Climate just entrepreneurship: feminist entrepreneurship for climate action

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Abstract

Purpose – This paper aims to explore synergies between feminist, first nations and queer theories and social, circular and climate entrepreneurship, to build a framework for supporting climate just entrepreneurship.

Design/methodology/approach – This paper draws on an extensive qualitative review of the literature on gender justice, equality, social entrepreneurship, the circular economy, climate entrepreneurship and climate action, as well as theorising feminist, first nations and queer approaches to climate action through entrepreneurship.

Findings – Whilst climate change is a "threat multiplier" for existing gender (and other) inequalities, gaps remain in engraining gender equality and gender justice principles in social, circular and climate entrepreneurship. Through analysing the literature for critical gaps and theorising at the intersection of climate entrepreneurship and feminist, first nations and queer theories, the authors advocate that a framework for climate just entrepreneurship could play a pivotal role in combining proactive climate action and gender equality measures through entrepreneurship. It could also be a significant step towards ensuring entrenched, systemic inequalities are not perpetuated in nascent and rapidly evolving fields such as the circular economy, social enterprise and climate entrepreneurship.

Originality/value – The literature on climate entrepreneurship is burgeoning, yet key entrepreneurial concepts lack an explicitly feminist or gender lens approach, even whilst being inextricably linked to effective climate action. This paper seeks to rectify this gap by promoting climate just entrepreneurship as a model for effective climate action.

Keywords Entrepreneurship, Social enterprise, Gender equality, Climate change, Climate just entrepreneurship, Climate entrepreneurship, Women's leadership

Paper type Research paper

Introduction

Climate change poses a significant threat to both human wellbeing and the natural environment. It is one of the greatest challenges facing society today and requires accelerated action to ensure a sustainable future (IPCC, 2022). The 2015 Paris Agreement urged businesses to take a more proactive approach to transforming "business as usual" practices for climate action. Companies have adopted different strategies to address climate change issues, ranging from "green-washing" to truly transformative circular economy (CE) and social enterprise tactics. This has led to the rise of climate entrepreneurship, with (Lee and Ahn 2019, p. 237) characterising this as "sensing, seeking and integrating climate change issues in business". The literature on climate entrepreneurship is burgeoning and encompasses regular forms of entrepreneurship that focus on businesses becoming more eco-aligned, as well as principles and practices related to circular approaches, doughnut economics and social entrepreneurship. However, gender justice and gender equality remain absent in the climate entrepreneurship literature and key entrepreneurial concepts, despite being inextricably linked to effective climate action.

This paper seeks to rectify this silence, using a literature review approach to identify common trends and gaps at the intersection of climate- and gender-focussed entrepreneurship literature. Our research draws on definitions of key concepts including

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the CE, doughnut economics, social entrepreneurship and climate entrepreneurship, all of which are expanded on below.

Our review finds that all these concepts are "gendered" – either in effect or by the absence of a gendered analysis. Whilst studies have sought to understand women's and other genders' entrepreneurship or gender equality in relation to at least some of these concepts (and found that gender differences exist in access to resources, funding and in experiences and impact), the concepts themselves *lack an explicitly feminist or gendered approach*. We argue that this is problematic because without dedicated focus and a gendered "lens" embedded in these common entrepreneurial models, gender inequalities can remain invisible or sidelined. This is particularly applicable to climate change. Identifying and responding to this gap, we draw on pre-existing concepts to pioneer and scope the concept of *climate just entrepreneurship*, both as a descriptor for entrepreneurial models that combine climate justice and gender equality, and as a framework for effective climate action. We also argue that this tool is more useful for integrating climate proactive and gender equality aims in entrepreneurship than is offered by the current models explored here. Critically, climate change is a "threat multiplier" for gender inequality, necessitating a more socially transformative and gender just approach to climate action than is seen currently (UN OHCHR, 2022).

This paper developed out of the entanglement of complex socio-economic realities between environmental degradation, climate change and global warming we noticed as "pracademics" (practitioner-academics) or scholar-entrepreneurs. The literature, and our experience, highlighted a critical gap: that conceptions of climate-proactive or environmentally sensitive entrepreneurship, and feminist or gendered entrepreneurship, infrequently overlapped. Extending theory developed out of a qualitative literature review, we argue that since climate change is gendered, so too should our response be through climate entrepreneurship. Women's lower social status globally puts them in a more volatile socio-economic position. Two thirds of the world's population living in poverty are women due to social norms, traditional roles and power structures that discriminate against women and exclude them from achieving economic stability (Bathge, 2010, p. 5). This is exacerbated by natural disasters, which disproportionately affect women (Erman *et al.*, 2021). Whilst the private and public sector are under pressure to take rapid climate action (Pörtner *et al.*, 2022), common entrepreneurial approaches to climate change do not adequately incorporate gender justice or equality. Both social and circular entrepreneurial approaches, combined with feminist, First Nations and queer approaches to climate justice and entrepreneurship, pave the way for entrepreneurship to not only be more environmentally just, but socially just too. Furthermore, this is integral to achieving the UN's Sustainable Development Goals (SDGs), particularly SDGs 5 (gender equality), 12 (responsible production and consumption) and 13 (climate action).

Initially, we sought to review the literature on the relationship between the CE and gender equality – focussing on the representation of women and capacity for the CE to enhance gender equality aims (or not). This stemmed from the burgeoning literature on the CE (Ekins *et al.*, 2019) and critique surrounding the CE's ability to deliver on its theoretical promises (Corvellec *et al.*, 2021), including the concern that circular principles could further entrench gender inequalities. Indeed, Corvellec *et al.* note that "the circular economy is far from being as promising as its advocates claim it to be," and Albaladejo *et al.* note that "a just and inclusive transition towards circularity calls for a stronger participation of women across the *entire* circular economy spectrum" (2021, p. 421; 2022, para 5). This methodology allowed us to comprehensively map what had been written about the intersection of gender equality (in particular women's leadership, experiences and impacts of entrepreneurship) and the CE, concluding that critiques around the CE's impact on gender inequalities were substantiated yet only the tip of the problem.

Noting that CE approaches could engrain inequalities, even unintentionally, reinforced our resolve to understand how other related forms of proactive, climate entrepreneurship could do the same. We expanded our literature review to encompass social entrepreneurship and climate entrepreneurship as two key inter-related terms. This followed what we found in the literature, including: (1) the conceptual scope-creep of CE principles into social entrepreneurship, climate entrepreneurship and even Raworth's doughnut economics model and (2) an incomplete embeddedness or absence of gender equality in climate-proactive entrepreneurship principles. We also justify our focus on the CE, social entrepreneurship, climate entrepreneurship and gender equality following a global practice shift, largely led by international organisations (e.g. the UN, Asia Development Bank and OECD) and state foreign affairs and aid programs (e.g. Australian and Irish foreign aid programs). This has seen climate and gender just entrepreneurship principles co-located in practice, but without conceptual clarity (Climate-KIC, 2022; UN Environment Programme, 2022; Asia Development Bank, 2016). This has been a key motivation for this article, which we foresee as not only contributing to an understanding of the current state of the literature on these concepts, but also providing theoretical and practical advantages to researchers and practitioners alike.

This paper therefore draws on an extensive qualitative review of the literature plus theorising feminist, First Nations and queer approaches to climate action through entrepreneurship to develop a framework for gender just climate entrepreneurship. It leverages established learnings to highlight critical gaps and opportunities. We argue that climate just entrepreneurship as a concept is useful for business, government and academia to conceptualise gender and climate aims together in entrepreneurship, and as a model, has the potential to fundamentally transform human relationships between society, the economy and the environment.

Understanding our methodology and the "gap"

This research sought to undertake a qualitative literature review, a structured method that is particularly beneficial for new and emerging research fields, creating a firm foundation for advancing knowledge and facilitating theory development (Watson and Webster, 2002). The methodological choice was crucial for understanding the research problem: that common entrepreneurial approaches to climate change do not adequately incorporate gender justice or equality. As Watson and Webster (2002) argue, this approach of analysing the past best helps in preparing for the future – a core focus of this paper. The methodology helps "to provide an overview of areas in which the research is disparate and interdisciplinary" (Snyder, 2019, p. 333). There are gaps in this methodology, in that our literature review did not seek to capture everything written on the topic. However, it is still useful to uncover common trends, understand conceptual clarity and reveal gaps.

Using Google Scholar, JSTOR and the Australian National University's library database, we searched using a combination of the following terms, such as "gender equal/ity/ities/justice", "women/s", "climate", "leadership", "enterprise/entrepreneurship", "social enterprise/entrepreneur/ship", "circular economy/ies" (and related) to develop a database of literature at the intersection of gender equality, women's leadership, entrepreneurship, social entrepreneurship, climate entrepreneurship and circular economy (see Figure 1 for guidance). We then sorted the literature based around common themes and common gaps, and utilised feminist, First Nations and queer theories to develop a framework for Climate Just Entrepreneurship – a concept we found to be critically missing in the literature but just as equally needed, given the worrying trends we uncovered in the literature review. There were inevitably several limitations or exclusions to the literature reviewed. For instance, more research exists on gender and entrepreneurship (including beyond women's entrepreneurship) and critiques of all the concepts, than was possible to analyse. Notwithstanding these limitations of scope, this paper has leveraged key literature

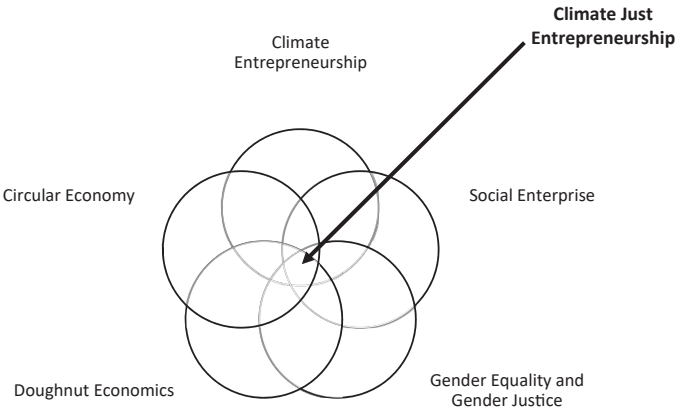

Figure 1.
Concepts relating to climate just entrepreneurship

Note(s): Venn diagram showing climate just entrepreneurship at the intersection of climate entrepreneurship, social enterprise, gender equality and justice, doughnut economics, and the circular economy

Source(s): Stephenson and Furman (2023)

examined to pave a foundation for our own theoretical development, answering some of the core gaps recognised.

By nature of background, this approach is grounded in literature on Australian studies, whilst also drawing on global research. Australia is both at the forefront of climate change – with seas rising at an estimated two times the global rate in the Torres Strait (Suppiah *et al.*, 2010) – and a laggard in climate action (Andersen *et al.*, 2022). It spearheads much of the global Indigenous Entrepreneurship literature (Hindle and Moroz, 2010) and is a focal point for work on "just transitions" given the country's heavy reliance on fossil fuels and resource extractive industries (Harris Rimmer *et al.*, *forthcoming*). Australia is, in other words, a pragmatic and strategic choice to supplement global studies.

Our paper focusses on: (1) defining the concepts underpinning *climate just entrepreneurship* and outlining the areas of literature explored and (2) mapping "where are the women?" in entrepreneurship (including in social/climate entrepreneurship) and understanding women's representation and experiences of entrepreneurship as per the global literature. Following this, (3) conceptualises climate just entrepreneurship by drawing on associated feminist, queer and First Nations theories to build a framework for its application in future research and practice. Finally, (4) we summarise ramifications of applying this approach, including risks and the "opportunity" or impact of gender inclusive climate entrepreneurship.

The intersection where climate just entrepreneurship relates to climate entrepreneurship, the CE, social enterprise, doughnut economics and gender justice and gender equality is outlined in Figure 1. These five key concepts follow the areas of literature encompassed by our review or are concepts we built off in defining *climate just entrepreneurship*.

Definitions of key concepts

Before delving into the literature, defining key terms and justifying their inclusion is necessary. Climate change has a disproportionate impact on some social groups over others, with women, gender and sexual minorities, those with disabilities, Indigenous peoples, poverty-stricken individuals, rural communities and ethnic minorities amongst those who experience the consequences of climate change most severely (Thomas *et al.*, 2018; Harris

Rimmer *et al.* forthcoming). The concept of climate justice recognises this unequal impact and attempts to remedy this social imbalance. We define climate justice as "seeking to ensure climate actions are fair, equitable and just, and contribute toward the broader Sustainable Development Goals" (Harris Rimmer *et al.* forthcoming, p. 4). This is particularly pertinent in fulfilling SDG 13B, which seeks to "promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalised communities" (UN DESA, 2015).

Other core concepts necessary to understand our climate just entrepreneurship framework include social enterprise, the CE, and doughnut economics models. Definitions of social enterprise are debated but fundamentally represent "an organizational entity with a mandate that is part business, part social" (Fotheringham and Saunders, 2014, p. 179). Griffith Yunus Centre (2021), (p. 3) argues that social enterprise is just one conception of "impact enterprise", which leverages business to create positive societal impact. Whilst much literature has critiqued the effectiveness of social enterprise business models, social entrepreneurship can be seen as inclusive of a spectrum of organisational models including non-profit and for profit, and may incorporate structures aligning to corporate social responsibility (CSR), and environmental, social and corporate governance (ESG) initiatives.

Central CE principles are somewhat related, having gained traction since the 1970s (Geissdoerfer *et al.*, 2017). The Ellen MacArthur Foundation popularised the concept with its succinct definition of "an industrial economy that is restorative or regenerative by intention and design" (2015, p. 14). Providing an alternative to the widely used linear economic model, the CE seeks to create more sustainable ways of producing and consuming to reduce and eliminate waste output (Ellen MacArthur Foundation, 2015). Circular approaches entail a closed-loop system based upon reuse, remanufacturing, refurbishment and recycling (Stockholm Environment Institute, 2019). Despite the promise of CE approaches, the UN Economic Commission for Europe (UNECE) note that an imbalance exists between pursuing sustainability/environmental or planet outcomes, and societal/social or people outcomes. They note that:

> Systematic incorporation of a gender lens in the circular economy design. . . would not only ensure a "just transition" for all, but would also inform how to make the new economic paradigm operational and sustainable (2021, p. 12).

UNECE's recognition of this gap is a critical call-to-action and justification behind the search for a gender-mainstreamed *climate just entrepreneurship* approach.

Globally, both social enterprise and CE approaches demonstrate conceptual scope-creep, with synergies and overlap in design. Social entrepreneurship and the CE are closely linked in Australia, where social enterprises operate the most extensive network of collection facilities for used goods and materials. As such, Lane and Gumley (2018) conclude that the CE in Australia would likely not exist to the same extent without social enterprises. Social enterprises are therefore well placed to engage in CE values as they propose innovative and disruptive ways to answer challenges owing to their local and collaborative nature, community-based and participative component and ability to favour a long-term perspective.

These two concepts also have similarities and overlap with climate entrepreneurship. Most prominently, this includes a holistic view of sustainability – combining both financial and environmental sustainability. Climate entrepreneurship (Lee and Ahn, 2019) combines models of eco-entrepreneurialism (Sanders and Wood, 2019) and environmental championing (Anderson and Bateman, 2000). Eco-entrepreneurialism aligns deeply with circular principles, characterised by "innovation-enhancing resource efficiency, reducing environmental impacts, meeting unmet needs of the society and transforming waste into a valuable asset" (Lee and Ahn, 2019, p. 238). It is specifically opportunity-seeking and uses

creative approaches to entrepreneurship. Conversely, environmental championing refers to enthusiastic effort and action to improve organisations' environmental performance.

Critically, the confluence of these approaches provides a possible avenue for society to limit its environmental impact and adapt to human-induced climate change (UNFCCC, 2018). Civil society organisations (like *Women in Climate Entrepreneurship*) and international organisations alike are arguing for women's critical role in climate entrepreneurship (Grantham Research Institute on Climate Change and the Environment, 2023; World Economic Forum, 2021). Yet, at present, climate entrepreneurship joins CE and social enterprise concepts in largely lacking a gender lens or gender-mainstreaming. From what we know about gender inequalities, entrepreneurship and climate change (as will be explored in the next section), gaps exist in adequately conceptualising (1) climate aims and (2) gender equality in current entrepreneurial models.

Although recognising there are other entrepreneurial frameworks to draw from, circular, social and climate entrepreneurial models closely align with Raworth's (2017) doughnut economics model. Doughnut economics seeks for human endeavours to be bounded by the nine planetary boundaries, which form the "ecological ceiling" and are supported by a core social foundation. Between these two boundaries lies the doughnut-shaped "safe and just space for humanity". Recognising the interlinkages between the economy and society, the doughnut economics model calls for a transition to regenerative and distributive economies (Raworth, 2017). Yet several institutional challenges inhibit operationalisation of this framework (Warnecke, 2023), and no country has thus far achieved the creation of a just and ecologically safe space (Economy, 2023).

These models of entrepreneurship and the economy covered above are therefore well-established platforms for climate action. However, more work is needed to tie crucial aspects of gender equality and justice to climate entrepreneurship. Gender equality strives to achieve equal rights, responsibilities and opportunities between all genders (UN Women, 2001). Incorporating gender equality and justice is crucial if climate entrepreneurship, social entrepreneurship and circular economic models are to fulfil the promise of the doughnut economic model. Despite social enterprise's many proponents, Dey and Steyaert note:

> the concept is conceived of solely as an economically viable, yet largely de-politicised [model]. . . there is a danger that social entrepreneurship might end up addressing the symptoms of the capitalist system rather than its root causes (2012, p. 90).

This provides impetus supporting our conceptualisation of climate just entrepreneurship. Whilst social entrepreneurship and other impact entrepreneurial models are widespread, their gender-blindness reinforces their co-option by the existing hegemonic system. Feretti and de Souza (2022), (p. 276) note that "entrepreneurial discourses present entrepreneurship as gender-neutral, positioning the male entrepreneur as "normal" and the female as the "other"," impacting who may become an entrepreneur and reinforcing a problematic gender binary in entrepreneurship that overshadows and overlooks those on the margins. When combined with First Nations approaches, a significant gap in current models and theories on entrepreneurship urgently need to be addressed if we are to succeed in cultivating a climate just entrepreneurial future. Although Hindle and Moroz (2010, p. 373) note that Indigenous Entrepreneurship is underpinned by a "chain of effects that connects personal wealth creation and achievement with an Indigenous community's underlying communal goals," most entrepreneurial activity and research has overlooked First Nations people and this communally transformative impact of entrepreneurship. This highlights our core argument that common entrepreneurial approaches to climate change do not adequately incorporate gender justice or equality – let alone do so in an intersectional way.

Given these significant conceptual gaps, we define *climate just entrepreneurship* as entrepreneurship that seeks to respond to climate changes and embed practices, principles

and policies that are regenerative, circular, sustainable, just and equitable. Climate just entrepreneurship may include organisations using climate proactive, CE and social enterprise business models, in combination with policies and principles that promote gender justice and social equality. Whilst our conception of entrepreneurship can be leveraged by government and other organisations to embed CE and social entrepreneurial principles, we specifically focus on climate just entrepreneurship as it applies to businesses in this paper.

To understand the nature of the gender gaps in entrepreneurship, the next section will explore women's representation and experiences in related lines of entrepreneurship and the impact of women in climate and social enterprise. This literature will form the base justification for our conceptualisation of *climate just entrepreneurship*, which will be explored after this section.

Where are the women? Feminist perspectives on climate entrepreneurship

As Feretti and de Souza (2022) observe, the entrepreneur is not free nor outside of discursive (or other) norms. Hegemonic forms of entrepreneurship legitimise men as innovators and entrepreneurs (Hechavarria and Ingram, 2016). Entrepreneurship can be linked to great innovation and economic production (Naudé, 2021). However, entrepreneurship can also be conceptually complex – referring to hero-individuals, founders and leaders (often archetypically male) (Cunningham and Lischeron, 1991; Datta and Gailey, 2012), and often used to mean "business" more generally. Entrepreneurship can be both viewed as an enormous positive, in the business of social value creation (Korsgaard and Anderson, 2011) or as a negative, particularly depending on one's status and other societal inequalities (Ratten, 2019). Entrepreneurship, as a concept, is therefore complex and value-laden. As revealed by the research, it is not gender-neutral, in imaginings or effects.

Women-led businesses represent the fastest-growing category of entrepreneurship (Jeong and Yoo, 2022). However, Jeong and Yoo's (2022) quantitative analysis of papers on social entrepreneurship and the sub-domain of women reveals that significant gaps remain in understanding how social enterprise is theorised, understood and utilised by women. Women's entrepreneurial efforts have historically been overlooked because many of these ventures operate in the informal rather than formal economy and have consequently failed to garner media, political and academic attention (Datta and Gailey, 2012). Irene's (2017) theory on "opportunity/necessity" entrepreneurs has been used to frame understandings of gender differences in entrepreneurship, with Okeke-Uzodike (2019) finding that in South Africa, men are more often "opportunity" entrepreneurs and women are more often "necessity" entrepreneurs. This fits with World Bank (2019) research highlighting that female entrepreneurs have different preferences and choices to male entrepreneurs, tending to be "pulled" into entrepreneurship by economic necessity rather than by opportunities.

At the intersection of climate change, entrepreneurship and gender, challenges abound. Women-owned businesses are often smaller, less profitable, experience slower growth, have higher closure rates and use less external finance (Carranza *et al.*, 2018). Some of these results can be explained by the sectors that women tend to operate in, which are predominantly service, retail, hospitality, health and education. In Australia, these female-dominated industries are more competitive and less profitable than those that are male-dominated (Australian Human Rights Commission, 2017). This reflects horizontal segregation across industries, which perpetuates gendered stereotypes in emerging spaces like climate entrepreneurship. Moreover, women are more likely to gravitate towards social ventures only when these are considered "low risk". This risk-aversion in financial decision-making suggests that women may be less likely to engage in entrepreneurship, "which has

historically been considered the domain of bold, aggressive, risk-taking men" (Reichert *et al.*, 2021, p. 111).

Cultural and social norms mean female entrepreneurs are disadvantaged by limited endowments (education, asset ownership, networks), discrimination (legal and financial) and other restrictions (mobility, location, family responsibilities). Furthermore, women are less likely to receive credit due to gender discrimination but are also less likely to seek external finance due to risk aversion and long-held beliefs about women and banking (Carranza *et al.*, 2018). This presents a financial demand and supply problem for women entrepreneurs. Raja *et al.* (2021) find that "there seems to be a lack of a consolidated and coordinated approach in addressing the specific needs of and requests by female social entrepreneurs", despite the inclusion of women being essential to shaping a sustainable and inclusive global recovery post-COVID-19 and in driving urgent climate action.

This has specific implications in the context of climate entrepreneurship. For instance, in Australia, growing focus is evidenced on "just transitions" – policies and support for fossil fuel industries and associated communities to transition "justly" to renewable industries and other economies, without leaving communities behind. This may involve new forms of climate entrepreneurship that transitions workers from the fossil fuel industry. Ironically, planned "just transitions" have mostly occurred in male-dominated industries. Globally, women accounted for only 28% of employees in mining, construction, utilities and manufacturing in 2020 (Foreign Policy Analytics, 2020, p. 5) and comprise only 14% of senior managers in energy production and distribution in 2021 (Pilgrim *et al.*, 2021). Women's under-representation in industries fundamental to climate transitions has a furthering impact on gender inequalities. The Australian Council of Trade Unions (2023), (para. 10) identifies this gendered risk and argues that key elements needed for an orderly closure of coal-powered power stations include that governments and society:

> [v]alue the work of female-dominated industries. Many emissions intensive industries are male-dominated. Therefore, fossil fuel economy workers are often the primary or sole income-earner in their household. Better valuing the work of workers in female-dominated industries through higher wages and better conditions would reduce the impact of fossil-fuel plant closures on households and communities.

The just transitions movement therefore highlights the need for gender-mainstreamed climate actions, paving a path to incorporating gender equality and justice in climate entrepreneurship.

Whilst the environmental sector has long evidenced high proportions of women's participation and leadership, ongoing financial and social inequalities prohibit women from maximising these opportunities to the same extent as men. In 2021, women comprised only 8.1% of Fortune 500 Chief Executive Officers (CEOs) in the private sector and 25.5% of national parliaments (Lagunas, 2021). Only 10 of the 140 heads of delegation at Conference of Parties (COP) 26 in 2021 were women (Jeffs, 2022). Although statistics on women's leadership in climate enterprises and the CE are unknown, it is likely that women in these sectors face similar challenges. Women comprised only 5% of executive board members in the male-dominated power and utilities industries in 2019 (Albaladejo *et al.*, 2022). Science, technology, engineering and mathematics (STEM) industries are similarly male dominated. In 2017, only 30% of students enrolled in STEM-related higher education fields were women (UNESCO, 2017). Given the importance of these sectors in driving climate innovation and circular transitions, women's formal leadership is likely to remain low in climate-focussed and circular enterprises unless biases and inequalities are broken down. Furthermore, institutional factors such as the domestic level of development and degree of political gender equality impacted women's representation at United Nations climate change negotiations (Kruse, 2014). This

indicates that gender inequalities are systemic and are likely to be pervasive in climate entrepreneurship, potentially undermining sustainable development.

Analysis of the CE highlights that women globally make up most of the informal waste sector workforce, typically holding jobs as collectors of recyclable waste (Wiesen, 2022). Women are also more likely to be exposed to hazardous substances, especially in the textile and footwear industries (OECD, 2020). Knowledge and research gaps on how circular transitions could benefit women and other underrepresented groups are prevalent, particularly in the Global South where most CE activities are located (ILO, 2023).

In addition, gender inequality means that women often have fewer resources to act, including in start-up and small-medium enterprise (SME) funding. Globally, women-led start-ups received just 2.3% of venture capital funding in 2020 – a drop from the all-time high of 2.8% in 2019 (Bittner and Lau, 2021). Less than 1% of global procurement goes to women-owned businesses, despite almost half of start-ups being formed by women in 2021 (Pardue, 2023). This has significant implications for climate just entrepreneurship. If women are unable to obtain equal access to funding, their ability to drive climate action through social entrepreneurship or circular initiatives will be severely hampered. Gaps remain in understanding to what degree women are represented, their equitable functional power and funding comparative to their male peers, and how other gender inequalities impact their leadership in climate enterprises.

Social enterprises play a valuable role in women's empowerment, especially in developing countries where many women become entrepreneurs by necessity. Yet, the larger the social enterprise, the less likely it is to be headed by a woman. This suggests both "glass ceilings" and "glass cliffs" exist in women's social entrepreneurship – women are less represented at higher levels, and where they are represented, those positions may be more precarious (Ryan and Haslam, 2007). Additionally, women entrepreneurs earn an average of 24% less than their male counterparts (British Council, 2017). Therefore, while social enterprise is facilitating some progress on gender equality through gender-focussed enterprises, significant challenges remain regarding stereotypes, funding, leadership and earnings.

Our conclusions from the available research reveal several key findings. (1) Women (and marginalised groups) are most at risk of climate disasters. Despite the urgency to mainstream gender in climate action, women are constrained by: (2) under-representation and financial and institutional inequalities in social entrepreneurial and circular initiatives; (3) under-representation in leadership positions across the private and public sectors, potentially hampering both economic and environmental outcomes; and (4) stereotypes, cultural expectations and discrimination which act as barriers to women's success as impact entrepreneurs and leaders in the climate economy. This has major effects when we consider that (5) existing movements like "just transitions" are at risk of perpetuating gender inequalities prevalent in the male-dominated energy and manufacturing sectors, whilst (6) concepts like social and climate entrepreneurship remain largely "gender blind". These findings demonstrate that there are substantial gaps and barriers that must be bridged to advance gender equality and climate action through entrepreneurship.

Bridging gaps: theorising climate just entrepreneurship

The rise of critical entrepreneurship studies in the last decade has encouraged the questioning of "dominant images and conceptualisations of entrepreneurship, entrepreneuring and the entrepreneur" (Berglund and Verduyn, 2018, p. 3). In this spirit, we argue that the intersection of gender, climate action and entrepreneurship deserves greater attention in current entrepreneurial models – to balance inequalities, and address the climate change emergency and changes it necessitates in entrepreneurship. Despite embodying innovative economic and entrepreneurial models, current social, circular and

climate entrepreneurship models lack inherent gender justice and gender equality measures that could be crucial in realising their full potential as responses to climate change. Drawing on Lewis (2006), whilst keeping gender "out" suggests neutrality, in practice it (re)produces a "masculine norm of entrepreneurship" and can result in "gender blindness" (Jones, 2018, p. 139), hampering both gender equality and climate action. The opportunity to build off existing concepts and put forward our new definition of climate just entrepreneurship allows us to be reflexive of where current models are not serving our goals, and to move beyond "fixed" notions of entrepreneurial models that no longer fit. The pressing need for intersectional feminist approaches to entrepreneurship further our mandate to test, contest and develop a new climate just entrepreneurial model.

The opportunity is therefore substantial. To go beyond climate entrepreneurship to climate *just* entrepreneurship requires the embedding of justice and equality throughout other related principles of sustainability and climate action. This is fundamentally where feminist, First Nations and queer theory intersect with climate action, climate justice and climate entrepreneurship. We argue that climate entrepreneurship is a driving force behind societal climate action, and effective climate action is impossible without gender justice. This is particularly so given the complexity of social and environmental inequalities. Calás *et al.* (2009) reinforce our stance, arguing that by adopting a feminist analytical lens, entrepreneurial activity can be considered more than just an economic contribution but also a complex phenomenon that can instigate social change. Additionally, Raja *et al.* (2021, para. 6) argue that female social entrepreneurs can change the lives and welfare of women worldwide by engaging in a form of impact called "scaling deep", which involves "overhauling unfair and unjust systems, sparking collaborative social movements, and reshaping dominant expectations, norms, and stigmas". Whilst Huysentruyt (2014) finds that male and female-led social ventures are not statistically different in terms of propensity to innovate, female-led organisations have been more likely to provide "first of kind" services in their region/area. Women's abilities to pioneer new markets have significant ramifications for climate just entrepreneurship, which inherently requires an ability to "do differently" and innovate.

Given social entrepreneurship and circular economic models seek to "do entrepreneurship differently", these models complement feminist, First Nations and queer theory and principles. Fundamentally, feminism aims to be emancipatory, centring marginalised voices and transforming and transferring power. Indeed, Harris Rimmer *et al.* (2023) argue that feminist stewardship during COVID-19 was critical to effective and innovative political leadership by actively seeking to "centre the margins" – a way of "doing differently" that could be applied to climate just entrepreneurship. Feminism is inextricably linked with climate justice too–Terry (2009, p. 5) asserts there is no climate justice without gender justice, reinforcing the need for intersectional approaches to understanding climate and other inequalities as mutually oppressing. Ecofeminist scholarship elevates women and other marginalised segments of society from merely being "climate victims" to climate change-agents and entrepreneurs (Terry, 2009, p. 299).

Further, queer theory lends much to the conceptualisation of climate just entrepreneurship, extending feminist scholarship and the discussion of entrepreneurship past a singular focus on women. To be queer is to question power, make the invisible visible and invert heteronormative, hegemonic, masculinised and normative spaces and institutions (Butler, 1994; McCann and Monaghan, 2020). Queer theory originally traced its academic roots to gay and lesbian studies, however, now additionally makes key theoretical contributions around relational power, identity, subversion and disruption (Jagose, 1996). To "queer" can relate to process and identity and is used in both senses in contributing to our conceptualisation of climate just entrepreneurship. In process, we seek to centre and make transparent *justice* in climate entrepreneurship – and not attend to power and justice inequalities "after" entrepreneurship

(e.g. as fall-out from entrepreneurial activity or as a beneficiary of entrepreneurial activity), but before and during. Regarding identity, we argue that due to the inextricably linked layers of oppression – gender, sexuality and otherwise – not only cisgendered women, but also trans and non-binary folk, as well as sexual minorities, are caught up in gendered inequalities "multiplied" by climate change. Existing conceptions of entrepreneurship are mostly (1) gender-blind or (2) where gendered, in a binary (Jones, 2018). Both are problematic and warrant a queer approach. Moreover, Badgett *et al.* (2019) note that LGBT (as they conceptualise it) inclusion and economic development are mutually reinforcing, whilst UNDP initiatives have sought to support and develop LGBTIQ + entrepreneurs in the Pacific as change-agents in their wider community, including around climate justice (Lyster and Pathak, 2022). This responds to critical gaps, with Hutchinson (2020, para. (1) noting that the climate justice conversation "lacks sufficient representation and voice from marginalised groups, such as people living with disabilities; lesbian, gay, bisexual, transgender, intersex and queer (LGBTIQ+) people; and migrants and refugees".

We also advocate drawing from First Nations principles of co-existence with multiple types of knowledge rather than relying on one world view (Terry, 2009). This aligns with contemporary research advocating for "a systemic decolonizing change in how Indigenous innovation is approached" (Tamtik, 2020, p. 63) – whether in government and policy, education or research. It is critical that the distribution of risks and benefits of climate adaption be undertaken with Indigenous groups to ensure just social, environmental and economic outcomes for these communities (Terry, 2009). Drawing on Begay's argument, "when we exploit, extract, and/or pollute Indigenous lands, we destroy the critical knowledge and technology that is needed to manage the climate crisis" (2021), (para 9). Given human-induced climate change is linked to the exploitation of humans and natural environments by dominant, hegemonic and colonial powers, First Nations involvement in climate entrepreneurship should extend beyond helping them address problems largely not of their own making. It also carries the responsibility to do business in ways that support and respect Indigenous Cultural and Intellectual Property (ICIP). Indeed, whilst there is now long-overdue recognition of the role and importance of traditional knowledge in combatting climate change (UNESCO, 2023), permission and consent from Indigenous custodians to use their knowledge is crucial (Janke, 2022, p. 314). Centring First Nations concerns and opportunities is a critical element of climate just entrepreneurship, supporting the transformation of existing entrepreneurial structures. Much like feminist and queer theory, First Nations theory advocates for greater opportunities, participation, knowledge, action and entrepreneurship of individuals and ideas that have been historically marginalised.

Therefore, although underpinned by gender equality and gender justice, our definition of climate just entrepreneurship is intersectional (Crenshaw, 1989). Intersectional ecofeminist principles provide important guidance to climate just entrepreneurial frameworks, given a fundamental premise of ecofeminism is the parallel between the patriarchy's (and by extension capitalism's and colonialism's) exploitation of the environment and the oppression of women and other marginalised segments of society (Mondal and Majumder, 2019, p. 484). As part of ecofeminism's commitment to exploring the intersectional nature of mutually reinforcing oppressions, it critiques Western conceptions of humanity as separate from, and above, nature (Plumwood, 1991). Ecofeminism's integrated view of the environment shares some similarities with Indigenous perspectives regarding humanity's existence within the natural environment.

Drawing off these theories is not revolutionary in and of itself, however these theories have not been adequately conceptualised in our striving to take climate action and shift entrepreneurial models to be more circular, social and climate oriented. We conceptualise *climate just entrepreneurship* as follows in Figure 2, demonstrating the different branches of literature and types of entrepreneurship we have synergistically woven together to

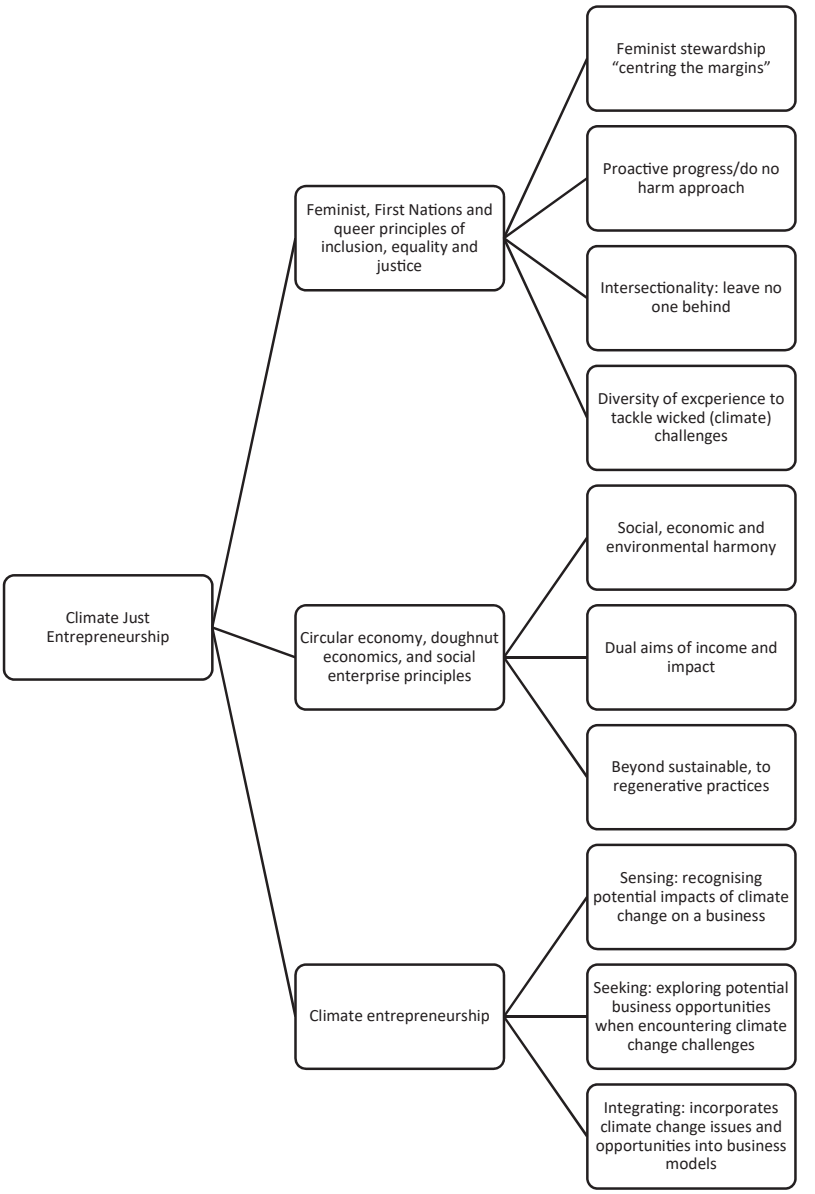

Figure 2.
Climate just entrepreneurship

Note(s): Visual conceptualisation of the climate just entrepreneurship framework and the different branches of theory and practice that it encompasses

Source(s): Stephenson and Furman (2023)

arrive at our theory. Although represented here as separate strands, each of these elements must be considered alongside one another to truly produce a climate just entrepreneurial model.

Drawing from feminist, First Nations and queer theories, we advocate that climate just entrepreneurship involves feminist stewardship that centres the margins, takes a proactive approach to gender equality progress (a "do no harm approach" common to human rights approaches), strives for intersectionality (attention to not only gender inequalities, but culture/ethnicity, disability, sexuality, etc.) and recognises the value that differences of experience, perspectives and ideas can bring to tackling "wicked" problems (those that are complex and changing, lacking clarity in a single approach to how to "fix" the issue (Rittel and Webber, 1973)) such as climate change. This gender equality and gender justice "mainstreaming" in enterprise may entail embedding key policies around gender-based procurement, parental leave, flexibility, equal pay, representation in all streams of work and leadership, reducing/mitigating discrimination, harassment and abuse, promotion of staff networks supporting diversity, equality and inclusion and other common gender equality policies.

Developing on CE and social enterprise principles, climate just entrepreneurship should strive for business models that merge social, economic and environmental goals, seek to achieve income and impact (inverting shareholder-maximising extractive traditional capitalistic entrepreneurial models), and aim to be regenerative (as per doughnut economic principles). This may include enterprises retaining dual income and impact focusses, a focus on not only shareholders, but stakeholders, encouraging enterprises to look for more regenerative methods, and embedding circular and ethical models of entrepreneurship in supply chains and through their business models, policies and practices.

Extrapolating from climate entrepreneurship principles, climate just entrepreneurship should aspire to be proactive in recognising the potential impacts of climate change on business, explore potential business opportunities that surround climate action and integrate climate change issues and opportunities into business models. This allows entrepreneurs to become active participants seeking solutions and deriving social and economic benefits from positive climate actions.

Applying climate just entrepreneurship: ramifications, opportunities and risks

The benefits of women's equal inclusion and access to entrepreneurship, as well as their pro-social and pro-environmental tendencies, support women's greater leadership and representation in climate entrepreneurship as a critical lever to ensure climate actions are sustainable and do not leave communities behind. Not only would a more embedded and supportive approach to gender equality and climate action ensure that women have greater opportunity to reap the economic benefits of climate entrepreneurship, but it would also contribute to climate enterprises' greater sustainability and impact. Critically, climate entrepreneurship is a crucial force for climate action, yet effective climate action is impossible without gender equality and gender justice. Shifting the circumstances so that women are more equally represented in leadership roles would not only benefit women by improving their socio-economic situation, but also increase efforts towards sustainable development. The creation of new, greener jobs provides an ideal opportunity for women to engage in the workforce as leaders. This would be beneficial in cultivating climate entrepreneurship and highlights the importance of ensuring current gender inequalities are not perpetuated.

The academic literature explored highlights the positive effect that women's involvement and leadership can have on both business and environmental outcomes. Firstly, on the business side, the benefits of women's leadership include more profitable outcomes, greater innovation and more prosocial behaviour (see: Foreign Policy Analytics, 2020; Pierli *et al.*, 2022; Chisholm-Burns *et al.*, 2017). Gender diversity in business is also shown to drive better

environmental performance, reduced energy consumption and greater implementation of sustainable practices (see: Strumskyte *et al.*, 2022; Cicchiello *et al.*, 2021; Braun, 2010; Akinbami *et al.*, 2019; Ajani and Igbokwe, 2013; Eynon, 2021). Secondly, failure to promote women and strive for gender equality in climate entrepreneurship not only impacts business and environmental outcomes, but also entrenches systemic inequalities. Women are already disproportionately impacted by climate change, so are more likely to face greater challenges than men as the effects of climate change intensify. This extends to the second and third order consequences of climate change too, which include migration and displacement, food and water insecurity, resource competition and conflict.

Although these issues will affect many people across the globe, women (and people with disabilities, sexual and gender minorities, ethnic minorities, those in poverty and first nations communities) will be disproportionately impacted. This is why the concept of climate just entrepreneurship matters so greatly. Climate just entrepreneurship could play a pivotal role in taking proactive climate action while supporting women-led and diversity-supporting impact enterprises. It could also be a significant step towards ensuring entrenched, systemic inequalities are not perpetuated in nascent and rapidly evolving fields such as the CE, social enterprise and climate entrepreneurship.

Conclusion

Ultimately, this research puts forward several key core arguments. Firstly, the literature indicates that women in positions of leadership positively impact on both business and environmental outcomes. Yet, our assessment indicates that women face inequalities and under-representation in leadership in the CE, climate and social entrepreneurship, and, despite their prevalence in wider environmental initiatives, continue to face inequalities in funding, resourcing and power. Secondly, the implications of women's under-representation and inequality in social and circular entrepreneurship are intensified in the context of climate change, given the "threat multiplier" factor–women are more vulnerable to the effects of climate change and natural disasters. Thirdly, whilst climate, circular and social approaches are being undertaken by the private and public sector to adapt to climate change, the notable absence of gender justice and equality in climate entrepreneurship and related initiatives risks undermining progress towards sustainable development. Despite CE models in particular being an innovative and new field providing many climate action positives, the lack of gender justice and equality in key processes, businesses and mechanisms could be crucial in realising its full potential. Whilst models such as doughnut economics have sought to rectify this, a focus on how this applies to entrepreneurship is still needed and desperately lacking in gender-mainstreaming.

The ramifications are therefore significant. Governments and organisations committing to social enterprise, CE and climate action practices must equally commit to intersectional gender equality and women's inclusion. Without this gender focus, the full potential of the CE, social enterprise and climate entrepreneurship cannot be realised. Women play key roles at the frontline of climate action and have global purchasing power and women's leadership brings significant benefits to organisational performance and long-term sustainable environmental decision-making. More gender unequal countries will likely suffer the effects of climate change more acutely, and the "threat multiplier" effect of climate change on women means that second and third order effects of inequality would likely have a crippling effect on climate actions.

Common practices in other areas of entrepreneurship and gender equality include the use of quotas, evaluation of programs and initiatives designed to create equality, mandatory participation of women in formal leadership, financial and legal support for women entrepreneurs, transformation of gender norms restricting women's equal participation in

education, entrepreneurship and leadership and regulatory and policy changes to enable women's greater participation in formal entrepreneurship. Further, existing frameworks and structures exist to support women's entrepreneurship, with some organisations and governments committing to gender-based procurement quotas and a growing emphasis on supporting women entrepreneurs through venture capital. Therefore, climate just entrepreneurship does not necessarily require a fundamental "remaking of the wheel" – but is critical for ensuring existing policy frameworks, support structures, funding opportunities and more benefit from "joining the dots". Ultimately, gender equality and justice in climate entrepreneurship is pivotal to ensuring that our climate actions are fair, effective and sustainable. Failure to achieve climate just entrepreneurship risks societies perpetuating gender and other inequalities in our climate actions, hindering sustainable development.

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