marketing and Purchasing (IMP) perspective, this paper explores how small entrepreneurial firms experience and navigate sustainability tensions. Using in-depth interviews with 32 craft food and drink enterprises across Ireland and Scotland, we develop a conceptual framework revealing how sustainability and network paradoxes become knotted in resource-constrained entrepreneurial contexts. Our findings identify four novel relational sustainability tensions: Values vs. Commerciality, Legitimacy vs. Authenticity, Competition vs. Collaboration, and Fidelity to Craft vs. Scaled Production. Rather than viewing these tensions solely as constraints, we demonstrate that they can be actively leveraged, functioning simultaneously as catalysts for innovation, collaboration, and competitive advantage. Three network-level mechanisms enable this leveraging: circular innovation emerging from environmental constraints, sustainability certification as strategic asset, and collaborative sustainability networks. We extend paradox theory by revealing leverage as a third response beyond resolution and acceptance, advance IMP scholarship by demonstrating how sustainability tensions catalyse novel network configurations, and contribute to sustainability entrepreneurship by showing how resource constraints become sources of competitive advantage. Implications for entrepreneurial practice and policy are discussed. We propose a research agenda for examining how leveraging capabilities develop over time and across contexts.

1. Introduction

Sustainability has emerged as a critical strategic imperative for businesses worldwide, driven by government regulations, customer demand, and supplier performance pressures (Voola, Bandyopadhyay, Voola, Ray, & Carlson, 2022). Dominant discourse frames sustainability through Elkington's (1998) triple bottom line, at times positioning sustainability as a 'win-win' scenario, where environmental and social initiatives enhance competitiveness and financial performance (Karki, Bennett, & Mishra, 2021; Sharma, Iyer, Mehrotra, & Krishnan, 2010). This 'win-win' framing, however, does not fully account for the interconnected nature of firm action. Firms operate within complex interdependent networks where multiple actors coordinate resources and activities across relationships (Ford, Gadde, Håkansson, & Snehota, 2003; Håkansson & Snehota, 1989). When sustainability enters these network dynamics, new coordination challenges emerge as actors must align economic, environmental, and social considerations simultaneously (Harrison, Prenkert, Hasche, & Carlborg, 2023; Tura, Keränen, & Patala, 2019).

Emerging research reveals that pursuing environmental, social and economic goals simultaneously can create tensions, particularly within complex business networks (Goworek et al., 2020; Manzhynski & Biedenbach, 2023; Richards, Hurst, Messner, & O'Connor, 2021). We adopt an Industrial Marketing and Purchasing (IMP) perspective to examine these tensions, recognising that while organisational interdependencies created through networks can support sustainable

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* Corresponding author.
E-mail addresses: helen.mcgrath@ucc.ie (H. McGrath), sean.tanner@ucc.ie (S. Tanner), teea.palo@ed.ac.uk (T. Palo), david.alton@ucc.ie (D. Alton), conor.drummond@ucc.ie (C. Drummond), annmarie.ryan@ul.ie (A. Ryan).

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network development (Harrison et al., 2023), sustainability transitions can give rise to conflicts within networks (Tura et al., 2019). For small entrepreneurial firms, the focus of this study, sustainability represents both an opportunity and a challenge (Ćorić, Lučić, Brečić, Šević, & Šević, 2020; La Rocca & Dal Molin, 2024). In interaction, their limited power and resources constrain their ability to influence network-level sustainability practices (Blome, Paulraj, Preuss, & Roehrich, 2023). Yet they remain dependent on network relationships for accessing markets, resources, and legitimacy (Chowdhury, Gruber, & Zolkiewski, 2016).

Despite growing recognition of sustainability tensions, three critical gaps limit our understanding of how resource-constrained enterprises navigate these challenges. First, while existing research examines sustainability tensions within organisations (Van der Byl & Slawinski, 2015) and networks (Tura et al., 2019), how these tensions operate across multiple organisational levels, individual firms, network relationships, and macro-environmental contexts, remains underexplored. Second, most studies examine sustainability tensions in larger organisations (Van der Byl & Slawinski, 2015) or focus on entrepreneurial sustainability broadly (Ćorić et al., 2020; La Rocca & Dal Molin, 2024), creating calls for empirical investigation specifically addressing how smaller enterprises experience and manage such tensions within networks (Blome et al., 2023; Rudawska, 2019). Third, current literature treats sustainability tensions primarily as problems to be solved rather than examining whether and how they might become catalysts for collaborative development (Brown et al., 2024; Manzhynski & Biedenbach, 2023). Research has yet to examine how tensions themselves might drive collaborative and innovative responses, despite some acknowledgement of collaboration's potential in sustainability contexts (Annosi, Brunetta, Bimbo, & Kostoula, 2021; Santos, Martins, Amorim, & Almada-Lobo, 2021).

This paper addresses these gaps by taking the alternative view that reconceptualises tensions not as barriers to be eliminated, but as generative dynamics shaping network evolution and collaborative practices. We address two research questions: 1) How do small entrepreneurial firms experience and navigate sustainability tensions within their business networks? 2) How can these tensions be leveraged to shape sustainable development? We adopt an exploratory qualitative approach, drawing on data from 32 in-depth interviews with Irish and Scottish craft food and drink (CF&D) enterprises. This context is particularly valuable because craft food producers often begin with strong values-based motivations that may conflict with commercial realities (Scott Morton & Podolny, 2002), operate within heritage buildings that create infrastructure constraints, and face mounting pressures from multiple stakeholders (Govindan, 2018; Richards et al., 2021). The food industry provides an ideal setting as production and consumption intersect to influence social, environmental and economic issues, whilst current production rates do not mirror consumption growth, creating inherent tensions in pursuing triple bottom line approaches (Pohlmann, Scavarda, Alves, & Korzenowski, 2020; United Nations Environment Programme, 2024).

Our analysis reveals four sustainability tensions operating at multiple levels: (1) Values vs. Commerciality; (2) Legitimacy vs. Authenticity; (3) Competition vs. Collaboration; and (4) Fidelity to Craft vs. Scaled Production. Rather than viewing these tensions as simple dichotomies, we demonstrate that they can be actively leveraged, functioning simultaneously as constraints and as catalysts for development. We identify leveraging sustainability tensions as a third response that extends existing paradox theory beyond the resolution and acceptance strategies documented in prior literature. Three network-level mechanisms operationalise this leveraging: circular innovation emerging from environmental constraints, sustainability certification as strategic asset, and collaborative sustainability networks. This advances paradox theory by positioning leveraging as a novel third response; extends IMP scholarship by demonstrating how sustainability tensions catalyse novel network configurations; and contributes to sustainability entrepreneurship research by showing that resource constraints can become sources of competitive advantage. Given that small and medium enterprises constitute 99.2% of EU food and drink businesses, these findings have significant implications for how sustainability transitions can emerge from, rather than despite, fundamental contradictions.

The remainder of the paper is structured as follows. We first review literature on paradox theory, IMP network perspectives, and sustainability tensions in small entrepreneurial firms, before detailing our qualitative methodology and research context. We then present findings across four sustainability tensions and three leveraging mechanisms, develop our conceptual framework, and discuss theoretical contributions. The paper concludes with managerial and policy implications, limitations, and directions for future research.

2. Literature

2.1. Paradoxes and tensions: theoretical foundations

Paradoxes are contradictory yet interdependent elements that exist simultaneously (Fang, Chang, & Peng, 2011; Lewis, 2000). In organisational contexts, paradoxes manifest as tensions, the experienced contradictions and conflicting demands actors navigate in practice (Smith & Lewis, 2011). Sustainability represents a domain characterised by persistent paradoxes where the simultaneous pursuit of economic, environmental, and social objectives (Elkington, 1998), pull organisations in irreconcilable directions (Hahn, Preuss, Pinkse, & Figge, 2014). As Manzhynski and Biedenbach (2023: 34) observe, sustainability "aims to address contradictory economic, environmental and social goals" which often conflict with each other, manifesting as tensions in daily decision-making. Haffar and Searcy (2017) highlight how tensions arise both between and within sustainability dimensions. Economic-environmental tensions emerge when environmental commitments increase costs or constrain efficiency. Economic-social tensions arise when social goals conflict with cost minimisation. Environmental-social tensions manifest when environmental initiatives conflict with social objectives. These tensions intensify for small firms with limited resources to invest simultaneously across multiple dimensions (Chang & Fong, 2025).

Early paradox research focused on resolution strategies, emphasising how tensions could be eliminated (Poole & Van de Ven, 1989). However, as paradoxes are definitionally persistent, tensions break open again even after apparent resolution, rendering this approach inadequate (Schad, Lewis, Raisch, & Smith, 2016). This led scholars to advocate acceptance, whereby organisations learn to live with inherent contradictions (Lewis & Smith, 2014). Contemporary paradox theory has moved from "either/or" to "both/and" thinking, with some positing synergies from coexisting opposing forces (Blome et al., 2023). Yet a critical question remains: might paradoxes function not merely as persistent challenges to be managed but as generative forces that can be actively leveraged?

Recent work suggests this possibility. Blome et al. (2023) note that trust-opportunism paradoxes can create synergies when jointly managed, while Manzhynski and Biedenbach (2023) demonstrate that coopetition-sustainability paradoxes enable triple bottom line benefits through competitor collaboration. Bechtel, Sabini, and Kock (2025) demonstrate links between sustainability tensions and portfolio innovativeness. While research establishes connections between paradoxes and innovation, existing literature stops short of theorising the mechanisms through which tensions themselves might drive collaborative and innovative responses. This question is particularly relevant for sustainability contexts given contradictions between economic, environmental, and social values (Hahn et al., 2014), short-term and long-run focuses (Van der Byl & Slawinski, 2015), and shareholder and stakeholder interests (Scherer, Palazzo, & Seidl, 2013).

2.2. Paradoxes and tensions: network perspective

Drawing on the IMP perspective, business networks generate three paradoxes (Håkansson & Ford, 2002). First, relationships create opportunities and limitations simultaneously. Second, companies influence and are influenced by their relationships. Third, companies attempt control whilst lacking complete control. Together, these paradoxes create a complex relational environment within which sustainability tensions emerge and evolve (Harrison et al., 2023).

Sustainability intensifies all three network paradoxes for resource-constrained firms. Sustainability initiatives require coordinating diverse actors, mobilising specialised resources, and aligning activities toward potentially conflicting goals (Ford et al., 2003; Harrison et al., 2023). This extends networks to include consultants, certification bodies, NGOs, and regulatory agencies (Öberg, Huge-Brodin, & Björklund, 2012), intensifying the control paradox as more actors must be coordinated without any single actor possessing control.

Pursuing economic, environmental, and social goals simultaneously amplifies the opportunities-limitations paradox as sustainability partnerships enable values alignment yet constrain commercial opportunities. Manzhynski and Biedenbach (2023) term this knotted paradoxes, where multiple paradoxes interrelate simultaneously. Sustainability initiatives often produce unintended consequences that illustrate the influencing-being influenced paradox (Ozanne et al., 2016). Network dependence forces engagement with sustainability agendas shaped by powerful actors (control paradox), resource constraints limit abilities to meet escalating requirements whilst values-based partnerships constrain commercial scale (opportunities-limitations paradox), yet collaborative imperatives around shared challenges may motivate leveraging responses (influencing-being influenced paradox). These network-level dynamics are embedded within broader macro-environmental structures that both enable and constrain how firms navigate sustainability tensions.

2.3. Sustainability tensions in small entrepreneurial firms

Small entrepreneurial firms face distinctive sustainability tensions that differ from larger organisations (Ćorić et al., 2020). Unlike large corporations with specialised sustainability departments, small entrepreneurs face resource allocation tensions between immediate business needs and longer-term sustainability investments (Mangla et al., 2018). These resource constraints are compounded by limited marketing competencies for sustainability value signalling (Cantele & Zardini, 2020; Rudawska, 2019) and knowledge gaps in navigating complex sustainability requirements (Aksoy & Schnellbächer, 2025; Brown et al., 2024).

Beyond resource and knowledge challenges, identity tensions manifest distinctively in small entrepreneurial firms between personal values and commercial imperatives. Entrepreneurs experience sustainability as personal identity tensions between their roles as craft producers, business operators, and community members (La Rocca & Dal Molin, 2024). This creates what we term 'identity-driven sustainability approaches' that prioritise authenticity and community connection over pure economic optimisation, representing a significant gap in current sustainability literature that predominantly focuses on efficiency-based models developed in large firm contexts (Mwesiumo, Harun, & Hogset, 2023).

These identity-driven tensions are particularly acute in values-led sectors such as CF&D. Craft entrepreneurs are often motivated by quality, tradition, and environmental stewardship (Scott Morton & Podolny, 2002), yet these same values create normative conflict, the pressure to choose between conforming to social expectations for sustainability or opting for non-sustainable actions (Chang & Fong, 2025). This produces a 'trade-off' mindset where sustainability objectives compete rather than complement each other (Manzhynski & Biedenbach, 2023; Van der Byl & Slawinski, 2015). Such conflicts sit at the heart of identity-driven sustainability approaches, where craft entrepreneurs' values simultaneously motivate and constrain sustainable action (La Rocca & Dal Molin, 2024).

2.4. Relationship & network level sustainability tensions

Individual-level tensions become amplified in network contexts where sustainability practices require collaboration across multiple actors spanning suppliers, producers, retailers, and non-business entities (Chauhan, Kaur, Arrawatia, Ractham, & Dhir, 2022). Whilst collaboration can foster sustainable consumption, reduce waste, and generate operational efficiencies (Santos et al., 2021), achieving this alignment necessitates considerable time and effort (Sabatini, O'Toole, & Gregori, 2021; Tura et al., 2019). Firms must share sensitive information about values and products with multiple network actors (Lacoste, 2016), exposing sustainability-specific tensions that emerge from network interactions.

Power asymmetry tensions are particularly pronounced for small firms. Powerful actors use collaborative mechanisms to work with suppliers whilst concurrently employing coercive mechanisms to evaluate their performance (Chowdhury et al., 2016). Powerful downstream actors often impose sustainability requirements without adequate support, creating structural tensions where costs, risks, and benefits are unevenly distributed (Tura et al., 2019). In the food sector, large retailers can over-order fresh produce and impose stringent aesthetic standards, leading to waste and inefficiency that smaller suppliers must absorb (Govindan, 2018; Richards et al., 2021). This represents weak-form opportunism that underscores the dark side of value co-creation for smaller firms (Chowdhury et al., 2016). These power asymmetries create trust-opportunism tensions when uncertainty around powerful actor behaviour and ambiguity surrounding sustainability measurement methodologies are high (Blome et al., 2023). Small firms must build trust for long-term collaborative sustainability initiatives whilst simultaneously protecting themselves against opportunistic behaviour where monitoring is difficult and specific sustainability investments are required.

Coopetition tensions manifest as firms must simultaneously compete and collaborate with other actors on sustainability initiatives, reflecting knotted paradoxes (Manzhynski & Biedenbach, 2023), where competition-cooperation tensions intertwine with economic-environmental-social goal tensions. Managing sensitive sustainability information becomes particularly problematic as firms balance transparency demands for collaboration with competitive positioning needs, creating what Van der Byl and Slawinski (2015) term 'ambidexterity tensions'. Temporal tensions also arise when network actors operate on different time horizons, with sustainability requiring long-term perspectives whilst entrepreneurial firms prioritise short-term survival metrics (Ćorić et al., 2020; Van der Byl & Slawinski, 2015). The resulting information asymmetries and coordination challenges are further shaped by the macro-environmental structures within which these network relationships are embedded.

2.5. Macro-environmental level sustainability tensions

At the macro-environmental level, small entrepreneurial firms face regulatory, market structure, legitimacy, and institutional tensions. Regulatory tensions emerge from complex, contradictory sustainability regulations across jurisdictions, particularly challenging for small firms with limited compliance resources (Cantele & Zardini, 2020; Govindan, 2018). Whilst governments establish high expectations for sustainability achievement, clear implementation guidelines are often missing, and government supports are largely limited to individual firms rather than supporting cross-sectoral collaboration (McGrath & O'Toole, 2013). In the food sector, this complexity intensifies as firms navigate overlapping regulations around organic certification, food safety standards, packaging requirements, and waste disposal.

Market structure tensions reflect contradictions between market

demands and sustainability principles, where economic viability of sustainable products may be undermined by market structures that fail to price in environmental externalities (Huang, Surface, & Zhang, 2022; Tura et al., 2019). In craft food contexts, supermarket pricing structures favour mass production and long shelf-life products, disadvantaging small-batch, fresh, local producers despite their lower environmental footprint. Tensions between social pressure from stakeholders propelling firms toward sustainable practices and competitive pressures due to operational cost concerns (Chang & Fong, 2025) present firms with a legitimacy trap, caught between criticisms of both insufficient sustainability efforts and initiatives that may compromise economic viability. Legitimacy tensions also arise as firms establish sustainability credentials amid increasing scepticism toward corporate sustainability claims and 'greenwashing' accusations (Goworek et al., 2020). Institutional tensions reflect contradictions between formal sustainability expectations and informal business practices, where despite growing institutional support, actual practices may prioritise short-term financial performance over long-term sustainability goals (Aksoy & Schnellbächer, 2025; Van der Byl & Slawinski, 2015).

These macro-environmental tensions do not operate independently of network and individual-level tensions. Rather, they cascade downward, as regulatory pressures shape what network relationships are viable, market structures determine which collaborative arrangements are sustainable, and institutional expectations define the legitimacy conditions under which firms operate. For small entrepreneurial firms, who lack the resources and influence to shape these institutional environments (Cantele & Zardini, 2020), this creates a compounding effect where macro-level pressures intensify network-level tensions, which in turn constrain individual firm decisions around sustainability. Yet this multi-level pressure also creates conditions for leveraging, where macro-environmental constraints force network-level adaptations that individual firms can harness as sources of competitive advantage.

Whilst existing literature acknowledges potential for collaboration in sustainability initiatives (Annosi et al., 2021; Chauhan et al., 2022; Santos et al., 2021), three critical gaps remain. First, research has yet to examine how tensions operate simultaneously across individual, network, and macro-environmental levels in resource-constrained contexts. Second, whilst literature acknowledges tensions might drive innovation (Bechtel et al., 2025; Manzhynski & Biedenbach, 2023), the mechanisms remain undertheorised. Third, extant literature treats collaboration as a solution to sustainability challenges rather than examining how tensions themselves might drive collaborative and innovative responses that emerge specifically because of, rather than despite, these tensions (Harrison et al., 2023). Our exploratory study addresses these gaps by examining how sustainability tensions manifest and interact across levels in the lived experience of small entrepreneurs within business networks.

3. Methodology

3.1. Design and context

We adopted a qualitative multi-case study approach using abductive reasoning (Eisenhardt, 1989; Gioia, Corley, & Hamilton, 2013), moving iteratively between empirical observations and emerging theoretical concepts. This approach is suited to exploring paradoxes in sustainability contexts (Brown et al., 2024; Manzhynski & Biedenbach, 2023) and sustainable entrepreneurship (La Rocca & Dal Molin, 2024).

The CF&D industry across Ireland and Scotland was selected as the empirical context. This context is particularly compelling for examining sustainability tensions as CF&D firms often begin with strong values-based motivations that conflict with commercial realities and external sustainability pressures (Richards et al., 2021; Scott Morton & Podolny, 2002). They operate within complex supply networks with power asymmetries (Richards et al., 2021) and face increasing sustainability pressures from multiple stakeholders (Govindan, 2018). These characteristics create inherent tensions between values, viability, and compliance. At the EU level, the food industry generates €1.1 trillion turnover, with SMEs representing 99.2% of firms (Data & Trends, 2023). In Ireland, the agri-food industry accounts for 8% of GDP and employs almost 160,000 people, whilst Scotland's food and drink industry is worth £15 billion and employs 44,000 people (Food and Drink Federation, 2024). Both countries have ambitious sustainability commitments, with Ireland targeting 50% food waste reduction by 2030 and Scotland 33% by 2025, creating compliance pressures for small firms (Mangla et al., 2018).

Incorporating both countries provides contextual richness across different institutional frameworks whilst maintaining consistency in entrepreneurial context. Ireland operates under EU agricultural policy whilst Scotland developed its own approach. Despite contrasting policies, both share cultural values around food heritage and craft production. Rather than comparing countries, the study captured sustainability tensions in small entrepreneurial firms operating within similar regulatory and cultural contexts.

3.2. Data collection and analysis

Purposeful sampling using theoretical, convenience, and geographical approaches (Eisenhardt, 1989; Patton, 2002) captured diverse experiences whilst maintaining focus on the phenomenon. Case selection was guided by three criteria: variation in firm size, founding year, and product category; variation in sustainability orientation; and the deliberate inclusion of polar types (Eisenhardt, 1989), from recently founded micro-enterprises with strong values-based motivations to longer-established medium-sized firms navigating institutionalised sustainability requirements. In each case it was important that the interviewee was either the founding entrepreneur or a senior manager with direct responsibility for sustainability decision-making, as these individuals represented the main relational actors navigating sustainability tensions within their firms. Participants were identified through farmers markets, food festivals, craft-oriented retailer websites, and online searches. Sampling decisions evolved across the two phases, with Phase 1 findings informing targeted recruitment in Phase 2 to ensure emerging theoretical categories were adequately represented across both countries.

The researchers designed the study in two phases using complementary data collection methods, following established practices in sustainability tensions research (Manzhynski & Biedenbach, 2023; Mwesiumo et al., 2023). Phase 1 findings informed Phase 2 design, with qualitative methods employed throughout. Phase 1 was conducted between March and December 2022 as a pre-study involving interviews with 12 CF&D firms in Ireland (Firms A-L; see Table 1). Initial observations and participation at industry events supplemented interview data. The interviews explored entrepreneurs' current sustainability practices, challenges encountered, and relationships with network partners. Analysis revealed sustainability tensions manifesting across individual, relational, and institutional levels, confirming this as a core phenomenon. Phase 2 expanded the study to both Ireland and Scotland.

Phase 2 was conducted between September 2024 and May 2025, encompassing site visits to 20 further participants' premises (12 in Ireland, 8 in Scotland, see Firms M to AF in Table 1), incorporating facility tours, direct observations and semi-structured interviews. Completing these in-person site visits facilitated realistic interpretations of real-life business conditions and the daily working world of the entrepreneur (McGrath, O'Toole, & Canning, 2024), and allowed casual conversations with other team members where present.

Participating firms ranged in size from micro-enterprises (2 employees) to medium-sized organisations (207 employees), with founding years spanning from 1921 to 2024, providing diversity in organisational maturity, resource constraints, and sustainability experience (see Table 1). Table 1 also documents firms' primary sustainability focus, which became central to understanding legitimacy tensions and strategic responses discussed in our findings. Across both phases, interviews

Table 1
Study participant details.

Firm	Product Description (Craft)	Interviewee	Country	Employees (FT)	Founded	Primary Sustainability Focus
Firm A	Vegetable producer	Owner	Ireland	5	1978	Organic production, circular systems
Firm B	Snacks/treats producer	Owner	Ireland	2	2008	Ethical/sustainable sourcing
Firm C	Vegetable producer	Senior Manager	Ireland	6	2013	Social enterprise model
Firm D	Cider producer	Owner	Ireland	5	2015	Local sourcing
Firm E	Snacks/treats producer	Owner	Ireland	2	2017	Sustainable ingredients, health focus
Firm F	Gin producer	Senior Manager	Ireland	2	2013	Botanical sourcing, category reputation protection
Firm G	Cordial producer	Owner	Ireland	2	2013	Local ingredient sourcing
Firm H	Confectionery producer	Owner	Ireland	2	2020	Sustainable ingredient sourcing, sustainable packaging
Firm I	Meat producer	Owner	Ireland	16	1985	Ethical farming practices
Firm J	Condiment producer	Owner	Ireland	2	2017	Sustainable ingredient sourcing
Firm K	Meat producer	Senior Manager	Ireland	21	1921	Ethical sourcing, local supply chains
Firm L	Cordial producer	Owner	Ireland	2	2013	Organic processes, waste reduction
Firm M	Mead producer	Owner	Ireland	4	2016	Ethical sourcing, zero waste
Firm N	Meat/condiment producer	Senior Manager	Ireland	25	1992	Local sourcing, social sustainability
Firm O	Spirits producer	Owner	Ireland	5	2020	Social enterprise sourcing, circular economy
Firm P	Food market operator	Senior Manager	Ireland	3	2020	Community development, small producer support
Firm Q	Whiskey/ gin producer	Senior Manager	Scotland	31	2017	Energy efficiency, social accessibility
Firm R	Biscuit producer	Senior Manager	Scotland	68	1989	Carbon reduction initiatives
Firm S	Condiment producer	Senior Manager	Ireland	54	1990	Local sourcing, energy efficiency
Firm T	Meat producer	Senior Manager	Ireland	207	1962	Waste valorisation, circular economy
Firm U	Snacks/treats producer	Senior Manager	Ireland	10	2020	Sustainable ingredients, health focus
Firm V	Whiskey producer	Senior Manager	Scotland	23	2023	Sustainable production practices
Firm W	Brewery	Owner	Ireland	8	2015	Renewable energy, local branding
Firm X	Café/vegetable producer	Head Chef	Ireland	23	2016	Zero waste operations, organic production
Firm Y	Condiment producer	Senior Manager	Ireland	4	2019	Waste valorisation, by-product innovation
Firm Z	Chocolate producer	Owner	Ireland	2	2023	Ethical sourcing
Firm AA	Food market operator	Senior Manager	Scotland	20	2022	Community development, local economy
Firm AB	Bakery	Senior Manager	Scotland	3	2021	Local sourcing
Firm AC	Alcohol distributor	Senior Manager	Scotland	3	2023	Supporting craft producers
Firm AD	Food market operator	Senior Manager	Scotland	37	2023	Community development, local economy
Firm AE	Brewery	Owner	Ireland	4	2010	Sustainable production practices
Firm AF	Whiskey consultancy	Owner	Scotland	2	2024	Industry education, sustainability advocacy

* Phase 1 interviews conducted March–December 2022 (Firms A–L, Ireland). Phase 2 interviews conducted September 2024–May 2025 (Firms M–AF, Ireland and Scotland).

lasting approximately 90 min were conducted with owners, and senior managers and one head chef (operations, sustainability) who had direct involvement in sustainability decision-making (see Table 1 for interviewee roles). Site visits were conducted at 28 of the 32 firms.

Semi-structured interviews followed a discussion guide aligned with emergent studies in sustainability tensions research (La Rocca & Dal Molin, 2024). The interviews explored several key topic areas: (i) founders' motivations and values driving business formation; (ii) current sustainability practices and initiatives; (iii) stakeholder roles and pressures shaping sustainability efforts; (iv) challenges and tensions encountered; (v) relationships with suppliers, customers, competitors, and certification bodies; (vi) trade-offs between sustainability and commercial viability; and (vii) collaborative or innovative responses to sustainability challenges. Using open-ended questions, participants were encouraged to describe their experiences in their own words, with follow-up probes exploring tensions and contradictions that emerged. This approach addressed Manzhynski and Biedenbach's (2023) call for understanding how firms navigate contradicting demands.

Primary interview and observation data were supplemented with secondary sources including company websites, sustainability reports, marketing materials, industry news articles, and policy documents. This data triangulation, combined with researcher and theoretical triangulation, strengthened analysis following established practices for case study research in industrial marketing (Farquhar, Michels, & Robson, 2020).

3.3. Data analysis

Following Gioia et al.'s (2013) systematic approach, analysis proceeded through three phases. Preliminary analysis of Phase 1 data through open coding revealed sustainability tensions manifesting across individual, relational, and institutional levels, informing Phase 2 design and expansion to Scotland. Comprehensive analysis then proceeded iteratively.

First-order concepts emerged directly from informants' voices through open coding of all interview transcripts and observational notes, staying close to participant language to preserve authenticity and meaning (Gioia et al., 2013). For example, informants described mission-driven decisions ("we don't want to be too big"), existential trade-offs ("we could be carbon neutral next year but would also be out of business"), and forced certification pressures ("to work with certain retailers must be Origin Green certified"). This inductive phase identified recurring themes and patterns related to sustainability challenges, tensions, and decision-making processes. We used constant comparative analysis to identify similarities and differences across cases (Eisenhardt, 1989).

Second-order themes were developed by asking theoretical questions about relationships between first-order concepts. For instance, codes related to mission-driven decisions, ethical supplier selection, and scale resistance coalesced into a theme of 'Values-Based Decision Making', while codes around carbon neutrality threats, local sourcing impossibility, and negative margins formed 'Survival vs. Sustainability Dilemmas'. This axial coding examined how different first-order concepts related to each other and began identifying higher-order patterns. We drew on relevant sustainability literature (Chang & Fong, 2025; Manzhynski & Biedenbach, 2023; Tura et al., 2019) to help interpret emerging themes whilst remaining open to new theoretical insights from the data, following Dubois and Gadde's (2002) systematic combining approach.

The emergent second-order themes were distilled into five aggregate dimensions. The analysis revealed four types of constraining sustainability tensions (Values vs. Commerciality; Legitimacy vs. Authenticity; Competition vs. Collaboration; Fidelity to Craft vs. Scaled Production) alongside three leveraging mechanisms through which firms

transformed these tensions into innovation opportunities through circular economy practices, certification as strategic assets, and collaborative networks. This selective coding phase involved theoretical abstraction where core categories best explained the phenomenon of sustainability tensions in the entrepreneurial context (Strauss & Corbin, 1998). The resulting data structure demonstrates progression from empirical observations to theoretical contributions.

The analysis was conducted collaboratively by the research team, with regular discussions to ensure inter-coder reliability and theoretical consistency (Miles, Huberman, & Saldana, 2020). Member checking was conducted with four participants, two from Ireland and two from Scotland, selected to reflect variation in firm size and sustainability orientation. Preliminary findings were shared and participants broadly validated our interpretations, confirming that the four tensions and three leveraging mechanisms resonated with their experience. This strengthened confidence in the authenticity and transferability of our findings (Lincoln & Guba, 1985), following validation practices used in similar sustainability tensions research (Manzhynski & Biedenbach, 2023). The complete data structure for each first-order concept, second-order theme, and aggregate dimension, is presented in Table 2.

4. Findings

Our findings reveal that entrepreneurs navigate both sustainability paradoxes (arising from simultaneous pursuit of economic, environmental, and social goals) and network paradoxes (arising from the enabling-constraining, influencing-influenced, and control-no control dynamics identified by Håkansson & Ford, 2002). These two types of paradoxes become knotted together for resource-constrained firms, where pursuing sustainability goals is inseparable from navigating network relationships. Our analysis demonstrates how macro-environmental structures influence both individual firm decisions and network relationships, creating conditions under which these knotted paradoxes manifest. Our findings reveal four distinct sustainability tensions that emerge from this knotting: Values vs. Commerciality, Legitimacy vs. Authenticity, Competition vs. Collaboration, and Fidelity to Craft vs. Scaled Production. Our findings reveal that these tensions function simultaneously as constraints and as catalysts that entrepreneurs actively leverage through three specific mechanisms: circular innovation emerging from environmental constraints, sustainability certification as strategic asset, and collaborative sustainability networks.

Table 2
Data structure on sustainability tensions and leveraging mechanisms in small entrepreneurial firms.

First-Order Concepts	Second-Order Theme	Aggregate Dimensions
Four sustainability tensions:		
Ethical supplier selection; prioritising welfare over efficiency; working with aligned partners despite commercial costs; Values-based sustainability standards requiring eco-friendly packaging; Accessibility investments despite costs	*Values-Based Decision Making*	**Values vs. Commerciality**
Mainstream brand exclusion limiting revenue; Refusing to work with larger traders to maintain values; Selective partnerships prioritising ethical alignment over volume	*Constraining Commercial Opportunities*	
Ambiguous continuous improvement demands; Diminishing returns on sustainability efforts; Knowledge deficits around formal metrics; Vague certification requirements	*Performance Treadmill Trap*	**Legitimacy vs. Authenticity**
Forced sustainability certification for market access; Supplier-sought sustainability indicators; Retailer requirements driving compliance; Certification costs exceeding affordability for small producers; Larger actors leveraging small producer credentials	*Economic Coercion Through Sustainability*	
Awarding improvements over existing practices; Small producers excluded by certification costs; Authentic versus demonstrable sustainability gaps	*Consumer and Institutional Sustainability Disconnect*	
Sectoral reputation concerns driving collective action; Bad actors jeopardising category legitimacy; tarnish versus enhancing sectoral sustainability	*Protecting Category Legitimacy*	**Competition vs. Collaboration**
Community support culture amongst competitors; Knowledge sharing culture for sustainable solutions; Values-based partnerships prioritising alignment; Competitor cooperation on practical challenges;	*Coopetitive Sustainability Networks*	
Strategic knowledge sharing selectivity; Local collaborations creating competitive edge; Radical openness philosophy sharing production innovations; Selective information protection on bespoke processes; Balancing proprietary positioning with collective contribution	*Knowledge Sharing Strategies*	
Essential plastic paradox for product protection; Shelf life vs. organic certification; Quality-sustainability conflicts	*Product Integrity Compromises*	**Fidelity to Craft vs. Scaled Production**
Local sourcing economically impossible at scale; Volume growth forcing supplier diversification from small local to large international; Seasonal ingredient availability constraining production; Growth pushing away from direct farmer relationships; Loss of transparency and traceability at scale	*Supply Network Reconfiguration Pressures*	
Climate change threatening premium ingredient availability; Environmental degradation creating existential threats; Resource scarcity limiting craft production viability	*Environmental and Infrastructure Constraints*	
Three mechanisms through which firms leverage sustainability tensions:		
Waste-to-value product innovation creating revenue streams; By-product valorisation into award-winning products revealing hidden value; Zero-waste commitments forcing creative experimentation; Material flow rethinking generating recipe innovations;	*Circular Innovation Emerging from Environmental Constraints*	**Leveraging Sustainability Tensions**
Certification enabling international market access; Certification opening retailer distribution; Grant funding access through certification; Certification becoming buyer requirement;	*Certification as Strategic Asset*	
By-product becoming another firm's input; Practical competitor assistance with production challenges; Supplier research collaborations sharing costs; Collective learning through sharing certification journey experiences; Regional branding collaborations; Values-based partnership solidarity; Competitor cooperation on category standards	*Collaborative Sustainability Networks*	

4.1. Values vs. commerciality

The Values vs. Commerciality tension emerged when entrepreneurs' environmental and social commitments directly conflicted with market-driven economic imperatives. This tension is distinctly sustainability-focused, emerging when doing the environmentally or socially right thing directly limits commercial opportunity.

Participants described navigating market structures and financial systems that privilege commercial logics over values-driven practices. One entrepreneur articulated: *"you can find a balance between making money and doing good"* (Firm L), yet participants consistently described this balance as elusive. These pressures manifested at both individual and network levels, shaping decision-making and partnership configurations. This tension manifested through two distinct dynamics: values-based decision making at the operational level, and the ways these values constrained commercial opportunities at the strategic level.

At the individual firm level, entrepreneurs made explicit values-based decisions that limited commercial opportunities. Ethical supplier selection exemplified this dynamic. One entrepreneur explained: *"we wouldn't use [Large Irish Grower]…because of some of the ethical piece around migrant workers and worker rights…Instead, what we will use is [Small Irish Fruit Producer]"* (Firm M). Another noted: *"we only buy from sustainable farmers that are part of the cocoa horizon…the money goes back to the farmers"* (Firm Z). These choices prioritised worker welfare and social equity over cost efficiency, directly constraining profit margins.

Environmental and social commitments similarly constrained commercial choices. Firm AD enforced strict sustainability standards requiring all traders to *"use biodegradable, compostable and eco-friendly packaging"*, accepting higher costs and limiting collaborations. Firm Q described installing *"two lifts in the building, one at each side of the tour. Although expensive, this is to be respectful of people with accessibility needs so that they do not have to draw attention to themselves"*. These decisions prioritised social inclusion over cost efficiency.

At the network level, participants described how *commercial opportunities were constrained* through selective partnership decisions that prioritised ethical and environmental alignment. Firm P explained: *"Our boss will never go for the bigger [traders]…We won't take any mainstream brands…There is a real sense of community, for most vendors it's their first venture so they want the whole market do well"*. This exclusion of larger organisations maintained values coherence whilst limiting revenue potential.

4.2. Legitimacy vs. authenticity

The Legitimacy vs. Authenticity tension emerged when formal certification requirements conflicted with entrepreneurs' embedded sustainability practices. The entrepreneurs in our study, without exception, described navigating macro-environmental shifts toward increasing institutionalisation of sustainability through formal certification regimes, including Origin Green, B Corp, Science-Based Targets initiative (SBTi), and EU regulations. This tension centres on small firms that have always operated sustainably now facing external pressures to formalise, certify, measure, and continuously improve to maintain legitimacy, pressures more easily absorbed by larger organisations with dedicated sustainability departments and compliance resources. Whilst certification schemes enable comparability and accountability, participants highlighted how these can reflect incumbent interests rather than small firms' authentic sustainability priorities. Entrepreneurs experienced these pressures at both individual and network levels, affecting their compliance burdens and collaborative dynamics differently than larger counterparts.

At the individual level, entrepreneurs described experiencing what we observed as a 'performance treadmill trap' created by institutional expectations for continuous improvement. Small firm participants reported that certification requirements become increasingly demanding, evaluation criteria remain ambiguous, and compliance costs grow disproportionately for resource-constrained operations. Multiple entrepreneurs noted this trap intensifies once easily achievable sustainability gains are exhausted: *"Energy savings were a lot easier 5 years ago…we have already picked all the low hanging fruit"* (Firm S). Entrepreneurs noted that certification bodies *"always want more"* (Firm O) but provide little guidance. This created additional resource pressures for small firms where in terms of sustainability the entrepreneurs noted *"We're too busy to be at a stage to stop and think"* (Firm P) and certification was costly: *"we are organic but we cannot afford to pay for the certification"* (Firm L).

The legitimacy pressures were intensified by a consumer and institutional sustainability disconnect. Entrepreneurs described how their authentic sustainability commitments felt undervalued within formal legitimacy structures further noting that: *"Awards often require evidence of improvement, rather than recognising businesses that have been operating sustainably from the beginning"* (Firm N). Small firm entrepreneurs experienced a tension between demonstrating continuous improvement and having operated sustainably from inception: *"producers like us have to spend loads of time to get certified and contract manufacturers don't - that's unfair"* (Firm O). This explicitly contrasted small producers with larger manufacturers who could more easily absorb compliance costs.

At the network level, entrepreneurs faced economic coercion through sustainability, whereby certification became mandatory for market participation, creating additional pressures for small firms. Certification shaped supplier relationships: *"… they send separate sustainability questionnaire, more detailed if not accredited"* (Firm S). This created network disadvantages for non-certified small firms. Entrepreneurs also reported that information gaps complicate formal measurement of sustainability performance, particularly for small firms with diverse, artisanal supply chains. Firm R explained: *"we use a wide variety of raw materials, and these are not typically easy to find carbon emissions data"*. Small firm entrepreneurs found data scarcity made generating required sustainability metrics difficult even when they maintained authentic commitments through direct supplier relationships. However, entrepreneurs observed that larger actors could *"piggyback on their sustainability credentials to benefit their own brand without making changes themselves"* (Firm M), leveraging partnerships with authentically sustainable small producers whilst investing less in their own practices.

4.3. Competition vs. collaboration

The Competition vs. Collaboration tension emerged when entrepreneurs experienced contradictions between protecting individual competitive advantage and contributing to collective sustainability goals and category legitimacy. Participants described this tension as particularly acute in sustainability contexts, where environmental and social challenges require collaborative solutions that transcend firm boundaries, yet market competition creates pressures to protect proprietary advantages. Entrepreneurs described navigating competing logics: traditional markets reward proprietary knowledge whilst sustainability challenges require collaborative solutions and knowledge sharing.

At the individual level, entrepreneurs navigated this tension through strategic knowledge sharing, characterised by selectivity. Firm Z explained: *"Local collaborations give me a special edge"*, demonstrating how collaborative partnerships with local producers create differentiation whilst reducing carbon footprint through proximity. However, others maintained selective approaches. Firm S noted they engage in selective information sharing, explaining they have developed bespoke sustainability processes and would not necessarily share this information with direct competitors. This selectivity reflects the core tension, entrepreneurs recognised the collective benefits of knowledge sharing yet remained cautious about competitive exposure.

At the network level, participants faced ongoing tensions between competitive imperatives and sustainability collaboration necessities, where traditional competitive boundaries blurred around sustainability challenges. Underpinning these collaborative dynamics was a shared

concern for protecting category legitimacy. Entrepreneurs expressed concern that poor-quality products from any producer could damage the entire category's reputation: *"The guys who are just trying to make a quick buck and…aren't putting any effort into it…are letting the Irish food and drink sector down"* (Firm F); *"if they make a bad [product], people won't drink [product] in general"* (Firm M). Yet acting on this shared concern required engaging with the very competitors they sought to differentiate from, a contradiction that sits at the heart of the Competition vs. Collaboration tension.

4.4. Fidelity to craft vs. scaled production

The Fidelity to Craft vs. Scaled Production tension emerged when participants experienced sustainability commitments embedded in artisanal production methods, such as local sourcing, premium natural ingredients, and small-batch quality control, becoming economically or operationally untenable as firms grow. This tension is distinct from Values vs. Commerciality; rather than ethical principles conflicting with profit, sustainability practices intrinsic to craft production create operational constraints at volume.

Entrepreneurs described operating within macro-environmental constraints where climate change threatens sustainable ingredient availability. Firm Z expressed: *"Global warming is a big problem; not enough cocoa beans are surviving…I hope I didn't go into this business at the wrong time"*. Market structures favour mass production and long shelf-life products, disadvantaging small-batch producers with lower environmental footprints. This tension manifested through three interconnected challenges: product integrity compromises where sustainability and quality requirements conflicted, supply network reconfiguration pressures as growth forced shifts from local to international sourcing, and environmental and infrastructure constraints.

At the individual level, entrepreneurs faced acute trade-offs in product integrity, balancing sustainable sourcing commitments and operational viability at scale. Local sourcing, central to reducing carbon footprints, proved economically impossible at production volumes: *"If we went for 100% local honey, we would go out of business"* (Firm M). This forced choices between local sourcing maintaining sustainability credentials and economic survival requiring international sourcing. Sustainable ingredient commitments created similar constraints: *"product quality is so linked to our raw materials that we are not easily able to swap out high emission ingredients e.g. butter"* (Firm R). Entrepreneurs noted that competitor products use cheaper, often less sustainable alternatives at larger scales, creating price disadvantages for craft producers prioritising sustainable ingredients. Technical requirements also constrained sustainable packaging options. Firm Z explained: *"Chocolate is very scientific in terms of time temperature and control. The open air is not ideal for chocolate"*, highlighting how product integrity requirements limit sustainable packaging alternatives.

Within supply chains, participants managed sustainable sourcing tensions through strategic supplier relationships and seasonal optimisation, but faced significant supply network reconfiguration pressures. Growth forced supplier diversification that compromised sustainable local supply chains: *"the volume is now too big for the amount of tomatoes needed for smaller suppliers so we have to work with larger companies and international suppliers"* (Firm S). Volume growth pushed firms away from small local suppliers, who enable direct relationships, traceability, and reduced transport emissions, toward larger international partners who facilitate supply volume but with reduced transparency and increased environmental impact. Seasonal optimisation represented one attempted solution, with firms concentrating production around seasonal local availability to maintain sustainable sourcing. Yet participants noted this approach creates operational complexity and remains a compromise between sustainability ideals and scale realities.

4.5. Leveraging sustainability tensions

Having identified four distinct sustainability tensions, a deeper pattern emerged. Rather than simply constraining entrepreneurial action, these tensions simultaneously functioned as catalysts, environmental commitments that increase costs also drive circular innovations, certification requirements that burden operations open new markets, competitive pressures motivate collaboration, and quality standards that constrain sourcing necessitate ethical supply network development. Our analysis identified three network-level mechanisms through which entrepreneurs actively leverage these tensions: (1) circular innovation emerging from environmental constraints; (2) sustainability certification as strategic asset; and (3) collaborative sustainability networks.

4.5.1. Mechanism 1: circular innovation emerging from environmental constraints

The circular innovation mechanism emerged when environmental constraints forced creative experimentation leading to new revenue streams. Participants described how waste becomes a problem demanding creative solutions rather than a disposal cost to be minimised.

Entrepreneurs demonstrated creativity in developing circular economy solutions that transform waste streams into value-creating opportunities. Firm Y, faced with waste disposal challenges, converted cashew by-product into smoked chilli oil, with this product innovation winning national awards. Firm X articulated how environmental imperatives rethink existing practices: *"it* [sustainability] *makes you be a little bit more innovative, it makes you think…put old coffee into kombucha and some skins…put old apple bits into the vinaigrette"*. Firm T achieved Origin Green gold membership through comprehensive waste transformation: *"things that were waste 5 years ago are now making us money because we had to look at every part of our waste process"*. Zero-waste commitments force continuous experimentation, generating recipe innovations and new revenue streams.

Operational systems innovations emerged as entrepreneurs developed closed-loop approaches. Firm A exemplifies integrated resource cycling, harvesting rainwater for production whilst extracting carbon dioxide from emissions and returning it to the glasshouse where plants absorb it. This demonstrates how environmental constraints drive technical innovation in resource management, with multiple circular systems operating simultaneously.

Circular innovation extends beyond individual firms to create community-level sustainability networks. Firm A's coconut husk growing medium, after serving its production purpose, becomes cattle bedding for a local farmer, illustrating how waste materials circulate through local networks. Firm M described their community engagement: *"300 kg barrels…often use these for Upcycling projects around the community…use social media platforms like Facebook and their Marketplace function to put those up online"*. Waste exchange networks further demonstrate collaborative environmental action. Firm O explained: *"for the botanicals at the end we do take those back out and we bring them to our neighbours who run cork urban soils project"*. One firm's environmental waste becomes another's input, converting individual waste disposal problems into collective circular economy opportunities through network coordination.

Constraining waste disposal removes easy options, forcing attention to material flows and revealing opportunities invisible when disposal is cheap. The mechanism converts environmental constraints into innovation imperatives, generating revenue, environmental credentials, and community relationships that create authentic sustainability-based differentiation.

4.5.2. Mechanism 2: sustainability certification as a strategic tool

The sustainability certification mechanism emerged when institutional legitimacy pressures created market access opportunities exceeding certification costs. Participants described how this transforms

compliance burdens into strategic tools through grant funding, export enablement, retailer access, and industry network participation.

At the individual level, certification facilitates access to grant funding for sustainability investments. Firm W, an Origin Green certified brewery, explained they invested in solar panels with support from SEAI (Sustainable Energy Authority of Ireland) grants, noting that whilst they wanted to do more, financial capital constraints meant sustainability initiatives had to demonstrate return on investment. Certification enables access to financial support programmes that help offset compliance costs, making sustainability investments economically viable that would otherwise remain unaffordable.

Within relationships, entrepreneurs noted that certification functions as prerequisite for developing powerful partnerships. Firm M explained: *"To work with certain retailers...we must be Origin Green certified"*. Distributors and partners increasingly seek certified firms. Firm AC, a craft alcohol stockist, noted the importance of *"sustainability packaging"* in their brand selection process. This extended to international market relationships. Firm T described: *"We're 70% international and origin green is now recognised internationally, more buyers are looking for sustainability credentials so it's really important to us"*. The certification provided legitimacy that facilitated relationship development with international buyers who increasingly require formal sustainability credentials from suppliers. Firm O confirmed: *"Origin green is really good for grants and that helped with Dubai"*.

Participants noted that certification became requirement for participation in national food festivals and trade fairs run by national bodies, extending certification benefits beyond direct market access to broader industry network positioning. As environmental consciousness grows amongst buyers, documented sustainability performance shifts from optional to required, with firms achieving certification gaining access to retail relationships, international markets, grant funding, industry events, and partnership networks where non-certified competitors cannot participate.

4.5.3. Mechanism 3: collaborative sustainability networks

The collaborative sustainability network mechanism emerged when shared environmental and social challenges motivated network formation for collective problem-solving. Whilst the Competition vs. Collaboration tension identified the contradiction between competitive and collaborative imperatives, this mechanism reveals how entrepreneurs actively transformed that tension into collaborative advantage. Participants described transforming competitive tensions into collaborative advantages, recognising that sustainability challenges often require coordinated action beyond individual firm boundaries.

Firm Q exemplifies this leveraging response, embracing a "no trade secrets" philosophy and openly sharing sustainable production innovations. Rather than protecting proprietary advantages, Firm Q calculated that collective category development creates larger opportunities than individual secrecy preserves, providing practical assistance to a competitor when their equipment proved inadequate for their product needs. Knowledge sharing networks demonstrate how competitors collaborate on sustainability solutions. Firm M explained: *"if someone finds a sustainable solution that actually works, they tell the rest"*, describing a *"culture of knowledge sharing"* where competitors cooperate because collective success precedes individual market share competition. Firm S shared their B Corp sustainability certification journey experiences with other producers, allowing peers to learn from their certification processes rather than repeating mistakes. Firm Q described their relationship with a malt supplier whereby they shared the cost of a PhD scholarship focused on sustainable innovation, with knowledge generated benefiting both parties and rippling through the network as the supplier shared innovations with other small producers.

Values-based collaboration emerged as important for sustainability initiatives. Firm O selected collaboration partners based on sustainability practices, employee treatment, and community standing, noting these criteria were essential for collaboration decisions. This creates networks aligned around shared environmental and social commitments rather than purely commercial considerations. Practical operational collaboration manifested through resource sharing arrangements. Firm AA demonstrated: *"We've 2 businesses to a stall now and link in together with one employee or entrepreneur to cover both firms...it's an interesting business collaboration"*. These arrangements reduce costs whilst maintaining separate competitive identities.

Regional collective branding initiatives formalise collaborative action. Firm AE explained: *"Community spirit is really important...operate under the* [regional] *food banner"*. This regional approach allows individual firms to benefit from collective marketing whilst preserving individual identities. The collective brand creates market positioning advantages unavailable to isolated firms. Firm N described a culture of mutual support amongst local businesses, emphasising collective advancement and strong relationships amongst local producers. This sustainability-focused embeddedness provides ongoing support for environmental initiatives, access to sustainable suppliers and partners, and collective capability for addressing systemic sustainability challenges that individual firms cannot solve alone.

5. Discussion

Our findings identify four novel relational sustainability tensions: Values vs. Commerciality, Legitimacy vs. Authenticity, Competition vs. Collaboration, and Fidelity to Craft vs. Scaled Production. These emerge when sustainability paradoxes (Elkington, 1998; Hahn et al., 2014) and network paradoxes (Håkansson & Ford, 2002) become knotted together (Manzhynski & Biedenbach, 2023) in resource-constrained entrepreneurial contexts. Rather than functioning solely as constraints, these tensions simultaneously function as catalysts for development.

We contribute a conceptual framework (Fig. 1) that illustrates this process. Whilst existing paradox scholarship has progressed from resolution strategies (Poole & Van de Ven, 1989) to acceptance approaches (Lewis & Smith, 2014; Schad et al., 2016), we identify leveraging sustainability tensions as a third response, where entrepreneurs actively harness tensions to drive innovation, network collaboration, and competitive advantage. Three network-level mechanisms operationalise this leveraging: circular innovation emerging from environmental constraints, certification as strategic asset, and collaborative sustainability networks. The framework is dynamic, evolving through interaction consistent with IMP network perspectives (Håkansson & Snehota, 1989; Lewis, 2000; Smith & Lewis, 2011).

5.1. Relational sustainability tensions: knotted paradoxes in entrepreneurial networks

Our findings reveal four relational sustainability tensions that manifest through and reshape network relationships, rather than operating solely as internal firm dilemmas. We examine each tension's theoretical significance by showing how specific sustainability and network paradoxes intertwine in resource-constrained entrepreneurial contexts.

The Values vs. Commerciality tension emerges when entrepreneurs' environmental and social commitments directly conflict with market-driven economic imperatives. This tension reflects the knotting of economic-social and economic-environmental sustainability paradoxes with Håkansson and Ford's (2002) enabling-constraining network paradox. Entrepreneurs cannot pursue social goals (worker welfare, community development) or environmental goals (ethical sourcing, local production) independently, these require supplier partnerships and collaborative relationships. Yet these same values-based network relationships constrain commercial scale and revenue opportunities. The knotting occurs as pursuing sustainability dimensions necessitates network relationships that simultaneously enable authentic positioning whilst constraining market access to values-aligned partners.

This extends Scott Morton and Podolny's (2002) observation of craft passion conflicting with commercial imperatives by adding

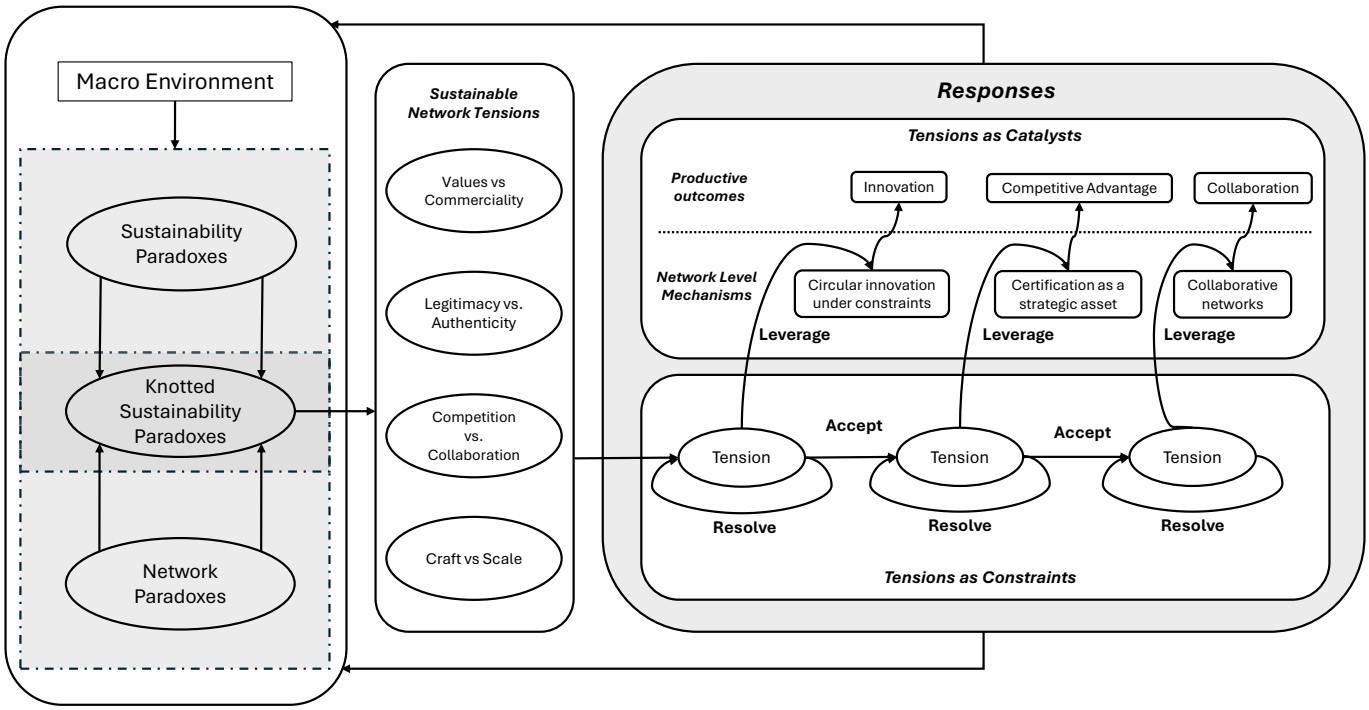


Fig. 1. Leveraging sustainability tensions in entrepreneurial network development for productive outcomes.

sustainability as a third dimension. Whilst La Rocca and Dal Molin (2024) reveal how entrepreneurs experience sustainability as personal identity tensions, we demonstrate how these manifest relationally. Values-based partner selection reconfigures supply chains, ethical supplier requirements constrain commercial scale, and social commitments limit collaboration with mainstream actors. What is theoretically novel is revealing how identity tensions create network-level consequences, as entrepreneurs cannot balance economic and social/environmental goals without navigating the enabling-constraining paradox of values-based partnerships.

The Legitimacy vs. Authenticity tension that emerges when formal certification requirements conflict with entrepreneurs' embedded sustainability practices. This tension reflects the knotting of economic-environmental and economic-social sustainability paradoxes with the enabling-constraining network paradox. Entrepreneurs face mounting institutional pressures to certify sustainability performance (environmental and social dimensions) whilst managing limited financial resources (economic dimension). Certification enables access to powerful network actors, retailers, export markets, grant programmes, yet constrains resources through compliance costs and administrative burdens. Knotting occurs as institutional legitimacy requires network relationships with certification bodies and powerful buyers, yet these same relationships impose costs that compromise actual sustainability investments.

This advances work on legitimacy challenges (Aksoy & Schnellbächer, 2025; Goworek et al., 2020) by revealing network-level consequences. Whilst Cantele and Zardini (2020) identify resource constraints limiting sustainability adoption, we demonstrate how certification systems can exclude resource-constrained firms operating most sustainably. What is theoretically novel is showing how institutional pressures create two-tier network structures, certified firms access powerful relationships despite potentially superficial practices, whilst authentic practitioners face exclusion due to inability to afford formal documentation. The performance treadmill trap we identify extends Van der Byl and Slawinski's (2015) ambidexterity tensions by revealing cumulative burdens that grow disproportionately for small operations.

The Competition vs. Collaboration tension emerges when competitive positioning imperatives conflict with collective sustainability action. This tension reflects the knotting of all three sustainability dimensions (economic, environmental, social) with both the influencing-influenced and control-no control network paradoxes. Shared environmental challenges (waste reduction, emissions), social challenges (ethical sourcing, labour practices), and economic challenges (certification costs, market access) exceed individual firm capabilities. Entrepreneurs must collaborate through knowledge sharing to influence category-level sustainability performance, yet they cannot control whether competitors adopt shared solutions or free-ride on collective efforts. The knotting occurs because addressing sustainability challenges requires building collaborative networks with competitors, yet these same network relationships create vulnerabilities around proprietary knowledge whilst lacking control over partners' actual practices.

This extends Manzhynski and Biedenbach's (2023) knotted paradoxes concept by revealing sustainability-driven coopetition distinct from market positioning motives documented in coopetition literature (Bengtsson & Kock, 2000; Gnyawali & Park, 2011). We extend current theory by demonstrating how category reputation concerns create interdependencies motivating knowledge sharing independently of competitive advantage. Competitors share sustainable solutions not for mutual market benefit but because poor performance by any producer threatens the entire category. This generates what we term coopetitive sustainability networks where individual success depends on collective environmental and social performance.

Finally, the Fidelity to Craft vs. Scaled Production tension emerges when sustainability commitments embedded in artisanal production become economically or operationally untenable at volume. This tension reflects the knotting of economic-environmental sustainability paradoxes with the control-no control and influencing-influenced network paradoxes. Sustainable craft production, local sourcing reducing transport emissions, premium natural ingredients, small-batch quality control, becomes economically impossible at scale (economic-environmental paradox). Entrepreneurs strategically plan supplier relationships to maintain quality and environmental commitments, yet growth produces unintended network reconfigurations away from small local suppliers toward larger international partners (control-no control

paradox). The knotting occurs because maintaining environmental and quality commitments requires specific network configurations (local, direct, traceable relationships), yet volume growth forces network changes that compromise these very commitments independently of entrepreneurial preferences.

This extends work on craft food tensions (Richards et al., 2021; Scott Morton & Podolny, 2002) by revealing how operational constraints drive network reconfiguration. Unlike Values vs. Commerciality reflecting deliberate ethical choices, craft-scale tensions emerge from technical requirements, local sourcing proves economically impossible at volume, premium sustainable ingredients cannot be substituted without compromising integrity, small-batch production creates efficiency disadvantages. We contribute to existing theory by revealing how quality commitments intended to maintain sustainability can necessitate network changes that ultimately compromise environmental goals. Growth forces supplier diversification from small partners enabling direct relationships and reduced emissions, toward larger suppliers facilitating volume but with reduced transparency and increased environmental impact (Govindan, 2018).

These four tensions do not operate independently but interact and reinforce each other, reflecting interconnected knotted paradoxes. Values-driven supplier selection creates legitimacy pressures when non-certified partners jeopardise market access (linking tensions 1 and 2). Competitive knowledge protection conflicts with collaborative imperatives for addressing shared challenges (linking tensions 1 and 3). Craft production commitments constrain commercial scale necessary to absorb certification costs (linking tensions 2 and 4). This demonstrates how sustainability and network paradoxes become multiply knotted (Manzhynski & Biedenbach, 2023), creating complexity exceeding individual tensions. Our identification addresses calls for research examining sustainability tensions across multiple levels (Blome et al., 2023; Brown et al., 2024) and within resource-constrained contexts (Chang & Fong, 2025; Ćorić et al., 2020). Whilst these tensions constrain entrepreneurial action, our more significant finding lies in revealing how entrepreneurs actively leverage them, transforming constraints into catalysts through the network-level mechanisms we develop next.

5.2. *Leveraging sustainability tensions: a third response through network-level mechanisms*

Before developing the leveraging response, it is important to clarify how paradoxes and tensions relate within our framework. Following Smith and Lewis (2011), we distinguish between paradoxes, the underlying contradictions inherent in pursuing simultaneously economic, environmental, and social goals (Elkington, 1998) and navigating network relationships (Håkansson & Ford, 2002), and tensions, which are the experienced manifestations of these contradictions in entrepreneurial practice. Paradoxes are persistent and irresolvable by definition (Lewis, 2000). Tensions are what entrepreneurs actually navigate in daily decision-making. This distinction matters because it clarifies what leveraging means. Entrepreneurs do not resolve the underlying paradoxes. Rather, they develop responses to the tensions these paradoxes generate, transforming constraints into catalysts.

Leveraging sustainability tensions differs from the two responses documented in prior paradox literature. Resolution strategies (Poole & Van de Ven, 1989) attempt to eliminate contradictions through choosing one dimension over another or finding temporal separation. Acceptance approaches (Lewis & Smith, 2014; Schad et al., 2016) recognise paradoxes as persistent and encourage organisations to endure tensions whilst maintaining both/and thinking. Leveraging represents a third response, entrepreneurs neither eliminate tensions nor merely endure them, but actively harness them as catalysts for innovation, competitive advantage and collaboration.

D'Antone, Geiger, and Fuschillo's (2024) concept of resonant organising provides theoretical grounding for understanding how this leveraging operates. Resonant organising describes reflexive, non-binary organising where actors do not seek to eliminate tensions but allow them to reshape practices and open new pathways. This resonates with our findings, where entrepreneurs repeatedly engage with frictions between environmental commitments, commercial imperatives, quality standards, and growth demands. Rather than pursuing resolution through standardisation or acceptance as enduring burden, engagement with tensions catalyses adaptive responses that cultivate development grounded in sustainability values whilst addressing commercial realities. Crucially, this leveraging operates through network relationships rather than within individual firms, each mechanism we identify is relational.

Three network-level mechanisms operationalise this leveraging approach and each advances understanding of sustainability in business networks in distinctive ways. The circular innovation emerging from environmental constraints mechanism operates through necessity-driven experimentation, rather than planned circular economy strategies. Where planned approaches treat circularity as strategic choice, necessity-driven experimentation emerges specifically because environmental constraints make linear production models increasingly untenable. Waste disposal restrictions, resource scarcity, and quality commitments force systematic attention to material flows, revealing a constraint-driven pathway to network embeddedness that complements Harrison et al.'s (2023) emphasis on intentional relationship building. Firms become embedded in sustainability-focused networks because they must find partners to valorise waste streams, collaborate on material flows, and coordinate circular systems. Whilst entrepreneurship literature treats resource constraints as barriers (Blome et al., 2023; Chang & Fong, 2025), this mechanism reveals how constraints create conditions for innovations. This aligns with research on entrepreneurial resource sharing (McGrath & O'Toole, 2013), adding sustainability-specific dynamics where environmental pressures simultaneously drive innovation and reshape network reconfigurations.

The sustainability certification as a strategic tool mechanism transforms institutional pressures into strategic assets through market evolution. Institutional theory perspectives treat legitimacy pressures as coercive forces requiring conformity (DiMaggio & Powell, 1983), emphasising isomorphism and compliance. Our findings show a more active process. As environmental consciousness grows amongst buyers, certification requirements shift from optional differentiation to competitive necessities, and small firms exploit this transformation through strategic positioning. Certification becomes gateway to grant funding, international markets, retailer relationships, and industry events. This advances supply chain literature (Miemczyk, Johnsen, & Macquet, 2012) which emphasises large firms imposing requirements on suppliers by showing how small firms convert compliance burdens into strategic advantages despite their limited power (Chowdhury et al., 2016). From an IMP perspective, certification becomes network access credential. Certified firms gain influence whilst facing pressures to police partners' practices, representing active exploitation of institutional pressures rather than passive acceptance or resolution.

The collaborative sustainability network mechanism operates distinctively from both traditional collective action and conventional coopetition. Traditional IMP perspectives on collective action (Baraldi, Brennan, Harrison, Tunisini, & Zolkiewski, 2007) emphasise how firms cooperate to access resources or influence institutional environments. Coopetition literature (Bengtsson & Kock, 2000; Gnyawali & Park, 2011) examines cooperation amongst competitors for market positioning advantages. Our findings reveal a different logic. Firms collaborate not primarily for resource access or market advantage but because shared environmental and social challenges exceed individual capabilities and threaten collective category reputation. Category reputation concerns create interdependencies where poor sustainability performance by any producer damages all producers, motivating knowledge sharing independently of competitive positioning. This represents a distinctive form of sustainability-driven coopetition (Manzhynski & Biedenbach, 2023), where collaboration overrides

competitive secrecy norms because individual success depends on collective category development. Conventional coopetition theory, rooted in market positioning motives, does not fully account for this dynamic.

Taken together, these three mechanisms advance understanding of network evolution in sustainability contexts in two important ways. Traditional IMP scholarship emphasises gradual network evolution through intentional strategising and relationship development (Håkansson & Ford, 2002; Halinen, Medlin, & Törnroos, 2012) with network change characterised by path dependencies and incremental adjustment (Havila & Salmi, 2000). First, our mechanisms reveal an alternative evolutionary pathway. Sustainability tensions force rapid network reconfigurations, suggesting sustainability transitions may accelerate network evolution by making interdependencies more apparent and more urgent. Second, leveraging operates through the interdependence of mechanisms rather than each mechanism independently. Circular innovations require collaborative partnerships, as waste exchange networks convert disposal problems into resource opportunities. Certification creates conditions for knowledge sharing, as certified firms share compliance experiences reducing collective burdens. Collaborative networks enable circular innovations, as regional partnerships facilitate material flows individual firms cannot orchestrate alone. This interdependence aligns with paradox theory perspectives on interconnected tensions (Schad et al., 2016), whilst adding network-specific dynamics. Leveraging one tension catalyses responses to others, creating reinforcing dynamics where productive outcomes strengthen network positions and build capabilities for transforming future tensions. This is a relational process, showing that leveraging sustainability tensions operates through, and is shaped by, network relationships.

6. Conclusion

Recent studies within the IMP tradition have addressed sustainability in business networks as both an opportunity and a challenge for entrepreneurial ventures (Harrison et al., 2023; Tura et al., 2019). We complement and contribute to this literature by advancing understanding of how sustainability tensions can function as productive forces rather than persistent challenges. Our core contribution is a conceptual framework (illustrated in Fig. 1) which offers a novel explanation of how sustainability tensions experienced by entrepreneurs in interaction, but also within macro-environmental structures, can be leveraged to drive innovation, collaboration, and competitive advantage. The framework is dynamic, evolving through interaction consistent with IMP network perspectives (Håkansson & Snehota, 1989), and positions leveraging sustainability tensions as a third response to the tensions that emerge when sustainability and network paradoxes become knotted in resource-constrained entrepreneurial contexts. We respond to calls to explore the productive potential of sustainability tensions (Bechtel et al., 2025; Brown et al., 2024) and break new ground in understanding how entrepreneurs adapt their behaviour to leverage rather than endure sustainability contradictions.

This study makes four theoretical contributions. First, we identify four novel relational sustainability tensions that emerge when sustainability paradoxes and network paradoxes become knotted (Manzhynski & Biedenbach, 2023). Each tension emerges when sustainability paradoxes (Elkington, 1998; Hahn et al., 2014) and network paradoxes (Håkansson & Ford, 2002) intertwine in ways that cannot be understood by examining either in isolation. These tensions are relational, manifesting through and reshaping network relationships. Values-based partner selection reconfigures supply chains, certification pressures create two-tier network structures, competitive knowledge protection conflicts with collaborative sustainability imperatives, and growth forces network reconfigurations that compromise environmental commitments. This extends sustainability tensions research (Tura et al., 2019; Van der Byl & Slawinski, 2015) by revealing how sustainability intensifies Håkansson and Ford's (2002) network paradoxes whilst addressing calls for research examining tensions across individual, network, and macro-environmental levels (Blome et al., 2023; Brown et al., 2024).

Second, we extend paradox theory by revealing leveraging as a third response beyond resolution (Poole & Van de Ven, 1989) and acceptance (Lewis & Smith, 2014; Schad et al., 2016). Leveraging does not eliminate the underlying paradoxes. Rather, it transforms how entrepreneurs respond to the tensions they generate, harnessing them as catalysts for innovation, network collaboration, and competitive advantage. This aligns with D'Antone et al.'s (2024) concept of resonant organising where actors allow tensions to reshape practices and open new pathways rather than seeking resolution or enduring contradiction passively. Leveraging is an active, strategic response that moves paradox theory beyond the either/or of resolution and the passive endurance of acceptance, toward a dynamic engagement with tension as a generative force.

Third, we reveal three network-level mechanisms through which leveraging occurs. Each mechanism transforms specific tensions into productive outcomes whilst operating interdependently. This extends IMP scholarship in two important ways. It reveals an alternative evolutionary pathway where sustainability tensions force rapid network reconfigurations, suggesting sustainability transitions may accelerate network evolution by making interdependencies simultaneously more apparent and more urgent (Halinen et al., 2012; Havila & Salmi, 2000). It also demonstrates that leveraging is a fundamentally relational process. The mechanisms through which entrepreneurs harness tensions operate through, and are shaped by, network relationships rather than within individual firms, adding a network-specific dimension to paradox management that existing literature has not fully theorised.

Fourth, we demonstrate that resource constraints, typically conceptualised as barriers (Blome et al., 2023; Chang & Fong, 2025; Ćorić et al., 2020), can become sources of competitive advantage when entrepreneurs leverage sustainability tensions. This contribution has particular significance for sustainability entrepreneurship research, which has examined resource constraints as impediments to sustainability adoption (Cantele & Zardini, 2020; Rudawska, 2019). Our findings show that resource-constrained entrepreneurs develop identity-driven sustainability approaches (La Rocca & Dal Molin, 2024) that enable authentic differentiation unavailable to larger, better-resourced competitors. Deep network embeddedness, collaborative capabilities, and values-driven positioning emerge not despite resource constraints but because of them. This fundamentally reframes the relationship between resources, sustainability, and competitive advantage in small entrepreneurial firms.

6.1. Implications for entrepreneurs

Our findings offer a reframing of sustainability tensions with direct practical significance for entrepreneurs. The central insight is simple: sustainability tensions need not be viewed solely as problems requiring resolution. Recognising their dual nature, as both constraints and catalysts, is the first step toward leveraging them productively.

In operational terms, this means attending differently to waste, compliance, and competition. Entrepreneurs who reframe waste disposal as a resource flow problem create conditions for circular innovation, asking what value might be created for another network actor from materials currently treated as waste. Environmental constraints, when engaged with creatively, can generate new revenue streams and authentic sustainability credentials simultaneously. Certification pressures, whilst burdensome, carry strategic potential that entrepreneurs should actively exploit. Achieving certification opens access to retailer relationships, export markets, grant funding, and industry networks unavailable to non-certified competitors. Entrepreneurs should approach certification not as a compliance exercise but as a market access investment, and should share the certification journey with peer producers to reduce collective burdens whilst building the

collaborative relationships that underpin network-level sustainability advantages.

Finally, entrepreneurs should recognise that their most significant sustainability challenges are shared ones. Engaging with competitors through knowledge sharing networks, regional branding initiatives, and collective responses to category reputation concerns creates advantages unavailable to isolated firms. Collective action around sustainability creates more value than individual secrecy, and investing in the collaborative relationships that enable this is a strategic priority.

6.2. Implications for policy

Our findings challenge conventional policy approaches that treat small firms primarily as sustainability laggards requiring assistance to catch up with larger corporations. Policymakers should recognise that resource-constrained entrepreneurs develop distinctive sustainability approaches when properly supported (Cantele & Zardini, 2020). Policy interventions should focus less on individual firm compliance and more on enabling network-level collaborations where firms collectively address sustainability challenges (Chauhan et al., 2022), including waste exchange platforms, facilitated certification networks, and regional sustainability initiatives that allow individual firms to benefit from collective positioning whilst preserving their individual identities.

A key implication concerns certification design. Current schemes, including Origin Green, B Corp, and Science-Based Targets, were largely designed with larger organisations in mind and create disproportionate burdens for small firms (Cantele & Zardini, 2020). Policymakers should work with certification bodies to develop tiered pathways sensitive to firm size and resource constraints, recognising authentic sustainability practices that predate formal certification rather than exclusively rewarding demonstrable improvement. Grant funding linked to certification should be accessible earlier in the journey, reducing financial barriers that currently exclude the most authentically sustainable small producers.

6.3. Limitations and avenues for future research

Our paper has limitations that should be acknowledged. The sample is centred on the craft food and drink sector across Ireland and Scotland. Whilst the complexity of sustainability entrepreneurship means that no two cases are the same, our analysis suggested common patterns in how entrepreneurs experience and leverage sustainability tensions. Using multiple cases enabled deeper insights and facilitated analytical generalisation within our study context (Eisenhardt, 1989; Yin, 2018). Future research would benefit from expanding the scope of investigation to include a broader range of entrepreneurs from differing sectors and cultural contexts, particularly those facing different types of sustainability pressures or operating under different governance structures, to reveal whether leveraging sustainability tensions and associated mechanisms operate similarly across contexts.

The conceptual framework contained in this paper represents a catalyst for additional research. Whilst the importance of analysing tensions at three levels is clear (individual, network, and macro-environmental), how the levels interact and influence each other deserves further attention. Future research could concentrate on specific tensions to further develop understanding. Connecting the mechanisms we identify to specific tensions might reveal which mechanisms are most effective for leveraging specific contradictions. As network development is part of an evolving, often negotiated process, leveraging sustainability tensions will have both temporal and transformative properties. Longitudinal research could shed light on how leveraging processes change as entrepreneurs gain experience and develop capabilities for harnessing tensions productively (Halinen et al., 2012; Pettigrew, 1990). Does the ability to leverage tensions improve with time and experience, or do some entrepreneurs remain trapped in resolution/acceptance cycles? Understanding this progression could inform support interventions and build theory on leveraging sustainability tensions in entrepreneurship.

CRediT authorship contribution statement

Helen McGrath: Writing – review & editing, Writing – original draft, Visualization, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Sean Tanner:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Teea Palo:** Writing – review & editing, Writing – original draft, Visualization, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **David Alton:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Conor Drummond:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Annmarie Ryan:** Writing – review & editing, Writing – original draft, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the author(s) used ChatGPT 4.0 for the purposes of minor editing and sentence structure. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

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Declaration of competing interest

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Data availability

Due to the sensitive nature of the questions asked and information shared in this study, interview and workshop respondents were assured raw data would remain confidential and would not be shared. Data is therefore not available/data used is confidential in nature.

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