



Deposited via The University of Leeds.

White Rose Research Online URL for this paper:

<https://eprints.whiterose.ac.uk/id/eprint/242157/>

Version: Accepted Version

Article:

Snell, M., Al-Tabbaa, O. and McEachern, M. (Accepted: 2026) Coupling Responsible Innovation and Sustainable Business Model Innovation to Address Grand Challenges. Journal of Product Innovation Management. ISSN: 0737-6782 (In Press)

This is an author produced version of an article accepted for publication in Journal of Product Innovation Management, made available via the University of Leeds Research Outputs Policy under the terms of the Creative Commons Attribution License (CC-BY), which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

Reuse

This article is distributed under the terms of the Creative Commons Attribution (CC BY) licence. This licence allows you to distribute, remix, tweak, and build upon the work, even commercially, as long as you credit the authors for the original work. More information and the full terms of the licence here:

<https://creativecommons.org/licenses/>

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.

Coupling Responsible Innovation and Sustainable Business Model Innovation to Address Grand Challenges

Matthew Snell

Department of Management, Business Education and Law School
University of Huddersfield, Huddersfield, U.K.

Omar Al-Tabbaa

International Business Department, Leeds University Business School
University of Leeds,
Leeds, UK

Moven McEachern

Department of Marketing, Tourism and Destinations, Chester Business School
University of Chester
Chester, U.K.

Cite as:

Snell, M., Al-Tabbaa, O. and McEachern, M. (forthcoming) 'Coupling responsible innovation and sustainable business model innovation to address grand challenges', <i>Journal of Product Innovation Management</i> . Accepted for publication.

16th June 2026

Coupling Responsible Innovation and Sustainable Business Model Innovation to Address Grand Challenges

ACADEMIC ABSTRACT

Innovations designed to address grand challenges within the social innovation sector can have unintended consequences, particularly where organizations pursue triple-bottom-line objectives under resource constraints. Yet research on coupling responsible innovation (RI) and sustainable business model innovation (SBMI) largely frames this as aspirational rather than theoretical, leaving it conceptually underdeveloped and empirically underexplored. Accordingly, this study asks: How can organizations operating within institutionally weak environments embed RI to make their SBMI processes more responsible? Utilizing a 10-year longitudinal study of a social enterprise delivering off-grid solar in Africa, we identify three SBMI cycles and develop a process framework for RI-SBMI coupling. We outline four RI-shaped organizational capacities that support business model evolution as a dynamic, principle-driven process in which RI functions as a sensitizing framework rather than a fixed ethical template. We further demonstrate that paradox management, through the mechanisms of experimentation, relinquishing control, and value prioritization, is central to responsible SBMI. We also show that RI principles are not applied equally; instead, their importance changes depending on organizational capacity and the part of the business model. Finally, by grounding these dynamics in an institutionally weak context, the study advances theory on responsible business model evolution.

PRACTITIONER ABSTRACT

- Low-income households in resource-constrained settings characterized by rural poverty, limited infrastructure, and constrained market access, are some of the most vulnerable to the impacts of grand challenges. Therefore, to avoid unintentional reinforcement of structural inequalities, it is essential to conduct regular, inclusive consultation with stakeholders. Ideally, this is undertaken during SBM development but can and should be applied to existing SBMs.
- Within institutionally weak contexts, systematically identifying and assessing opportunities, both internal and external to the organization, and innovating to accommodate them, can improve geographic reach and market competitiveness.
- When working with environmentally friendly technologies and practices, a critical, reflexive review should be continuously undertaken, ideally incorporating in-house expertise and neutral, external input (e.g., from research organizations).
- The creation of greater social and environmental values will require a willingness to sacrifice some economic value capture. Therefore, coupling the principles between RI and SBMI can help achieve this while maintaining economic viability.
- For profit-making companies, inclusive stakeholder engagement may enhance organizational legitimacy and build a low-income customer base, while systematic identification of opportunities supports competitiveness and innovation. Coupling RI and SBMI helps balance social, environmental and economic objectives, potentially improving credibility.

Keywords: Responsible innovation, sustainable business model innovation, social enterprise, institutional fragility, grand challenges, paradox management, longitudinal case study, Sub-Saharan Africa.

Acknowledgements: We would like to thank everyone who took part in our research and offered valuable time and insights. The usual disclaimers apply.

Disclosure statement: No potential conflicts of interest were reported by the authors.

Funding: No funding was received for this research.

1 INTRODUCTION

Climate change, poverty, and inequality are grand challenges that affect millions of people worldwide and while various innovations have emerged that aim to tackle such challenges (Voegtlin et al., 2022), numerous high-profile cases have demonstrated that scientific and technological advancements have intensified social deprivation and contributed to environmental disasters rather than alleviating them (Scherer and Voegtlin, 2020) thus, resulting in crises and a loss of public trust (Long and van Waes, 2021; Owen et al., 2021a).

Aiming to align scientific research paradigms more closely with societal needs and values (Owen et al., 2021a), the responsible innovation (RI) concept gained traction at the beginning of the 2010s, emerging from crises such as pesticide overuse (Carson, 1962), the Three Mile Island accident in 1979, explosions at Bhopal and Chernobyl (in 1984 and 1986, respectively) and mad cow disease in the 1980s and 1990s (Macnaghten, 2020). Foundational works characterise RI as “both old and new” (Stilgoe et al., 2013, p. 1568) building on a “rich history” (Owen et al., 2013, p.22) of ethical reflection, public engagement, anticipatory governance and co-production between science and society (Jasanoff et al., 2001; Macnaghten, 2020) rather than introducing entirely new principles. RI emphasizes the importance of anticipating potential impacts, reflecting on ethical and social implications, inclusively engaging stakeholders, and acting transparently to ensure that innovation processes are accountable to societal concerns (Brand and Blok, 2019; Owen and Pansera, 2019). However, RI has been criticized for lacking a focus on power imbalances and the broader political-economic structures that shape innovation trajectories (Genus and Iskandarova, 2018).

Concurrently, growing pressure on businesses to respond to sustainability imperatives has led to the emergence of sustainable business model innovation (SBMI) (Evans et al., 2017; Bocken et al., 2014). SBMI refers to redesigning a firm’s business model to create social, economic, and environmental value, thereby addressing sustainability challenges while maintaining competitiveness (Shakeel et al., 2020). However, SBMI, has been criticized for insufficient focus on socio-ethical considerations during innovation, retaining emphasis on economic and environmental sustainability while neglecting deeper

ethical considerations, such as justice, equity, and the moral implications of technological advancements (Bocken and Short, 2016; Stubbs and Cocklin, 2008).

Given their shared normative grounding and concern for societal outcomes (Owen et al., 2021b; Ambos and Tatarinov, 2022), as well as their limitations, recent scholarship has called for greater integration of RI and SBMI (Long and van Waes, 2021; Magni et al., 2024), which we term RI-SBMI coupling. We refer to this coupling as the substantive alignment between RI principles and the decision-making rules that organizational actors employ when they (re)design elements of their sustainable business models. This alignment can emerge from deeply held organizational socio-ethical values and mission commitments that are substantively consistent with RI principles, rather than requiring conscious recognition of the RI framework as a named schema. Coupling is, therefore, visible when RI principles are *operationally embedded* in choices regarding value creation, delivery, and capture, informing how value propositions are framed, which customer segments are prioritized, which delivery channels and partners are selected, and how trade-offs are handled. They act as a set of guardrails rather than functioning as external checklists applied after decisions have already been made. Where this is the case, decisions are not driven by economic or environmental logics alone but carry an ethical orientation that constrains and redirects purely commercial options.

The risks of neglecting such coupling are evident. For example, in sectors like off-grid energy, sustainable business models originally aimed at serving rural, energy-poor homes have drifted toward more commercially viable urban markets, marginalizing vulnerable communities in the process (Barry and Creti, 2020; Clowes et al., 2019). This drift highlights the danger of SBMI that is not anchored in robust socio-ethical commitments: without strong normative guidance, even well-intentioned innovations may reproduce exclusion and undermine fair transition (Brand and Blok, 2019).

Building on this foundation, we identify several gaps in the literature. First, despite increasing interest in coupling the RI and SBMI concepts (Long and van Waes, 2021; Magni et al., 2024), existing research largely frames their coupling as an aspiration rather than a theoretically specified mechanism. Consequently, the connection between these frameworks remains conceptually underdeveloped and empirically underexplored. Addressing this gap requires unpacking the process through which RI

principles are embedded by managers and key stakeholders into the different components of SBMI design and operationalized across organizational and field-level dynamics (Degbey et al., 2024; Liu et al., 2024). This focus is particularly necessary to advance the overlapping literature on SBMI processes and RI by providing nuanced insights into the guarding role of RI principles in developing responsible sustainable business models (Ranabahu, 2020).

Second, organizations that pursue SBMI face inherent *trade-offs* when attempting to achieve triple bottom line objectives while maintaining ethical integrity (Bacq and Aguilera, 2022; Kumar et al., 2023). Hybrid organizations, such as social enterprises, are particularly exposed to these tensions as they must balance their social mission and financial viability (Jay, 2013). Embedding RI principles into their sustainable business models can serve to maintain this balance; however, current research provides limited insights into how organizations can recalibrate value propositions, negotiate ethical dilemmas, and maintain the viability of their sustainable business models, particularly under resource constraints (Smith and Besharov, 2017). Because these tensions evolve and re-emerge over time, they cannot be fully understood through cross-sectional snapshots. Also, longitudinal evidence on how they unfold, particularly in response to grand challenges, such as energy poverty in excluded regions, remains scarce (Halme and Korpela, 2014).

Third, while prior research has highlighted the enabling role of regulatory bodies in fostering RI adoption (Owen et al., 2021a; Voegtlin and Scherer, 2017), it remains unclear how organizations can effectively couple RI with SBMI in the absence of strong institutional drivers. This gap is critical because RI-SBMI coupling is more complex in settings of institutional weakness, where regulatory enforcement is limited and societal expectations surrounding ethics and sustainability are fragmented and weakly supported (Anand et al., 2023; George et al., 2012). This challenge is salient in sub-Saharan Africa, where institutional voids can constrain both formal governance mechanisms and the informal norms that typically support responsible business conduct (Umoru et al., 2025). In such contexts, societies and organizations cannot rely on external pressures to steer innovation in socially and environmentally responsible directions, thus raising important questions regarding how organizations internally generate, sustain, and operationalize ethical commitments as part of their SBMI processes.

We respond to the above gaps by posing the following research question: **How can organizations operating within institutionally weak environments embed RI to make their SBMI processes more responsible?** To investigate this question, we conducted a longitudinal case study on Sunny Money, a social enterprise that delivers off-grid solar energy in rural sub-Saharan Africa. Drawing on 10 years of primary and secondary data, we employed an inductive research design to trace the evolution of Sunny Money's business models across three distinct cycles. Therefore, while our *unit of analysis* is the organization (i.e., Sunny Money's business model), our *level of analysis* is the intraorganizational processes of embedding RI principles into SBMI across sequential business-model innovation cycles (Yin, 2018). Critically, we consider 1) interactions between Sunny Money and external network actors (e.g., business agents, schools, and suppliers), and 2) macro institutional features in sub-Saharan Africa, as contextual factors that shape these processes, not as independent units of analysis (Johns, 2006; Uzzi, 1997)¹.

Overall, our study advances understanding of the synergistic relationship between RI and SBMI in several ways. *First*, we bring together two largely parallel streams of literature (RI and SBMI) by moving beyond normative claims and developing a process framework that explains how organizational leaders and boundary-spanning staff can embed RI principles within the iterative development of sustainable business models. Responding to concerns that RI is often detached from operational realities and is difficult to implement (Genus and Iskandarova, 2018; de Hoop et al., 2016), our framework shows how managers and key stakeholders translate RI principles into continuous adjustments of key SBMI components (value proposition redesign, reconfiguration of value creation and delivery, and value capture transformation). We theorize four sequential RI-shaped organizational capacities (equity-centered value orientation, regenerative sustainability logic, contextual innovation capability, and paradox navigation logic) that explain how the RI-SBMI coupling drives the socio-ethical evolution of sustainable business models. *Second*, we highlight paradox management as being central to responsible SBMI, thereby

¹ Consistent with Uzzi's view of ties and network as mechanisms that shape organizational outcomes, and Johns's treatment of context as constraints and enablers of relationships, we treat external actors (agents, partners, and institutions) as contextual factors that influence our focal organization-level SBMI process rather than as independent units of analysis.

revealing that tensions are not episodic problems but persistent features of simultaneously pursuing social, economic, and environmental value (Smith and Lewis, 2011; Jay, 2013). Here, we identify three mechanisms (experimentation, relinquishing control, and value prioritization) through which organizations can keep the process moving while making responsibility governable in practice. *Third*, we contribute to the RI literature by demonstrating that RI has a temporal structure: its principles do not carry the same weight throughout the SBMI process but become more or less central at different points, thereby highlighting the changing role of RI principles over time. *Finally*, by situating our analysis in institutionally fragile contexts (i.e., sub-Saharan Africa) we show how embedding RI principles can partially compensate for weak regulation and fragmented institutional systems. In doing so, we highlight RI-SBMI coupling as an organization-level response to institutional voids, that enables sustainable innovation to be pursued responsibly despite volatile and under-regulated market conditions.

2 THEORETICAL BACKGROUND

2.1 Responsible Innovation

Responsible Innovation (RI) seeks to guide scientific and technological development toward socially desirable, ethically grounded, and environmentally sustainable outcomes through shared responsibility and stewardship (von Schomberg, 2019). It is commonly structured around four dimensions, these being anticipation, reflexivity, inclusion, and responsiveness (Stilgoe et al., 2013), as covered in the editorial of this special issue which provides an overview of the emergence of RI and its definition. Taken together, the dimensions provide a framework for addressing societal grand challenges by ensuring innovation is forward-looking, reflective, participatory, and adaptable (Scherer and Voegtlin, 2020; Owen et al., 2021b). *Anticipation* refers to the capacity to consider the potential long-term societal and environmental impacts of innovations, urging innovators to proactively consider risks and unintended consequences (Stilgoe et al., 2013). *Reflexivity* requires innovators to critically examine their values, assumptions, and motivations, pushing for innovation processes to be guided by ethical self-awareness (von Schomberg, 2019). *Inclusion* mandates the meaningful engagement of diverse stakeholders, thus incorporating multiple perspectives to ensure equitable innovation outcomes (Kanter, 1999; Stilgoe et al., 2013). *Responsiveness* necessitates adaptive governance mechanisms that enable innovation trajectories to evolve in response to societal

concerns and environmental challenges (Owen et al., 2021b; Stilgoe et al., 2013). Management scholars (e.g., Bacq and Aguilera, 2022; Scherer and Voegtlin, 2020; Owen et al., 2021b; Voegtlin and Scherer, 2017) recently directly linked RI with addressing societal grand challenges. Thus, RI's four-dimensional framework can be perceived as a conceptual scaffold for guiding scientific and technological efforts toward innovative, ethically grounded, solutions (Long and van Waes, 2021, Stilgoe et al., 2013). Yet, and despite its ethical aspirations, the RI framework can be criticized as still lacking the pragmatism necessary for widespread adoption (Owen et al., 2021b; van de Poel and Sand, 2021). Its strong emphasis on precautionary governance and stakeholder deliberation often results in procedural rigidity, thereby hindering the agility required for firms operating in dynamic and competitive markets (Owen et al., 2013; Stilgoe et al., 2013). Its reliance on broad, normative principles can fail to provide strategies to balance social responsibility with financial sustainability (Scherer and Voegtlin, 2020). This limitation is particularly problematic for firms that must balance ethical responsibilities with profitability and resource constraints (Ambos and Tatarinov, 2022; Rip and Rip, 2018). Furthermore, RI's emphasis on processes limits the ability to measure its impact on sustainability and societal well-being (Kumar et al., 2023; van Lente et al., 2017). Without clear economic incentives or mechanisms for integrating sustainability with value creation, RI risks being perceived as an aspirational yet impractical framework (Gurzawska, 2020). Overall, these limitations (summarized in Online Appendix Table A) have led to slow adoption of the RI approach (Owen et al., 2021a).

Consequently, theoretical (Magni et al., 2024; Pan et al., 2023) and empirical (Long and van Waes, 2021; Lehoux et al., 2021) calls have been made to incorporate alternative management or business-centric approaches, such as SBMI, which can provide a structured and market-driven mechanism to embed sustainability into an organization's innovation process.

2.2 SBMI Dynamics

Companies operating with profit-centric business models have been challenged to move beyond narrow profit logics (Evans et al., 2017; Geissdoerfer et al., 2018) giving rise to sustainable business models (SBMs). Building on the traditional business model construct (Amit and Zott, 2001; Chesbrough and Rosenbloom, 2002; Osterwalder and Pigneur, 2010), SBMs integrate social, economic, and environmental

value creation for multiple stakeholders, while seeking to reduce negative impacts (Bocken et al., 2019; Ringvold et al., 2023; Schaltegger et al., 2016a). Yet, while earlier work clarifies *what* SBMs look like, it says less about *how* they emerge (Geissdoerfer et al., 2018), thus shifting attention to SBMI. SBMI is a dynamic, iterative process of redesign involving exploration, piloting, and scaling (Inigo et al., 2017; Bocken and Geradts, 2020; Shakeel et al., 2020). In practice, SBMI behaves less like a linear pipeline (i.e., explore-pilot-scale) (Coffay et al., 2024; Ritala et al., 2018) and more like a turbulent search process influenced by organizational inertia, stakeholder resistance and recombination across value propositions, partner incentives, and revenue logic (Foss and Saebi, 2017; Shakeel et al., 2020; Bhatnagar et al., 2022; Rathobei et al., 2024).

Dynamic capabilities (DCs) theory (Teece et al., 1997; Teece, 2007; Eisenhardt and Martin, 2000) has been explicitly connected with SBMI, researchers demonstrating that DCs can enable incremental and radical sustainability transitions (Inigo et al., 2017), and mediate between sustainability intentions and implementation (Coffay et al., 2024). Drawing on the sensing-seizing-transforming framework (Teece, 2007), Coffay et al. (2024) highlight that SBMI requires organizational design changes, where DCs function as mediators between strategic intent and execution. Inigo et al. (2017) reveal that sensing opportunities, seizing them through stakeholder integration and clean technologies, and reconfiguring resources for systemic change support both incremental and radical transformations in SBMs. Recent reviews also argue that DCs for SBMI must extend beyond internal reconfiguration to encompass stakeholder integration and legitimacy-building efforts (Ortiz-Avram et al., 2024). However, despite its process ambition, DCs scholarship often operationalizes these capabilities as discrete and relatively stable categories (e.g., sensing versus seizing), underplaying how they overlap, co-evolve, and become reworked in context. This has prompted calls for greater attention to underlying practices, activities, and contextual contingencies in explaining the SBMI process (Faccin et al., 2025; Ringvold et al., 2023).

Recognizing the promise and limitations of the DCs concept, complementary SBMI frameworks focus upon three interconnected elements, these being, value proposition redesign (calling for a departure from product-centric logics toward service-oriented approaches) (Geissdoerfer et al., 2018), value creation and delivery reconfiguration (to restructure upstream and downstream activities, partner

networks, and technologies) (Evans et al., 2017; Lüdeke-Freund et al., 2018), and value capture transformation (such as shared value creation and multistakeholder financial models (Mignon and Bankel, 2023)). However, these reconfigurations can mask exploitative dynamics (Hossain et al., 2025), for example, greenwashing (Boons and Bocken, 2018), externalizing polluting components of a value chain to regions with institutional voids (Al-Tabbaa et al., 2024), financializing impact rather than lived realities (Casanovas and Jones, 2022), or reinforcing elitism and excluding marginalized voices (Reece et al., 2022).

Therefore, despite its sustainability-oriented aspirations, SBMI remains embedded in market logics that often prioritize economic imperatives and incremental innovations, with a reliance on voluntary corporate action (Stubbs and Cocklin, 2008; Bocken and Short, 2016; Schaltegger et al., 2016a;) with the risk of reproducing inequality and environmental degradation.

Together, these limitations indicate that without stronger ethical guidance, the SBMI process can merely perpetuate business-as-usual practices under the guise of sustainability thus, underscoring the complementary and important role of RI in providing guardrails.

2.3 Coupling RI and SBMI

This section examines the relationship between RI (rooted in science and technology studies) and SBMI (grounded in business and management). Rather than treating the two frameworks as interchangeable, we clarify how they converge, where they differ, and why their integration remains theoretically and practically difficult.

Although both RI and SBMI literature call for more responsible and sustainable innovation, they articulate this demand in different ways. RI is framed as “science for society [and] with society” (Owen et al., 2013, p. 36), whereas SBMI emphasizes innovations that create positive, or reduce negative, impacts for the planet (Bocken et al., 2014). Both emphasize deeper societal engagement (Bacq and Aguilera, 2022) and the need to act on stakeholder input, although they label this differently. Thus, we treat RI and SBMI as interconnected, rather than parallel concepts and examine how they can be *coupled* in practice. In essence, SBMI focuses on creating and implementing business models pursuing triple bottom line objectives, which necessitates rethinking value creation, delivery, and capture mechanisms to minimize ecological footprints and enhance societal well-being (Ringvold et al., 2023). Conversely, RI emphasizes

the ethical dimensions of innovation, ensuring that new products/services and their underpinning processes align with societal values, are socially acceptable, and ethically sound (Genus and Iskandarova, 2018). Therefore, we argue that coupling RI principles to SBMI processes is necessary for developing a theoretical framework capable of addressing the multifaceted complexity of grand challenges (e.g., poverty or lack of energy) in both innovative and responsible ways.

More specifically, SBMI is unlikely to achieve its full potential unless it is grounded in principles of responsibility, since the long-term success of sustainable initiatives depends on securing and maintaining a social license to operate (Prno and Slocombe, 2012), which is closely linked to ethical considerations and societal acceptance (Guo et al., 2022). However, important conceptual ambiguities and practical tensions remain in prior efforts to integrate RI and SBMI frameworks. For example, Long and van Waes (2021) connect RI and SBMI in the context of bike-sharing business models. They position RI as a mechanism for ensuring that innovation addresses societal and environmental challenges ethically, while SBMI integrates sustainability into business strategies. However, we argue that their perspective is somewhat normative and optimistic, as it overlooks tensions highlighted in innovation systems theory, particularly power dynamics and market pressures that can undermine ethical objectives. It also underestimates trade-offs, including how RI's deliberative processes may reduce the agility of SBMI. Empirically, Lehoux et al. (2021) examine responsible health innovations, thus demonstrating how business models aimed at creating long-term societal value struggle within financially driven systems. Similarly, Ambos and Tatarinov (2022) highlight the role of intrapreneurship in fostering RI within international organizations, thereby revealing how institutional politics shape the feasibility of responsible innovation. Critically, Blok and Lemmens (2015) raise questions regarding the moral legitimacy of RI itself and caution against its rhetorical appropriation. Their critique resonates with similar concerns in SBMI, where sustainability language is occasionally co-opted without genuine transformation (Mendes et al., 2024; Tuckerman et al., 2023). Ivanova et al. (2023) have deepened this critique by showing that RI adoption varies with discursive frames, incentives, and stakeholder interests, where certain firms engage with RI to align with societal values, but others symbolically adopt it to boost legitimacy.

Taken together, these studies emphasize that, while both RI and SBMI share the goal of promoting societal value and hold potential for creating synergies, their coupling to help navigate complex organizational dynamics remains underdeveloped. This reinforces the call for a more critical, context-sensitive approach and, thus, acknowledges the inherent contradictions and trade-offs that influence *embedding* responsibility into sustainable innovation.

Embedding RI in SBMI

To clarify this point, we distinguish between coupling and embedding. In theorizing RI-SBMI coupling, we treat RI principles as a distinct set of guiding values that can be institutionalized in organizational practice. Principles-based approaches argue that values become consequential only when woven into governance structures, decision criteria, and everyday routines, rather than remaining mission statements (Burford et al., 2016). Similarly, values-based innovation research reveals how shared values shape innovation portfolios, stakeholder participation, and design choices (Breuer and Lüdeke-Freund, 2017). Together, these views suggest that RI matters not as an external ethical overlay but as a set of moral resources that can shape organizational action.

Within this framing, coupling depicts the relationship, where RI and SBMI become linked when RI principles systematically inform business model innovation. In contrast, embedding depicts the mechanism through which this linkage is enacted. Thus, embedding refers to how anticipation, inclusion, reflexivity, and responsiveness are enacted by managers and key stakeholders within the design and evolution of SBMs, for example, as explicit design criteria, rules structuring participation, or routines that trigger reflection and adjustment. This enactment does not necessarily involve explicit recognition of the RI framework by name. Where organizations operate from socio-ethical values *substantively consistent* with RI principles, embedding can occur as a *de facto* process driven by mission rather than formal framework adoption. Therefore, SBMI provides a structural and procedural platform where RI principles are made actionable through repeated reconfiguration of value creation, delivery, and capture, while RI provides the normative orientation that disciplines and redirects SBMI when addressing grand challenges.

3 METHODS

We adopted a longitudinal single-case study approach, which began in 2012, to capture organizational change processes and the factors affecting them (Bansal and Corley, 2011).

3.1 Research Setting

Our empirical setting focuses on inclusive energy access as a grand challenge (Mahto et al., 2020; Voegtlin et al., 2022), with particular attention to off-grid electrification in sub-Saharan Africa. Access to energy is a driver of socioeconomic development (Bhatia and Angelou, 2015), with potential to alleviate poverty-related challenges, including poor health, limited education, and constrained economic opportunity. While grid extension remains cost-effective in densely populated areas, off-grid systems, particularly solar technologies, are considered the most viable solution for rural communities in sub-Saharan Africa, where 80% of the world's energy-deprived population resides (International Energy Agency (IEA), 2021). However, the recent collapse of high-profile off-grid companies (Cross and Neumark, 2021) alongside a shift in market focus from rural energy-poor communities to more affluent urban consumers (Barry and Creti, 2020) has dampened the early optimism surrounding off-grid electrification (Clowes et al., 2019). Further, financial overvaluation (Clowes et al., 2019) and the liquidation of firms (Cross and Neumark, 2021) have led investors to redirect resources toward urban and peri-urban markets, where creditworthiness is higher and profitability more assured (Barry and Creti, 2020; Cross and Neumark, 2021). Given these shifts risk systematically excluding the populations most in need, thereby reproducing structural injustices (Groenewoudt and Romijn, 2022), this narrowing of focus toward commercially attractive segments comes amid growing calls for more innovative and flexible business models to deliver renewable energy in more inclusive ways (Chirambo, 2018; International Renewable Energy Agency (IRENA), 2017).

3.2 Selection and Context of the Case Study

To address our research question, we identified an organization that provides energy access to rural communities in Zambia as our research context because we consider it representative of the disparities in electricity access that appear across large parts of sub-Saharan Africa.

The organization studied, *Sunny Money*, is an international social enterprise providing renewable off-grid energy in sub-Saharan Africa, its mission revolving around provision of electricity for energy-poor rural households. It operates in Malawi and Zambia and supports solar partners in Senegal and Uganda. Beginning in 2006, it was one of the first organizations to introduce and distribute individual pico-solar lights (a few with mobile phone charging capability) and solar home systems. As of 2025, it has sold and distributed over two million solar products and is considered a leader in the sector (Munro et al., 2022).

3.3 Timeline of the Case Study

Access to Sunny Money was granted in 2012, while the lead author was living in Zambia. During this time, the researcher worked part time as a consultant and mentor to the organization for two years, maintaining email contact after leaving Zambia and undertaking two further visits to conduct field research, thus providing sustained periods of engagement (Yin, 2018). While the lead author's prior involvement could potentially introduce personal bias, the research process was safeguarded through independent and objective peer review. The second and third co-authors, who had no prior knowledge of the organization, ensured integrity and impartiality in the analysis. Furthermore, our research explores strategic high-level concepts rather than cultural or organizational theories.

3.4 Data Collection

Following Yin (2018), data was collected and triangulated from multiple sources, thus ensuring at least three forms of corroborating primary and secondary evidence, including extensive semi-structured interviews with key informants; review of internal and publicly available documentation; and notes and observations made during field studies (see Table 1).

[Table 1]

Primary data was collected via in-depth semi structured interviews held across multiple sites with five key members of staff and seven agents.² Senior staff were selected because as key actors they understand the organization's identity, history and business strategy and can provide access to key

² "Agent" refers to a reseller or micro-franchisee who sells the products on behalf of the organization, managing some product distribution, and sending feedback and evaluations on the process.

resources and documents (Daft and Weick, 1984; Corley and Gioia, 2004). “Agents” were selected because of the role they play in the organization’s business model.

Interviews were held over several days, with some individuals interviewed on multiple occasions. Interviews were designed to collect and triangulate the views of the chief executive officer, the Zambian senior management team, and key personnel. All interviews were conducted in English and recorded, with participants providing informed consent, following research approval by the first author’s university ethics committee. Interview questions were grouped into themes that explored the creation of the social enterprise (consideration of other models, potential afforded by the selected model); alignment between model and fulfilment of dual or triple bottom-line objectives; organizational performance (achievements and links back to objectives); operating environment and adaptations (innovation pilots, successful and unsuccessful); financial sustainability (relations with board, funders, stakeholders, competing objectives, trade-offs); customer prioritization (means of verification, mission (re)orientation, social, environmental, economic resource allocation); static or dynamic model (innovation evolution, influencing factors).

As interviews progressed, greater attention was paid to the social, ethical and environmental dimensions of operations and the innovations the organization piloted, particularly how these initiatives shaped decision-making and subsequent business model adjustments. In line with interpretive research guidelines (Gioia et al., 2013), interview questions evolved, enabling informants to lead the inquiry, revisiting earlier topics, and probing emerging patterns around how responsibility-oriented considerations influenced innovation choices.

Table 1 lists secondary data sources and evidence utilized for corroboration and triangulation. Sunny Money provided access to over 10 years of financial data, sales records, end-of-year reports, evaluations, internal and external presentations, which were supplemented by information in the public domain, including audited accounts going back to 2006, annual reports, and websites. A review of evidence was conducted during and between field visits, thus enabling simultaneous and recursive consultation of primary and supplementary sources (Braun and Clarke, 2021; Siggelkow, 2007).

Finally, and as our third source of data, during multiple site visits, field notes were gathered through informal discussion and observation of participants during coffee breaks, lunches, in staff

meetings and during briefing sessions (Corley and Gioia, 2004; Yin, 2018). Direct observation of the transaction and distribution processes of the energy supply items were undertaken between 2012 and 2014 and again between 2016 and 2018. This included observation of product management, storage and maintenance, testing and repair of products (demonstrating the research required to understand the products, their weaknesses, and, thus, develop a repair app and booklet), staff in the office (operationalizing the business model), engaging with organizations (dealing with suppliers and direct customers), speaking to clients and agents (managing partnerships, targeting different customer segments to create social value, negotiating prices to ensure economic and social value capture), and preparing for extended periods of sales in rural areas (evidence of the trade-offs associated with certain social value creation), all of which contributes to creating “rich rigor” in qualitative research (Tracy, 2010).

3.5 Data Analysis

In the context of sub-Saharan Africa, our analysis focused on how Sunny Money embedded RI principles into its SBMI to enable inclusive energy transitions. We recognize that Sunny Money was not explicitly aware of the RI framework. However, foundational RI scholarship notes that RI builds on a longer history of *de facto* responsible practices, including ethical reflection, public engagement, anticipatory governance, and co-production between science and society (Owen et al., 2013; Stilgoe et al., 2013; Macnaghten, 2020). We, therefore, employed the RI framework as a sensitising analytical lens within the data analysis. More specifically, we treated the RI four dimensions as *ex-post* interpretive constructs, not as a managerial template that Sunny Money formally adopted or consciously used. This distinction shaped our analytical procedure. That is, our task was not to test whether Sunny Money implemented RI as a named framework, but to examine how its decisions, routines, and business model adjustments were informed by its socio-ethical commitments and values substantively consistent with anticipation, reflexivity, inclusion, and responsiveness. In practice, this meant moving from first-order evidence of organizational choices to second-order themes, and then to aggregate capacities (as explained in phase 4 next). We conceptualize these capacities as RI-shaped because their content and operation reflect different combinations of RI principles. They were not produced by matching one principle to one aggregate dimension; they emerged from the data and were subsequently theorized as RI-shaped because

they explain how responsibility became embedded in SBMI across successive business model cycles. Reading organizational practice through RI categories in this way makes visible the socio-ethical commitments and logics embedded in choices that might otherwise appear purely operational and is necessary for advancing RI-SBMI coupling as a theoretically specified rather than merely normative argument.

Adopting an empirically grounded approach, we analyzed sources of evidence by moving back and forth between them iteratively, developing our findings from the data. Later, we combined this with review of the RI principles and SBM frameworks. Through this process, we sought evidence from which we could deduce or contradict the influence of RI principles with decisions made and actions taken by the organization. Given the sizeable volume of primary and supplementary data, and to facilitate understanding, we present the process in phase form.

Phase 1. Assembly of evidence. We organized all sources of evidence, including transcriptions, internal and external reports, and field notes.

Phase 2. Developing a timeline. Following guidelines for inductive, reflexive thematic analysis (Braun and Clarke, 2024) and to ensure rigor in the approach (Corley and Gioia, 2004; Gioia et al., 2013), we listened to audio recordings of the interviews and re-read transcripts. A consistent message emerged: one of different business models adopted and piloted over time, with staff regularly referring to “*macro-years*” and “*macro-installations*,” which they contrasted with “*pico-years*” and “*pico-solar*.” In developing the timeline, we found macro systems were introduced in 2007/8 and installed “*on over 400 rural schools, health clinics, and community centers*” (website: Our History). The CEO explained how this first SBM grew from “*let’s put a solar system on [that] community center...in Malawi*” to “*OK let’s do more...and Solar Aid did 416...between 2007/8 up until around 2011...and it was a lot of work.*”

A story of evolving organizational structure emerged, going from a small charity-led model (“*with a tiny bit of money, £35,000*”) to a larger charity model with “*support from USAID*” and other trusts and foundations (identified in audited accounts from 2006 and the Memoranda and Articles). This model evolved into the current “*trade-not-aid*” model delivered through the social enterprise Sunny Money, which first appears in the 2011 audited accounts, being wholly owned by SolarAid. Observations by the first

author corroborated a phasing out of macro installations as the organization shifted away from “*the old solar technology...and lead [acid] batteries*” (CEO). This shift ushered in SBM 2. A third SBM was identified from a new focus on repair, first appearing in the 2019 audited accounts, followed by the launch of a repair app in 2020 as well as a discussion of the app and repair in subsequent reports up to 2024. The BBC Digital Planet podcast in 2020 and two white papers co-authored with the University of New South Wales in 2023 and 2024 attested to the focus of the third SBM. From this, we developed a timeline of key moments in the organization’s history. We realize there is overlap between SBMs, with pico-solar being piloted while macro-solar was still the focus, and repair research being undertaken while pico-solar continued to be sold. However, we contend that overlap between SBMs does not preclude the ushering in of a new SBM. Indeed, it would be foolhardy to introduce an entirely new SBM without first piloting it.

In keeping with the overarching concepts associated with each SBM and to facilitate differentiation between them, we refer to them in the following manner: We refer to SBM 1 as “*communal*,” SBM 2 as “*household*,” and SBM 3 as “*longevity*”.

Phase 3. In-depth exploration. As we were seeking to explore the extent to which the four RI principles informed SBMI decision-making, we revisited the definitions of each. For example, the RI principle of *inclusion* mandates meaningful engagement with diverse stakeholders and the incorporation of multiple perspectives to ensure innovations have equitable outcomes (Kanter, 1999; Stilgoe et al., 2013). We had evidence from diverse sources that supported ways in which SBMI decision-making had been *inclusive*.

In structuring the analysis, we identified central ideas and activities as first-order concepts. For example, the organization’s inclusive vision is a core concept: “*SolarAid has a vision of a world where everyone has access to affordable, clean, renewable energy.*” (Consolidated Audited Accounts, 2017). Another central idea is the selection of technologies: *the products themselves from Sunny Money, they are quality and they are durable and actually dependable. And people love them.*” (Agent); “*we...realized that, basically, it’s all very well having a panel on the school but then what happens when the kids go home. They’re still using candles, kerosene and paraffin, etc. So, were we actually having much of an impact?*” (Operations Director in Zambia). While ensuring access to quality

technologies for all users was central, product reliability was equally critical, as failures risk a return to energy poverty. Thus, the following were coded as related first order concepts: “*we honor our warranty. We have good customer service. We have good replacements. You know, unless they put it in water or they burn it or something, we’ll do our best to replace it for them*” (Operations Manager, Zambia). From such first-order concepts, we derived second-order themes that we consider organizational practices. For example, *inclusive customer service* reflects a commitment to universal, clean, affordable energy underpinned by provision of reliable, high-quality products under warranty. The breadth, diversity and consistency of evidence gave us confidence that RI principles informed SBMI decision-making within the organization.

The same technique was used for all codes and themes, with Figure 1 providing evidence of first-order concepts (activities, ideas, concepts) from which second-order themes (practices) were derived. As shown in Figure 1, certain themes were consistent across business models (SBM 1,2 and 3), namely *keeping pace with product transformations* and *opportunity mapping*. Others reflected tensions associated with devolved distribution models, e.g., *relinquishing control*. Finally, we sought to capture the organization’s consistent but assumed focus on renewable energy. Here, internal critique, external policy influencing, social and environmental value creation were readily linked. From this, *combined value creation* and *critical review* emerged. Two of the three researchers, the first and third authors, coalesced around 32 codes, later checked for reliability by the second author. To ensure we accurately captured second-order themes, we triangulated multiple sources of evidence (Yin, 2018), moving iteratively between transcripts and other documentation (Gioia et al., 2013). As a result, nine second-order themes were created.

[Figure 1]

Phase 4. Longitudinal conceptualization. The organization had undertaken three radical innovations to its business model, each seeking to become more inclusive and/or more sustainable. We wanted our data structure to explore and reflect dimensions consistent across each SBM.

Equity-centered value orientation and *regenerative sustainability logic* emerged rather easily because social and environmental value creation featured consistently in the evidence. Difficult decisions and trade-offs were constant, thus leading to *paradox navigation logic*. Finally, the expertise to navigate difficult operating environments with pervasive institutional voids was conceived as *contextual innovation capability*.

As noted in phase 3, our aim was to analyze the four principles of RI to determine whether and how anticipation, inclusion, reflexivity, and responsiveness had been enacted in any of the three SBMs. We continuously returned to the definitions of each principle prior to seeking supportive or contradictory evidence in each SBM. Having illustrated this with *inclusion* (in phase 3), we now illustrate *responsiveness* in each SBM. *Responsiveness* requires adaptations that enable innovations to evolve from societal concerns and emerging challenges (Owen et al., 2021a; Stilgoe et al., 2013). We found that each SBM sought to improve on the previous one, and several included sub-categories. Examples of responsiveness include moving from communal macro-solar installations to smaller household systems, training agents in response to weak financial and business literacy, and development of light libraries for the poorest households.

The CEO and senior managers exhibited much *reflexivity* and self-criticality, questioning their assumptions: *“were we actually having much of an impact? Yes ok, we were helping kids do their homework but then they were still walking home in the dark, doing their chores in the dark and not able to do any extra studies at home.”* This led to the phase out of macro-solar systems (SBM1) in favor of household products (SBM2), reflecting improvements to the social value of the core business model. They also questioned the organization’s motivations: *“Why do we exist...if it [pico-solar] is happening already with private capital coming into the market?”* These high-level organizational reflections led to reframing of the original mission to *“...it’s gonna be the hardest-to-reach people...we exist for...as opposed to before, it was everyone.”* There was also reflexive evidence of challenging internal values, e.g., in relation to the paradox of combining trade income with donor funding: *“...we’re basically a poor man’s solar company competing with private capital”* and *“I will happily tick that [donor] box for that money”*. *Anticipation* was the most difficult to analyze. While the repair apps and technicians in SBM 3, longevity, demonstrated anticipation of the e-waste associated with these products, we also found evidence in other more obscure areas. For example, in SBM 1, the organization anticipated that grid-based electrification would not reach millions of Zambian households, thus providing a rationale for the social value that cuts through all its SBMs.

To conclude phase 4, we linked each aggregate dimension with relevant RI principles. It is worth noting that the existence of four SBMI aggregate dimensions is not a result of direct correlation with the four RI principles, as our analysis reveals that each SBMI is linked to more than one RI principle.

4 FINDINGS

We identified four aggregate dimensions: *equity-centered value orientation*, *regenerative sustainability logic*, *contextual innovation capability*, and *paradox navigation logic* (Figure 1), which we conceptualize as RI-shaped capacities running through the organization's enactment of increasingly responsible practices. When applied to the coupling of RI and SBMI, these capacities enable value proposition redesign, value creation and delivery reconfiguration, and value capture transformation to be embedded. In this manner, Sunny Money was able to continuously adapt its SBMs, maintaining sustainability and economic effectiveness while sustaining a consistent orientation toward socio-ethical objectives. Critically, our analysis across three consecutive SBMs demonstrates that the iterative development of more responsible SBMs for equitable electricity provision hinges on the cultivation and processual enactment of these four capacities. Figures 2.a, 2.b, and 2.c (see also Online Appendix Table B for rich context) provide a longitudinal synthesis of our findings by mapping the four capacities across Sunny Money's three SBMs. This mapping reveals how each capacity was enacted in each SBM, which RI principles were most salient, and where the capacity operated within the SBMI elements (value proposition, value creation/delivery, and value capture), thereby revealing how RI became embedded in SBMI over time. Although Sunny Money was neither aware of nor explicitly guided by the RI framework, in this section, we deliberately link the four capacities (in italics) with the four RI principles (in bold) to enhance clarity for the reader.

[Figures 2.a, 2.b, 2.c]

4.1 SBM 1: Communal

Established in 2006, Sunny Money began as a non-governmental organization, SolarAid, supported with £35,000 from a UK renewable energy company called Solar Century. From the outset, SolarAid demonstrated an *equity-centered value orientation*, realizing "600 million people in Africa have no access to electricity" (*SolarAid Impact Report, 2013*). It was **anticipated** that the Zambian government (like others) would not extend grid-based access to rural areas because of very high investment costs, insufficient revenue

potential, and network deterioration (Haanyika, 2008) which have resulted in many utility companies reporting financial losses in sub-Saharan Africa (IEG, World Bank, 2016). This informed Sunny Money's development of its **inclusive** vision "*to create a world where everyone has access to clean, renewable energy*" (SolarAid, History). To achieve this, its first SBM created value by "*installing over 400 large solar systems on schools and clinics across Zambia and Tanzania*" (SolarAid Impact Report Summer 2013, p. 10; SolarAid, History). This is consistent with the **reflexivity dimension**, as the organization's leaders understood their own organization's renewable energy expertise and the gaps in government provision of rural energy access that this could help address. Assessed against SBM features, social value was created with each system designed for communal use; environmental value creation came courtesy of renewable (solar) energy utilization; economic value was captured with government agencies and sponsorship funding 90% of system costs. **Inclusive** consultation with rural communities led to a 10% community contribution accompanied by the requirement "*to present and demonstrate...a sustainability plan...[which] meant they could actually generate some income from that system and use that income to maintain that system over its lifetime*" (CEO).

The operationalization of SBM 1 also required the application of *contextual innovation capability*, with the core capability being to map and understand opportunities by which to create and deliver value. The macro systems were built courtesy of a memoranda of understanding with ministries of education and health, with these key partnerships and strategic alliances helping to address institutional voids in rural access to electricity (see Figure 2.a and Online Appendix Table B).

In addition to large solar installations, the organization "*began assembling solar lamps and solar phone chargers in Tanzania and Malawi*" (SolarAid Impact Report Summer 2013, p. 10), realizing that "*no solar products designed for rural low-income households*" (CEO) existed. Driven by its *equity-centered value orientation* to innovate around **inclusive** lighting at the household level, this component of SBM 1 required a different kind of *contextual innovation capability* (one that focused on keeping pace with product transformation). In the absence of products designed for rural households, SolarAid established Sunny Money and "*worked with local entrepreneurs to manufacture and sell [small] solar products*" (CEO), '*establishing the first large scale pico-solar assembly lines in Africa*' (SolarAid Impact Report Summer 2013, p. 10).

Despite the relative success of SBM 1, an **inclusivity**-driven and **reflexive** review of the value proposition led to a radical repositioning away from it:

“We realized that, basically, it’s all very well having a panel on the school but then what happens when the kids go home. They’re still using candles, kerosene and paraffin, etc. So, were we actually having much of an impact? Yes ok, we were helping kids do their homework but then they were still walking home in the dark, doing their chores in the dark and not able to do any extra studies at home.” (Country Director, Zambia)

To achieve better *equity-centered value orientation*, Sunny Money decided “to stop doing these old [large school] systems” and instead “realized the need for pico-solar” (Country Director, Zambia) that were “taking off apace” (SolarAid Market Update, 2016) and from which they anticipated they could “achieve very similar results with much cheaper kit and maybe even create a business model out of it” (CEO).

A willingness to adjust SBM 1’s value proposition to become more *equity-centered* demonstrates an additional RI effect, **responsiveness**, which required *contextual innovation capability*. Two delivery mechanisms were enacted to achieve this. First, keeping pace with product transformations, it embraced that “technology was evolving, we were in a fast-moving sector” (CEO). Second, it built on opportunities already mapped and created with ministries of education deciding to “change the way that we do schools” (Country Director, Zambia) distributing “through head teachers of schools...as trusted members of their communities” (SolarAid Market Update, 2016).

However, a move towards more **inclusive** and equity-centered value propositions requires that organizations prioritize between value creation and capture opportunities. In SBM 1, capturing economic value was “easier if we were doing installations on clinics ‘cos that was directly impacting health, so we did get support from USAID” (CEO), whereas sales of pico-solar systems do not fit with this traditional economic model. Enacting a change of organizational status and structure can also introduce challenges as “social enterprises are new, it’s sometimes difficult for authorities to understand or have something that actually matches what you’re trying to do” (CEO). The enactment of value prioritization mechanisms such as these demonstrates that the third aggregate dimension, *paradox navigation logic*, is a constant feature in the operationalization of any SBM and associated innovations that are *equity-centered* in their *value orientation*. We identify such paradox

navigation as central to social enterprises seeking to avoid mission drift toward economic value capture. Following these dynamics, Sunny Money moved to SBM 2.

4.2 SBM 2: Household

The primary driver for innovating to SBM 2 was a more *equity-centered value orientation* (see Figure 2.b and Online Appendix Table B). The gap in the market was the same (i.e. rural communities without electricity), but the end-user became clearly identifiable as the individual customer rather than the entire community. **Inclusivity** remains at the heart of this SBM, supported by opportunity mapping and socio-cultural understanding that were critical elements of the *contextual innovation capability* enacted in SBM 2 to enable rural customers to be reached at the household level rather than via a central communal resource. *“People, also, they trust teachers still in Zambia. And also working with the Ministry of Education. We did get a memorandum of understanding...which is still valid to this day, to be able to work in any school across Zambia”* (Country Director, Zambia).

In seeking to reach rural customers and provide the best quality products, Sunny Money kept pace with product transformation and embraced a **reflexivity** linked paradox in SBM 2: *“We like the fact that we’re manufacturing locally, but these other products being made in China have the potential to be much cheaper, mass produced, high quality”* (CEO).

The decision was taken to *“clos[e] down manufacturing operations”* (CEO) and import suitable quality-certified products. These were entry-level pico-solar lights, capable of lighting one or more rooms and charging radios, phones, and torches. Thus, throughout SBM 2, the organization complied with its *regenerative sustainability logic*. Anticipating and recognizing the existence of *“many poor-quality solar household systems”*, Sunny Money only sold products that had been *“quality tested by Lighting Global”* (*Solar household systems: evidence of impact, 2015*). In addition, by 2015, it *“became the first solar light distributor to recycle products [and began] supporting research on the disposal of e-waste using pre-existing structures to avoid infrastructure costs”* (Impact Report, 2015). By building on its *contextual innovation capability* and navigating the paradoxes associated with a competitive manufacturing environment, Sunny Money was able to maintain its *equity-centered value orientation*. These pragmatic decisions demonstrate the prominence of **inclusivity**, **reflexivity**, and **responsiveness** in undertaking a radical shift to SBM 2.

A detailed analysis of SBM 2 reveals a mixture of innovations which are discussed here. In SBM 2, social value is created via sales of products to families of school children, often requiring multiple visits to the same schools.

“The first delivery would always be a bit slack. People would [ask] why should we use this and what’s the point of the solar light, I’ve used candles, my parents used candles, my grandparents, why? But once you’ve done that first delivery and you’ve got a couple of people using them, the floodgates usually open” (Country Director, Zambia).

This fulfils the value proposition of SBM 2 and *equity-centered value orientation*. However, economic value capture is challenging because staff *“are costing fuel before they’ve even sold the lights”* (Operations Manager, Zambia) and *“there’s a daily allowance for the team, [as well as] vehicle costs”* (Country Director, Zambia), poor road conditions, long distances, low population density, and limited purchasing power among customers. Despite the high economic costs of sales through schools, Sunny Money enacts social value prioritization over economic value capture to maintain its *equity-centered value orientation*: *“From a business perspective [i.e., economic], schools cost me the most. From environmental and social [perspectives]—no”* (Country Director, Zambia).

Without discontinuing sales through schools, Sunny Money chose to map other opportunities to more readily capture economic value to avoid relinquishing the drive to create social and environmental value. In doing so, the organization recruited and created networks of micro-franchisees, or agents, for which it would *“segment a geographical area and say like ok this is your group of villages”* (CEO). These agents live and work in rural areas, occasionally in schools, often speaking local dialects and having social networks. They buy products in bulk, benefiting from subsidies; moreover, they sell at whatever price customers are willing to pay. Once the organization has received the agent’s upfront payment, the orders are dispatched via national bus services, thus reducing transport costs: *“Agents and shops have bought the lights before you’ve even sent them out. So, we don’t have to spend money other than the shipping”* (Operations Manager, Zambia).

This demonstrates *contextual innovation capability* to more readily capture economic value while delivering products to *“last mile”* customers (Country Director, Zambia). Although these innovations better captured economic value, *paradoxes* had to be *navigated*, thus requiring experimentation and a willingness to relinquish control:

“An agent program takes a while to get up and working. You can’t just dump a solar light on somebody and go, oh away you go” (Country Director, Zambia). “You can’t expect somebody [an agent] who’s selling a light for a profit of 20 Kwacha to go through all these steps to get to [register] that end user” (Operations Manager, Zambia).

A cost benefit analysis of the agent model demonstrated this more effectively captured economic value than the school’s model. Despite this, a subsequent analysis of over 1,000 agents revealed that certain *“agents are becoming one-offs...buying once a year then never to be seen again”* (Country Director, Zambia). As Sunny Money calls agents *“once or twice a month, to see how sales are going,”* it was able to apply its *contextual innovation capability*, which revealed that many lack basic business skills and *“don’t really know how to put a budget together or a small cash flow”* (Country Director, Zambia). Therefore, a training program was developed with an experienced partner organization. This innovation reveals elements of **inclusion** (agent consultation), **reflexivity** (analysis of devolved sales), as well as **responsiveness** through a willingness to support weaker agents.

In addition to upskilling weaker agents, analysis revealed that *“agents in shops are actually our big money makers”* (Operations Manager, Zambia), selling lots of lights and requiring no training: *“We would call them super agents – that is, people that have three, four shops. I’ll give you an example: Mr. X up in Northern Province has twelve shops. He is able to buy from us on a set level of credit, \$2,000 worth of lights rather than \$70 worth of lights”* (Country Director, Zambia). Thus, the organization created networks of “super agents” able to order larger volumes and supply “standard” agents with fewer lights. However, *the [super] agent with seven little shops is not going to be able to keep track of what agent he’s selling to and what end user that agent’s gone to. So, one of the things we are having problems with is seeing who that end user is”* (Operations Manager, Zambia).

Multiple variations of an apparently simple micro-franchisee model – devolved product delivery networks, subsidized pricing offers, bespoke training, super-agent networks – demonstrate that *contextual innovation capability* is essential to effectively deliver value in complex environments. Value prioritization decisions and experimentation permeate the agent model, with Sunny Money incurring the expenses for training programs or relinquishing control over sales to customers. Such *paradoxes* require careful *navigation* and application of context-specific expertise (see Figure 2.b and Online Appendix Table B).

Further, to improve economic value capture and reach in remote rural areas unserved by teams or agents, Sunny Money used *contextual innovation capability* to innovate further. It mapped organizations with large employee or customer bases (agricultural, and mining companies, social enterprises, NGOs, churches). Next, it offered them solar products as complements to existing product or service offerings (i.e., akin to social enterprises distributing health kits through community outreach, or agricultural companies selling seeds). Sunny Money refers to these organizations as partners: “*You look at the...partners when you get that order ...like 3,500 lights, a huge order with huge rewards...And they were able to get those lights to the farmers and sell them like that (clicks fingers) because they’ve infiltrated the market...*” (Operations Manager, Zambia).

Such opportunity mapping reduces primary delivery costs, “*open[s] doors because they’re on the ground a lot more than Sunny Money*” (Country Director, Zambia) and extends geographic reach. However, like super-agents, sales to partner organizations are business-to-business transactions and require a relinquishing of control in Sunny Money’s interaction with customers, thus demonstrating *paradox navigation* in such SBMs. “*Some of the corporates may be getting to the last mile, but ... I don’t think it is...*” (Operations Manager, Zambia).

Finally, *equity-centered value orientation* is evident in Sunny Money’s leadership. Through its participation in global solar fora, Sunny Money rejected the draw of more profitable customer segments and instead sought to influence businesses to adopt more equity-centered orientations:

“*Private companies in our space are showcasing new [solar] televisions...but how many were saying...we’ve cracked the solution to the lower segment of the population? I moderated a session on ‘too poor, too remote, too insecure’. And so that’s what needed to innovate around*” (CEO).

“*With solar enterprise now taking off in major African markets, our mission has shifted to center around those with least access to energy... Although the idea is simple enough, implementing it will be hard. We choose to do the difficult thing*” (SolarAid Annual Report and Financial Statements, 2020/21, p. 3, message from the Chair).

As the quotes show, other corporations focused on wealthier, urban, customers, reinforcing social injustices of lack of access to products and services in rural areas. Sunny Money rejected this economically lucrative shift to continue creating *equity-centered* value for “last mile” customers:

“This last year, 2017, farming didn’t really bring in much of an income for them [the farmers]...because the government reduced the price at which they going to buy maize” (Agent Coordinator, Zambia).

“But again, seasonality and when people have money is so up and down... lack of rainfall and everything else cos you’re dealing with subsistence farmers, really” (Country Director, Zambia).

SBM 2 demonstrates a constant application of *contextual innovation capability* in the drive for *equity-centered value orientation*. There are multiple strands and innovations within this SBM, all intended “to reach the last mile” (Operations Manager, Zambia). Certain innovations (e.g., the schools program) incur greater cost structures but enable Sunny Money to maintain direct linkages with customers. Funds raised through sponsorship, philanthropy or from government donors have helped accommodate such costs. Where other innovations increase geographic reach and facilitate economic value capture, they do so at the expense of customer interaction. This illustrates the *paradoxes* running through every decision.

4.3 SBM 3: Longevity

The shift from SBM 1 to SBM 2 enabled the creation of more individual *equity-centered value* while developing mutually supportive economic value capture innovations. SBM 3 indicates a new *equity-centered* innovation but primarily focuses on developing a more *regenerative sustainability logic*, which can be applied to the adaptations of SBM 2 for future innovations and by other businesses in the sector (see SBM 3 in Figure 2.c and Online Appendix Table B).

Inclusive consultation with school-based customers revealed that even entry-level products were too expensive for some. To better reach the “last mile,” it introduced light libraries (Toolkit, 2021), providing a “try before you buy” approach, whereby schools get 20-50 lights that students can rent for one penny per day. This allows economically impoverished households to buy solar once savings accrue from reductions in the purchase of kerosene or torch batteries. This is clearly *equity-centered value orientation*. The creation of light libraries prioritizes social value creation over economic value capture and demonstrates the *navigation of paradoxes* required when *orientating to equity-centered value*.

The use of renewable energy sources, including solar energy, is usually considered environmentally responsible. However, adopting a critical review of its operations and products Sunny Money found that over 90% of households had kept broken solar products and of these products, over

90% could be repaired (White Paper, 2023; BBC radio). By integrating a *regenerative sustainability logic*, Sunny Money innovated to remedy the e-waste problem. With external economic support, a fault diagnosis and repair manual was developed and made open source (Repair Manual, 2023), as was a repair app, enabling customers to undertake basic repairs. Repair technicians were also trained to repair complex issues, extending product longevity and creating social, economic, and environmental value. Further, Sunny Money produced a policy briefing (White Paper, 2023) and is working with a manufacturer to create modular lights that can be disassembled without discarding the entire unit. While there may initially have been a sector-wide lack of **anticipation** regarding e-waste, the organization is demonstrating environmental **responsiveness**, thus attempting to reduce negative impacts and enacting a *regenerative sustainability logic* (see Figure 2.c and Online Appendix Table B).

Detailed product knowledge has been developed over years of working in the sector and by disassembling faulty, broken products. The knowledge gained also contributes to the development of modular lights, thus demonstrating *contextual innovation capability* at the fore of SBM 3. This reveals that *contextual innovation capabilities* loop back to *regenerative sustainability logic*. Moreover, the interplay between social research and value creation with *contextual innovation capability* is also revealing – the finding that over 90% of households had kept faulty products reveals a rather different approach to the relationship between customers and products, as compared to that in more economically developed countries.

Both innovations within SBM 3 require that paradoxes be navigated, particularly for economic value capture. Customer-based product repair and devolved networks of repair technicians could reduce economic value capture for the organization but demonstrate the prioritization of *regenerative sustainability logic* as well as *equity-centered value orientation* created through extending product longevity and better customer value for money. Light libraries also require careful *paradox navigation*; while such libraries might eventually lead to economic value capture if a family moves from rental to purchase, this is not guaranteed.

4.4 A process framework for responsible SBMI

Integrating the above findings, we theorize responsible SBMI as a process in which RI principles are embedded as organizing standards within business model innovation, rather than treated as external

ethical add-ons. Within Sunny Money, these principles are repeatedly integrated across value proposition redesign, reconfiguration of value creation and delivery, and value capture transformation ensuring that each shift remains oriented to addressing energy poverty under institutional weakness.

Across three consecutive SBMs, we identify four recurrent, cross-cutting aggregate dimensions (equity-centered value orientation, regenerative sustainability logic, contextual innovation capability, and paradox navigation logic) which we conceptualize as RI-shaped organizational capacities – Figure 3 and Table 2. These capacities are not additional “elements” bolted onto the business model but patterned abilities through which managers adapt value proposition, reconfigure value creation and delivery, and transform value capture in ways that remain guided by RI principles. While the SBMI framework specifies where change occurs, these capacities explain how responsible change is sustained under persistent social-ecological-economic trade-offs. Importantly, they also clarify why RI principles vary in salience over time as each capacity foregrounds different principles depending on the tensions faced.

[Figure 3] and [Table 2]

Equity-centered value orientation initiates responsible SBMI by anchoring business model transformation in inclusion, legitimacy, social need, and justice. As depicted in Figure 3 and Table 2, inclusion is the key RI principle that underpins *equity-centered value orientation* requiring that problems are co-defined with communities, value propositions co-produced, and accountability built into the model rather than treated as peripheral. This capacity unsettles the initial value proposition by forcing recognition of who remains excluded and why, as seen when SBM 1’s school-based access failed to address household energy poverty, triggering a shift to household-level solutions in SBM 2. This deliberate, socially-committed shift introduced new operational constraints, including longer sales cycles, higher distribution costs, and lower short-term revenue. Rather than retreating from its inclusivity commitments, Sunny Money iteratively refined its approach, demonstrating that paradox navigation is intrinsic to equity-oriented redesign from the outset, shaping it at every turn.

Regenerative sustainability logic emerges once equity-driven redesign exposes downstream environmental consequences, forcing a rethink. Environmental responsibility shifts from harm mitigation toward restoration, prompting the organization to ask whether its business model is trading short-term

access for long-term ecological damage. While environmental responsibility in SBM 1 and SBM 2 focused on carbon reduction via solar access and quality-certified products, increasing solar e-waste led to SBM 3's emphasis on durability and circularity: modular products, repairable components, open-source repair tools, and repair-oriented offerings help extend product life. These changes were not reactive responses to regulation but internally driven by ethical commitment to prevent new forms of environmental harm. However, this surfaced a new paradox: longer product lifetimes reduce product turnover and can weaken revenue streams. Sunny Money responded by decentralizing maintenance through local technicians and repair apps, shifting value creation from centralized production to community-based service models; this adaptation demonstrates that paradox navigation is a generative feature of responsible SBMI.

Contextual innovation capability enables the organization to operationalize equity and regeneration in institutionally weak contexts. Conceptually, it is the organization's ability to evolve, converting locally grounded insights into new arrangements for value creation and delivery. The shift from SBM 1's centralized installations and direct school engagement to SBM 2 and SBM 3's decentralized delivery through rural agents and strategic partnerships illustrates this evolution, thus enabling broader reach and reducing operating costs while maintaining a focus on access. However, decentralization introduced new tensions, including diffused control, variable agent capability and customer experience, and reduced organizational visibility. Sunny Money addressed these tensions through mechanisms such as super-agents, tiered training, segmentation, and use of local transport services, illustrating that contextual innovation capability is a continuous process of adjustment rather than a fixed competence.

Paradox navigation logic operates across all stages as the central structuring capacity. It allows the organization to work through persistent tensions generated by the other three capacities, i.e. equity versus efficiency, regeneration versus revenue, responsiveness versus control, without resolving them. It underpins the entire responsible SBMI process, shaping how managers continuously engage with tensions. Across SBM 1 – SBM 3, these tensions repeatedly surfaced in different forms: balancing scale with depth in SBM 2's shift to agent networks, reconciling environmental responsibility with business sustainability in SBM 3's repair-focused model, and managing mission commitment alongside operational efficiency during SBM 1's move from macro systems to more distributed solutions. Paradox navigation

sustains SBMI across cycles by linking the other capacities and mediating how value propositions are redesigned, delivery structures are reconfigured, and value capture is adjusted each time trade-offs intensify. Enabled by the four RI principles, this capacity is enacted through three mechanisms: experimentation, which enacts responsiveness and reflexivity by generating evidence for redesign under uncertainty; relinquishing control, which enacts inclusion by redistributing agency to partners and communities while creating new accountability demands; and value prioritization, which enacts anticipation and reflexivity. Together, these mechanisms make RI a consistent way of working, helping the organization navigate paradoxes and maintain more responsible SBMs over time.

5 DISCUSSION

This study asked how organizations operating in institutionally weak environments can transform their SBMs to become more responsible by embedding RI principles in their SBMI processes. Drawing on the longitudinal case of Sunny Money, our findings revealed that responsible SBMI is an evolutionary and recursive process in which value proposition, value creation and delivery, and value capture are reassessed as new needs, constraints, and externalities arise (Foss and Saebi, 2017; Schaltegger et al., 2016b). Crucially, the case demonstrates that RI principles are not embedded “by the organization” in the abstract. Rather, managers embed RI through ongoing choices regarding what is prioritized, who is included, what risks and harms are anticipated, and how the SBM is adjusted in response to feedback and emergent consequences (Stilgoe et al., 2013; Owen et al., 2013). In settings where regulation and enforcement are weak, these managerial choices function as the primary guardrails that shape and determine the extent to which SBMI remains responsible.

5.1 Implications for theory

Our study advances theory in several ways. First, we advance understanding of RI-SBMI coupling (Lehoux et al., 2021; Long and van Waes, 2021; Ambos and Tatarinov, 2022) by reconciling two research streams that have largely developed in parallel: SBMI scholarship that explains how business models are redesigned for sustainability and RI scholarship that specifies the principles through which innovation can be steered toward socially desirable outcomes. While interest in synergies between SBMI and RI is increasing (Long and van Waes, 2021; Magni et al., 2024), existing research has often treated their

coupling as normative aspiration rather than a theoretically specified and empirically grounded process. As such, existing scholarship has underexplored the mechanisms through which RI can generate value within innovation ecosystems (Arslan and Tarakci, 2022), critiqued the tendency to treat RI as guiding principles detached from operational realities (Genus and Iskandarova, 2018), and highlighted its implementation challenges (de Hoop et al., 2016). Consequently, the connection remains conceptually underdeveloped and empirically underexplored. Addressing this gap requires unpacking how RI principles become consequential within SBMI components and are operationalized across organizational and field-level dynamics (Degbey et al., 2024; Liu et al., 2024). Notably, we define RI-SBMI coupling by substantive alignment between organizational action and RI principles, rather than by formal awareness or explicit adoption of the RI framework. In our case, Sunny Money's choices were shaped by its mission, socio-ethical commitments, and experience of operating in institutionally weak contexts; the RI framework provides the analytical vocabulary through which we identify and theorize the responsibility dimensions embedded in those choices. Coupling is visible when anticipation, reflexivity, inclusion, and responsiveness are expressed in decisions about value proposition redesign, value creation and delivery reconfiguration, and value capture transformation, and when these dimensions constrain purely economic logics across successive SBM iterations. On this basis, we theorize four RI-shaped organizational capacities, namely equity-centered value orientation, regenerative sustainability logic, contextual innovation capability, and paradox navigation logic, as mechanisms through which responsibility becomes consequential within SBMI. These capacities do not add new business model elements; rather, they explain how organizations continue revising SBM choices while remaining socio-ethically accountable. They describe the organizational means through which iterative reconfiguration across established SBMI loci becomes possible and sustainable over time (Foss and Saebi, 2017). In doing so, we move beyond relatively static depictions of SBM structures (Evans et al., 2017; Lüdeke-Freund et al., 2018) and provide a dynamic, process-based account of how RI can guard the development of viable, yet ethically anchored, SBMs (Lubberink et al., 2019; Ranabahu, 2020).

Second, we contribute to emerging conversations regarding SBMs for grand challenges (Martí, 2018; Pereira et al.; 2024, Wang et al., 2024) by placing paradox management at the center of responsible SBMI and identifying the underpinning mechanisms that enable organizations to continue innovating responsibly in the face of tensions. Paradox scholarship has long argued that tensions, such as competing goals and contradictory demands, are persistent features of organizing rather than episodic problems (Smith and Lewis, 2011; Jay, 2013). Our findings reveal that, in a responsible SBMI process, tensions are not confined to an “implementation” phase; they are generated by the very attempt to simultaneously pursue social, economic, and environmental value and, therefore, re-emerge as the business model evolves. We extend this view by revealing that paradox navigation operates as a structuring capacity that holds the process together across SBM iterations. Moreover, we explain how it is sustained through three recurring mechanisms (experimentation, relinquishing control, and value prioritization). In our case, these mechanisms do not simply “support” innovation, but they make responsibility governable in practice by creating spaces for learning, redistributing agency to build legitimacy and reach, and making explicit what will be protected when viability pressures intensify.

Third, we show that the salience of RI principles varies across capacities and SBMI components as managers embrace specific RI principles in response to what is at stake in specific moments of SBM development. While RI is often presented as a coherent set of principles, prior research has noted the difficulty of translating these principles into practice in a consistent, “one-size-fits-all” manner (Stilgoe et al., 2013; Owen et al., 2013; Genus and Iskandarova, 2018). Our findings add processual granularity by revealing that different principles become more prominent depending on which capacity is involved, and which locus of business model change is under negotiation. For example, inclusion becomes focal when managers embed *equity-centered value orientation* into value proposition redesign and delivery choices. Anticipation becomes more salient as *regenerative sustainability logic* brings longer-term environmental consequences and effects into decision horizons. Responsiveness is pivotal when managers cultivate *contextual innovation capability* in the face of local constraints and institutional voids. In contrast, *paradox navigation* draws on the full set of RI principles because tensions in responsible SBMIs are simultaneously distributive (who benefits and who bears costs), temporal (short-term viability versus long-term

stewardship), practical (what is feasible in context), and epistemic (how managers interrogate assumptions and learn from unintended consequences) (Ringvold et al., 2023). These findings add important granularity to the theorization of RI (von Schomberg, 2019; Owen et al., 2019), thus highlighting the need for a dynamic understanding of principle activation rather than treating RI principles as stable design guidelines.

Finally, by studying a social enterprise operating under conditions of institutional fragility, we contribute to theorizing responsible business model evolution in the absence of strong exogenous institutional pressures (Chabowski et al., 2025; Calderini et al., 2023). Prior RI and SBMI research have often assumed the presence of regulatory scaffolds or societal expectations (Scherer and Voegtlin, 2020). Our findings reveal that equity-centered value orientation and regenerative sustainability logic can substitute for missing institutional support; this suggests that in weak institutional contexts, the ethical infrastructure must be endogenously developed by the organization.

5.2 Implications for practice

For practitioners addressing grand challenges, there are several implications, particularly for low-income countries with dispersed rural populations. First, developing capacity for organization-wide equity-centered value orientation helps avoid unintentional reinforcement of structural inequalities (Sovacool et al., 2019) in access to services and products. To do this well, inclusive consultation must be undertaken with a wide range of stakeholders to understand their means and access requirements (Kanter, 1999; Stilgoe et al., 2013). Ideally, this would be undertaken when developing an SBM, but it can be applied to an existing one and should be undertaken throughout the life of any SBM and associated innovations; this is because impoverished households are the most vulnerable to the impacts of grand challenges and this vulnerability is dynamic. The application of this orientation decreases the likelihood of mission drift, thus acting as a societal guardrail. Second, mapping opportunities where institutional voids are widespread can facilitate economic value capture, geographic reach, and market competitiveness. For example, working with micro-franchisees and local public transport provide effective decentralized distribution systems at the individual level, but it is the application of contextual innovation capability that permits further development of such initiatives – for instance, recognizing agents with potential to

become super agents and devolving sales to partner organizations. For dispersed rural customers with precarious incomes, such approaches build on other people's social networks and community trust, saving time and effort to build these internally. Third, even when working with environmentally "sound" practices and technologies, improvements can always be made. While it might be difficult to anticipate negative unintended consequences in nascent markets, a critical review of products or services is essential to remedy such consequences and internalize necessary actions. Finally, while genuine integration of RI with SBMI can help tackle grand challenges, this requires a willingness to sacrifice a certain amount of economic value capture with social and environmental value creation. Indeed, tensions and trade-offs will feature in all decisions; however, with appropriate leadership, organizations can develop expertise in navigating such paradoxes.

5.3 Limitations and future research directions

While our study advances understanding of the dynamic interplay between RI and SBMI in addressing energy poverty, it has limitations. It is based on a single longitudinal case of a social enterprise operating within institutional voids, which limits the generalizability of our findings across broader organizational fields and sectoral contexts. Therefore, future research could deploy comparative multi-case designs (including firms that differ in terms of institutional embeddedness, profit orientation, and innovation scale) to theorize the consistency and variation in RI-SBMI coupling. Moreover, while our analysis foregrounds the successful navigation of tensions and paradoxes, further inquiry should explore cases of failure (where RI-SBMI integration breaks down) to better theorize risks, contradictions, and unintended consequences. Additionally, future research could examine how paradox salience varies across different stages of SBM trajectories, particularly under conditions of resource shocks or shifting governance landscapes (Jay, 2013). Finally, as our study is situated in the renewable energy sector in sub-Saharan Africa, future research should investigate how our model (and its underpinning capacities) can unfold in other sectors with less resource-constrained contexts, where market-based solutions may inadvertently reproduce existing inequalities. Addressing these limitations can enrich the existing understanding of structural conditions, actor strategies, and temporal dynamics that enable or constrain responsible business model transformation.

REFERENCES

- Al-Tabbaa, Omar, Zaheer Khan, Gary Knight, et al. Palgrave Macmillan 2024. "Circular Economy and Social Upgrading in Global Value Chains: An Analytical Perspective on Social Upgrading in the Global South." [10.1007/978-3-031-46802-5_10](https://doi.org/10.1007/978-3-031-46802-5_10).
- Amit, R., & Zott, C. (2001). Value creation in E-business. *Strategic Management Journal*, 22(6–7), 493–520. <https://doi.org/10.1002/smj.187>
- Ambos, Tina C. and Katherine Tatarinov. "Building Responsible Innovation in International Organizations through Intrapreneurship," *Journal of Management Studies* 59, no. 1 (2022): 92–125, doi:10.1111/joms.12738.
- Anand, Amitabh, Daniel Rottig, Nakul Parameswar, and Anne Marie Zwerg-Villegas. "Diving Deep into the Dark Side: A Review and Examination of Research on Organizational Misconduct in Emerging Markets," *Business Ethics, the Environment & Responsibility (Print)* 32, no. 2 (2023): 612–637, doi:10.1111/beer.12514.
- Arslan, Birgul and Murat Tarakci. "Negative Spillovers Across Partnerships for Responsible Innovation: Evidence from the 2014 Ebola Outbreak," *Journal of Management Studies* 59, no. 1 (2022): 126–162, doi:10.1111/joms.12607.
- Bacq, Sophie and Ruth V. Aguilera. "Stakeholder Governance for Responsible Innovation: A Theory of Value Creation, Appropriation, and Distribution," *Journal of Management Studies* 59, no. 1 (2022): 29–60, doi:10.1111/joms.12746.
- Bansal, Pratima (Tima) and Kevin Corley. "The Coming of Age for Qualitative Research: Embracing the Diversity of Qualitative Methods," *Academy of Management Journal* 54, no. 2 (2011): 233–237, doi:10.5465/amj.2011.60262792.
- Barry, Mamadou Saliou and Anna Creti. "Pay-as-You-Go Contracts for Electricity Access: Bridging the “Last Mile” Gap? A Case Study in Benin," *Energy Economics* 90,(2020): 104843, doi:10.1016/j.eneco.2020.104843.
- Berends, Hans, Armand Smits, Isabelle Reymen, and Ksenia Podoyntsina. "Learning while (Re)Configuring: Business Model Innovation Processes in Established Firms," *Strategic Organization* 14, no. 3 (2016): 181–219, doi:10.1177/1476127016632758.
- Bhatia, Mikul and Angelou, Nicolina. “Beyond Connections: Energy Access Redefined (ESMAP Technical Report 008/15)”. The International Bank for Reconstruction and Development/The World Bank Group. (2015)
- Bhatnagar, Rishi, Duygu Keskin, Arjan Kirkels, A. G. Romme, and J. C. C. M. Huijben. "Design Principles for Sustainability Assessments in the Business Model Innovation Process," *Journal of Cleaner Production* 377,(2022): 134313, doi:10.1016/j.jclepro.2022.134313.
- Blok, Vincent, Pieter Lemmens, Jeroen van den Hoven, et al. Springer International Publishing AG 2015. "The Emerging Concept of Responsible Innovation. Three Reasons Why it is Questionable and Calls for a Radical Transformation of the Concept of Innovation." [10.1007/978-3-319-17308-5_2](https://doi.org/10.1007/978-3-319-17308-5_2).
- Bocken, N. M. P. and S. W. Short. "Towards a Sufficiency-Driven Business Model: Experiences and Opportunities," *Environmental Innovation and Societal Transitions* 18,(2016): 41–61, doi:10.1016/j.eist.2015.07.010.
- Bocken, N. M. P., S. W. Short, P. Rana, and S. Evans. "A Literature and Practice Review to Develop Sustainable Business Model Archetypes," *Journal of Cleaner Production* 65,(2014): 42–56, doi:10.1016/j.jclepro.2013.11.039.
- Bocken, Nancy M. P. and Thijs H. J. Geradts. "Barriers and Drivers to Sustainable Business Model Innovation: Organization Design and Dynamic Capabilities," *Long Range Planning* 53, no. 4 (2020): 101950, doi:10.1016/j.lrp.2019.101950.
- Bocken, Nancy, Frank Boons, and Brian Baldassarre. "Sustainable Business Model Experimentation by Understanding Ecologies of Business Models," *Journal of Cleaner Production* 208,(2019): 1498–1512, doi:10.1016/j.jclepro.2018.10.159.
- Boons, Frank and Nancy Bocken. "Towards a Sharing Economy – Innovating Ecologies of Business Models," *Technological Forecasting & Social Change* 137,(2018): 40–52, doi:10.1016/j.techfore.2018.06.031.
- Boons, Frank and Florian Lüdeke-Freund. "Business Models for Sustainable Innovation: State-of-the-Art and Steps Towards a Research Agenda," *Journal of Cleaner Production* 45,(2013): 9–19, doi:10.1016/j.jclepro.2012.07.007.
- Brand, Teunis and Vincent Blok. "Responsible Innovation in Business: A Critical Reflection on Deliberative Engagement as a Central Governance Mechanism," *Journal of Responsible Innovation* 6, no. 1 (2019): 4–24, doi:10.1080/23299460.2019.1575681.
- Braun, Virginia and Victoria Clarke. "One Size Fits all? what Counts as Quality Practice in (Reflexive) Thematic Analysis?" *Qualitative Research in Psychology* 18, no. 3 (2021): 328–352, doi:10.1080/14780887.2020.1769238.
- Breuer, Henning and Lüdeke-Freund, Florian. "Values-Based Network and Business Model Innovation," *International Journal of Innovation Management* 21, no. 3 (2017): 1750028, doi:10.1142/S1363919617500281.
- Calderini, Mario, Magali Fia, and Francesco Gerli. "Organizing for Transformative Innovation Policies: The Role of Social Enterprises. Theoretical Insights and Evidence from Italy," *Research Policy* 52, no. 7 (2023): 104818, doi:10.1016/j.respol.2023.104818.
- Carson, Rachel. *Silent Spring*. Houghton Mifflin, 1962.
- Casasnovas, Guillermo and Jessica Jones. "Who has a Seat at the Table in Impact Investing? Addressing Inequality by Giving Voice," *Journal of Business Ethics* 179, no. 4 (2022): 951–969, doi:10.1007/s10551-022-05154-6.

- Chabowski, Brian R., Peter Gabrielsson, G. T. Hult, and Forrest V. Morgeson. "Sustainable International Business Model Innovations for a Globalizing Circular Economy: A Review and Synthesis, Integrative Framework, and Opportunities for Future Research," *Journal of International Business Studies* 56, no. 3 (2025): 383–402, doi:10.1057/s41267-023-00652-9.
- Chesbrough, H., & Rosenbloom, R. S. (2002). The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies. *Industrial and Corporate Change*, 11(3), 529–555. <https://doi.org/10.1093/icc/11.3.529>
- Chirambo, Dumisani. "Towards the Achievement of SDG 7 in Sub-Saharan Africa: Creating Synergies between Power Africa, Sustainable Energy for all and Climate Finance in-Order to Achieve Universal Energy Access before 2030," *Renewable & Sustainable Energy Reviews* 94,(2018): 600–608, doi:10.1016/j.rser.2018.06.025.
- Clowes, Jonathan, Hu, Irene, Labruto, Leslie, Masters, Harry, and Mutege, Lornah. "Lighting the Way: Roadmap to Exits in Off-Grid Energy". (2019)
- Coffay, Matthew, Ragnar Tveterås, Nancy Bocken, and Marcel L. A. M. Bogers. "Sustainable Business Model Innovation, Dynamic Capabilities, and Organizational Design: Insights from Norwegian Aquaculture," *Business Strategy and the Environment* 33, no. 6 (2024): 5386–5404, doi:10.1002/bse.3762.
- Corley, Kevin G. and Dennis A. Gioia. "Identity Ambiguity and Change in the Wake of a Corporate Spin-Off," *Administrative Science Quarterly* 49, no. 2 (2004): 173–208, doi:10.2307/4131471.
- Cross, Jamie and Tom Neumark. "Solar Power and its Discontents: Critiquing Off-grid Infrastructures of Inclusion in East Africa," *Development and Change* 52, no. 4 (2021): 902–926, doi:10.1111/dech.12668.
- Daft, Richard L. and Karl E. Weick. "Toward a Model of Organizations as Interpretation Systems," *The Academy of Management Review* 9, no. 2 (1984): 284–295, doi:10.2307/258441.
- de Hoop, Evelien, Auke Pols, and Henny Romijn. "Limits to Responsible Innovation," *Journal of Responsible Innovation* 3, no. 2 (2016): 110–134, doi:10.1080/23299460.2016.1231396.
- Degbey, William Y., Elina Pelto, Christina Öberg, and Abraham Carmeli. "Customers Driving a Firm's Responsible Innovation Response for Grand Challenges: A Co-active Issue-selling Perspective," *The Journal of Product Innovation Management* 41, no. 2 (2024): 379–402, doi:10.1111/jpim.12705.
- Evans, Steve, Doroteya Vladimirova, Maria Holgado, et al. "Business Model Innovation for Sustainability: Towards a Unified Perspective for Creation of Sustainable Business Models," *Business Strategy and the Environment* 26, no. 5 (2017): 597–608, doi:10.1002/bse.1939.
- Faccin, Kadigia, Nelson Beuter, Bibiana Martins, and Silvio Luis Vasconcellos. "Promoting Sustainable Business Model Innovation: A Dynamic Capabilities Approach," *Management Decision*(2025): 1–28, doi:10.1108/MD-07-2024-1548.
- Foss, Nicolai J. and Tina Saebi. "Fifteen Years of Research on Business Model Innovation: How Far have we Come, and Where should we Go?" *Journal of Management* 43, no. 1 (2017): 200–227, doi:10.1177/0149206316675927.
- Geissdoerfer, Martin, Nancy M. P. Bocken, and Erik Jan Hultink. "Design Thinking to Enhance the Sustainable Business Modelling Process – A Workshop Based on a Value Mapping Process," *Journal of Cleaner Production* 135,(2016): 1218–1232, doi:10.1016/j.jclepro.2016.07.020.
- Geissdoerfer, Martin, Doroteya Vladimirova, and Steve Evans. "Sustainable Business Model Innovation: A Review," *Journal of Cleaner Production* 198,(2018): 401–416, doi:10.1016/j.jclepro.2018.06.240.
- Genus, Audley and Marfuga Iskandarova. "Responsible Innovation: Its Institutionalisation and a Critique," *Technological Forecasting & Social Change* 128,(2018): 1–9, doi:10.1016/j.techfore.2017.09.029.
- George, Gerard, Anita M. McGahan, and Jaideep Prabhu. "Innovation for Inclusive Growth: Towards a Theoretical Framework and a Research Agenda," *Journal of Management Studies* 49, no. 4 (2012): 661–683, doi:10.1111/j.1467-6486.2012.01048.x.
- Gioia, Dennis A., Kevin G. Corley, and Aimee L. Hamilton. "Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology," *Organizational Research Methods* 16, no. 1 (2013): 15–31, doi:10.1177/1094428112452151.
- Groenewoudt, Aleid C. and Henny A. Romijn. "Limits of the Corporate-Led Market Approach to Off-Grid Energy Access: A Review," *Environmental Innovation and Societal Transitions* 42,(2022): 27–43, doi:10.1016/j.eist.2021.10.027.
- Guo, Lingling, Yue Cao, Ying Qu, and Ming-Lang Tseng. "Developing Sustainable Business Model Innovation through Stakeholder Management and Dynamic Capability: A Longitudinal Case Study," *Journal of Cleaner Production* 372,(2022): 133626, doi:10.1016/j.jclepro.2022.133626.
- Gurawska, Agata, Emad Yaghmaei, and Ibo van de Poel. 1st ed. Vol. 1. Routledge 2021. "Strategic Responsible Innovation Management (StRIM): A New Approach to Responsible Corporate Innovation through Strategic CSR."10.4324/9780429298998-6.
- Haanyika, Charles M. "Rural Electrification in Zambia: A Policy and Institutional Analysis," *Energy Policy* 36, no. 3 (2008): 1044–1058, doi:10.1016/j.enpol.2007.10.031.
- Halme, Minna and Maria Korpela. "Responsible Innovation Toward Sustainable Development in Small and Medium-Sized Enterprises: A Resource Perspective," *Business Strategy and the Environment* 23, no. 8 (2014): 547–566, doi:10.1002/bse.1801.

- Hossain, Mohammad Mobarak, Omar Al-Tabbaa, Mohammad Faisal Ahammad, and Subramanian Senthilkannan Muthu. Springer 2025. "Environmental Sustainability in Textile and Apparel Global Value Chain: Towards Achieving the United Nations Sustainable Development Goals."10.1007/978-3-031-80240-9_2.
- IEG (Independent Evaluation Group). (2016). Financial Viability of the Electricity Sector in Developing Countries: Recent Trends and Effectiveness of World Bank Interventions. International Bank for Reconstruction and Development/The World Bank Group.
- Inigo, Edurne A., Laura Albareda, and Paavo Ritala. "Business Model Innovation for Sustainability: Exploring Evolutionary and Radical Approaches through Dynamic Capabilities," *Industry and Innovation* 24, no. 5 (2017): 515–542, doi:10.1080/13662716.2017.1310034.
- IEA (2021), *World Energy Outlook 2021*, IEA, Paris <https://www.iea.org/reports/world-energy-outlook-2021>
- IRENA (2017), Accelerating Off-grid Renewable Energy: Key Findings and Recommendations from IOREC 2016, International Renewable Energy Agency, Abu Dhabi.
- Ivanova, Svetlana, Constanze Reichetzer, André Martinuzzi, Florian Findler, and Katharina Miko-Schefzig. "Frames, Interests, and Incentives - a Typology of Institutionalizing RRI in the Business Sector Derived from Ten Pioneering Projects," *Journal of Responsible Innovation* 10, no. 1 (2023), doi:10.1080/23299460.2023.2267736.
- Jasanoff, S., Markle, G. E., Peterson, J. C., & Pinch, T. J. (Eds.). (2001). *Handbook of science and technology studies*. SAGE Publications, Incorporated.
- Jay, Jason. "Navigating Paradox as a Mechanism of Change and Innovation in Hybrid Organizations," *Academy of Management Journal* 56, no. 1 (2013): 137–159, doi:10.5465/amj.2010.0772.
- Johns, Gary. "The Essential Impact of Context on Organizational Behavior," *The Academy of Management Review* 31, no. 2 (2006): 386–408, doi:10.5465/amr.2006.20208687.
- Kanter, R. M. "From Spare Change to Real Change. the Social Sector as Beta Site for Business Innovation," *Harvard Business Review* 77, no. 3 (1999): 122–132.
- Lehoux, Pascale, Hudson P. Silva, Jean-Louis Denis, Fiona A. Miller, Renata Pozelli Sabio, and Marguerite Mendell. "Moving Toward Responsible Value Creation: Business Model Challenges Faced by Organizations Producing Responsible Health Innovations," *The Journal of Product Innovation Management* 38, no. 5 (2021): 548–573, doi:10.1111/jpim.12596.
- Liu, Yipeng, Yijun Xing, Ferran Vendrell-Herrero, and Oscar F. Bustinza. "Setting Contextual Conditions to Resolve Grand Challenges through Responsible Innovation: A Comparative Patent Analysis in the Circular Economy," *The Journal of Product Innovation Management* 41, no. 2 (2024): 449–472, doi:10.1111/jpim.12659.
- Long, Thomas B. and Arnaud van Waes. "When Bike Sharing Business Models Go Bad: Incorporating Responsibility into Business Model Innovation," *Journal of Cleaner Production* 297,(2021): 126679, doi:10.1016/j.jclepro.2021.126679.
- Lubberink, R., Blok, V., van Ophem, J., & Omta, O. (2019). Responsible innovation by social entrepreneurs: an exploratory study of values integration in innovations. *Journal of Responsible Innovation*, 6(2), 179–210. <https://doi.org/10.1080/23299460.2019.1572374>
- Lüdeke-Freund, Florian, Sarah Carroux, Alexandre Joyce, Lorenzo Massa, and Henning Breuer. "The Sustainable Business Model Pattern taxonomy—45 Patterns to Support Sustainability-Oriented Business Model Innovation," *Sustainable Production and Consumption* 15,(2018): 145–162, doi:10.1016/j.spc.2018.06.004.
- Luttikhuis, Nikki and Kirsten S. Wiebe. "Analyzing SDG Interlinkages: Identifying Trade-Offs and Synergies for a Responsible Innovation," *Sustainability Science* 18, no. 4 (2023): 1813–1831, doi:10.1007/s11625-023-01336-x.
- Macnaghten, Phil. *The Making of Responsible Innovation*. Cambridge University Press, 2020.
- Magni, Domitilla, Rosa Palladino, Armando Papa, and Patrice Cailleba. "Exploring the Journey of Responsible Business Model Innovation in Asian Companies: A Review and Future Research Agenda," *Asia Pacific Journal of Management* 41, no. 3 (2024): 1031–1060, doi:10.1007/s10490-022-09813-0.
- Mahto, Raj V., Olga Belousova, and Saurabh Ahluwalia. "Abundance – A New Window on how Disruptive Innovation Occurs," *Technological Forecasting & Social Change* 155,(2020): 119064, doi:10.1016/j.techfore.2017.09.008.
- Marti, Ignasi. "Transformational Business Models, Grand Challenges, and Social Impact," *Journal of Business Ethics* 152, no. 4 (2018): 965–976, doi:10.1007/s10551-018-3824-3.
- Mendes, Jéssica Alves Justo, Arthur Yassine Oliveira, Lígia Suniga Santos, Mateus Cecílio Gerolamo, and Vânia Gomes Zuin Zeidler. "A Theoretical Framework to Support Green Agripreneurship Avoiding Greenwashing," *Environment, Development and Sustainability* 27, no. 9 (2025): 21779–21835, doi:10.1007/s10668-024-04965-z.
- Mignon, Ingrid and Amanda Bankel. "Sustainable Business Models and Innovation Strategies to Realize them: A Review of 87 Empirical Cases," *Business Strategy and the Environment* 32, no. 4 (2023): 1357–1372, doi:10.1002/bse.3192.
- Munro, Paul, Veronica Jacome, Shanil Samarakoon, and Nathanael Ojong. Springer International Publishing AG 2022. "Off-Grid Enterprise: A Critical History of Small-Scale Off-Grid Solar in Sub-Saharan Africa."10.1007/978-3-031-13825-6_2.

- Ortiz-Avram, Daniela, Nelly Ovcharova, and Alexander Engelmann. "Dynamic Capabilities for Sustainability: Toward a Typology Based on Dimensions of Sustainability-oriented Innovation and Stakeholder Integration," *Business Strategy and the Environment* 33, no. 4 (2024): 2969–3004, doi:10.1002/bse.3630.
- Osterwalder, Alexander, and Yves Pigneur. *Business model generation: a handbook for visionaries, game changers, and challengers*. John Wiley & Sons, 2013.
- Owen, Richard, Mario Pansera, Jonathan Hankins, and René von Schomberg. Edward Elgar Publishing 2019. "Responsible Innovation: Process and Politics." 10.4337/9781784718862.00009.
- Owen, Richard, Mario Pansera, Phil Macnaghten, and Sally Randles. "Organisational Institutionalisation of Responsible Innovation," *Research Policy* 50, no. 1 (2021): 104132, doi:10.1016/j.respol.2020.104132.
- Owen, Richard, Bessant, John R., and Heintz, Maggy, eds. *Responsible Innovation : Managing the Responsible Emergence of Science and Innovation in Society*. Newark: John Wiley & Sons, Incorporated, 2013.
- Pan, Ling, Zeshui Xu, and Marinko Skare. "Sustainable Business Model Innovation Literature: A Bibliometrics Analysis," *Review of Managerial Science* 17, no. 3 (2023): 757–785, doi:10.1007/s11846-022-00548-2.
- Pereira, Vijay, Yama Temouri, Geoffrey Wood, Umesh Bamel, and Pawan Budhwar. "How do Grand Challenges Determine, Drive and Influence the Innovation Efforts of For-profit Firms? A Multidimensional Analysis," *The Journal of Product Innovation Management* 41, no. 2 (2024): 184–210, doi:10.1111/jpim.12677.
- Prno, Jason and D. Scott Slocombe. "Exploring the Origins of 'Social License to Operate' in the Mining Sector: Perspectives from Governance and Sustainability Theories," *Resources Policy* 37, no. 3 (2012): 346–357, doi:10.1016/j.resourpol.2012.04.002.
- Ranabahu, Nadeera. "'Wicked' Solutions for 'Wicked' Problems: Responsible Innovations in Social Enterprises for Sustainable Development," *Journal of Management & Organization* 26, no. 6 (2020): 995–1013, doi:10.1017/jmo.2020.20.
- Rathobei, Kabelo Esther, Helena Ranängen, and Åsa Lindman. "Stakeholder Integration in Sustainable Business Models to Enhance Value Delivery for a Broader Range of Stakeholders," *Business Strategy and the Environment* 33, no. 4 (2024): 3687–3706, doi:10.1002/bse.3651.
- Reece, Jason, Bernadette Hanlon, and Ryan Edwards. "Philanthropic Investment in Equity: Cultivating Grass Roots Leaders for the Equitable Revitalization of Marginalized Communities," *International Journal of Community Well-Being* 5, no. 2 (2022): 401–429, doi:10.1007/s42413-021-00159-x.
- Ribeiro, Barbara E., Robert D. J. Smith, and Kate Millar. "A Mobilising Concept? Unpacking Academic Representations of Responsible Research and Innovation," *Science and Engineering Ethics* 23, no. 1 (2017): 81–103, doi:10.1007/s11948-016-9761-6.
- Ringvold, Kristin, Tina Saebi, and Nicolai Foss. "Developing Sustainable Business Models: A Microfoundational Perspective," *Organization & Environment* 36, no. 2 (2023): 315–348, doi:10.1177/10860266221117250.
- Rip, Arie. , "The Past and Future of RRI," *Life Sciences, Society and Policy* 10, no. 1 (2014): 17, doi:10.1186/s40504-014-0017-4.
- Ritala, Paavo, Pontus Huotari, Nancy Bocken, Laura Albareda, and Kaisu Puumalainen. "Sustainable Business Model Adoption among S&P 500 Firms: A Longitudinal Content Analysis Study," *Journal of Cleaner Production* 170,(2018): 216–226, doi:10.1016/j.jclepro.2017.09.159.
- Schaltegger, Stefan, Erik G. Hansen, and Florian Lüdeke-Freund. "Business Models for Sustainability: Origins, Present Research, and Future Avenues," *Organization & Environment* 29, no. 1 (2016): 3–10, doi:10.1177/1086026615599806.
- Schaltegger, Stefan, Florian Lüdeke-Freund, and Erik G. Hansen. "Business Models for Sustainability: A Co-Evolutionary Analysis of Sustainable Entrepreneurship, Innovation, and Transformation," *Organization & Environment* 29, no. 3 (2016): 264–289, doi:10.1177/1086026616633272.
- Scherer, Andreas Georg and Christian Voegtlin. "Corporate Governance for Responsible Innovation: Approaches to Corporate Governance and their Implications for Sustainable Development," *Academy of Management Perspectives* 34, no. 2 (2020): 182–208, doi:10.5465/amp.2017.0175.
- Schomberg, Rene Von. *International Handbook on Responsible Innovation. A Global Resource*. Edward Elgar Publishing 2019. "Why Responsible Innovation."
- Shakeel, Jawaria, Abbas Mardani, Abdoulmohammad Gholamzadeh Chofreh, Feybi Ariani Goni, and Jiří Jaromír Klemeš. ,Anatomy of Sustainable Business Model Innovation," *Journal of Cleaner Production* 261,(2020): 121201, doi:10.1016/j.jclepro.2020.121201.
- Siggelkow, Nicolaj. "Persuasion with Case Studies," *Academy of Management Journal* 50, no. 1 (2007): 20–24, doi:10.5465/amj.2007.24160882.
- Smith, Wendy K. and Marya L. Besharov. "Bowling before Dual Gods: How Structured Flexibility Sustains Organizational Hybridity," *Administrative Science Quarterly* 64, no. 1 (2019): 1–44, doi:10.1177/0001839217750826.
- Smith, Wendy K. and Marianne W. Lewis. "Toward a Theory of Paradox: A Dynamic Equilibrium Model of Organizing," *The Academy of Management Review* 36, no. 2 (2011): 381–403, doi:10.5465/amr.2009.0223.

- Sovacool, Benjamin K., Mari Martiskainen, Andrew Hook, and Lucy Baker. "Decarbonization and its Discontents: A Critical Energy Justice Perspective on Four Low-Carbon Transitions," *Climatic Change* 155, no. 4 (2019): 581–619, doi:10.1007/s10584-019-02521-7.
- Stilgoe, Jack, Richard Owen, and Phil Macnaghten. "Developing a Framework for Responsible Innovation," *Research Policy* 42, no. 9 (2013): 1568–1580, doi:10.1016/j.respol.2013.05.008.
- Stubbs, Wendy and Chris Cocklin. "Conceptualizing a "Sustainability Business Model"," *Organization & Environment* 21, no. 2 (2008): 103–127, doi:10.1177/1086026608318042.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533. [https://doi.org/10.1002/\(SICI\)1097-0266\(199708\)18:7<509::AID-SMJ882>3.0.CO;2-Z](https://doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z)
- Teece, David J. "Explicating Dynamic Capabilities: The Nature and Microfoundations of (Sustainable) Enterprise Performance," *Strategic Management Journal* 28, no. 13 (2007): 1319–1350, doi:10.1002/smj.640.
- Teece, D. J. (2010). Business Models, Business Strategy and Innovation. *Long Range Planning*, 43(2), 172–194. <https://doi.org/10.1016/j.lrp.2009.07.003>
- Tracy, Sarah J. "Qualitative Quality: Eight "Big-Tent" Criteria for Excellent Qualitative Research," *Qualitative Inquiry* 16, no. 10 (2010): 837–851, doi:10.1177/1077800410383121.
- Tuckerman, Lauren, Jen Nelles, Kevin Walsh, and Tim Vorley. "Sustainable Innovation Policy: Examining the Discourse of UK Innovation Policy," *Environmental Science & Policy* 145,(2023): 286–297, doi:10.1016/j.envsci.2023.04.018.
- Umoru, Ugbede, Oyedele Martins Ogundana, Musa Mangena, and Victor Udeozor. "Informal Institutions and Multinationals' Drive Towards Sustainable Development Goals (SDGs): A Dark-Side Perspective," *Business Ethics, the Environment & Responsibility (Print)* 35, no. 1 (2026): 75–98, doi:10.1111/beer.12773.
- Uzzi, Brian. "Social Structure and Competition in Interfirm Networks: The Paradox of Embeddedness," *Administrative Science Quarterly* 42, no. 1 (1997): 35–67, doi:10.2307/2393808.
- van de Poel, Ibo and Martin Sand. "Varieties of Responsibility: Two Problems of Responsible Innovation," *Synthese (Dordrecht)* 198,(2021): S4769–S4787, doi:10.1007/s11229-018-01951-7.
- van Lente, Harro, Tsjalling Swierstra, and Pierre-Benoît Joly. "Responsible Innovation as a Critique of Technology Assessment," *Journal of Responsible Innovation* 4, no. 2 (2017): 254–261, doi:10.1080/23299460.2017.1326261.
- Voegtlin, Christian and Andreas Georg Scherer. "Responsible Innovation and the Innovation of Responsibility: Governing Sustainable Development in a Globalized World," *IDEAS Working Paper Series from RePEc* 143, no. 2 (2017): 227–243, doi:10.1007/s10551-015-2769-z.
- Voegtlin, Christian, Andreas Georg Scherer, Günter K. Stahl, and Olga Hawn. "Grand Societal Challenges and Responsible Innovation," *IDEAS Working Paper Series from RePEc* 59, no. 1 (2022): 1–28, doi:10.1111/joms.12785.
- von Schomberg, René, and Hankins, Jonathan. *International Handbook on Responsible Innovation. A global resource*. Edward Elgar Publishing, 2019
- Wang, Liyan, Wei Zhang, Steven White, and Hang Fan. "Digital Technology-based Business Model Design and Innovation to Address Grand Challenges: A Process Model," *Strategic Entrepreneurship Journal* 19, no. 4 (2025): 749–776, doi:10.1002/sej.1518.
- Yaghmaei, Emad, Emad Yaghmaei, and Ibo van de Poel. *Assessment of Responsible Innovation : Methods and Practices*. Taylor & Francis 2020.
- Yin, Robert K. *Case Study Research and Applications : Design and Methods*. SAGE 2018.