Paradoxical Tensions in Business Models for Sustainability

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Abstract

Business Models for Sustainability (BMfS) are ripe with paradoxical tensions resulting from ecological, social and economic demands (Hahn et al., 2015; Carmine & De Marchi, 2023; Van der Byl & Slawinski, 2015), e.g. striving for profit and for purpose, providing for investor interests and for stakeholder interests, short-term and long-term perspectives. This research seeks to better understand the inner workings of paradoxical tensions in BMfS as well as strategies to navigate these and resulting sustainability implications by applying a *paradox lens* (Lewis & Smith, 2022; Hahn et al., 2015). It is work in progress, which focuses on sustainable startups. The empirical research project started in April 2024 and runs (at least) until September 2024 in collaboration with Circular Valley, a German accelerator for circular BMfS operating worldwide. The research contributes to the *field of BMfS* (Bocken et al., 2014; Reuter & Krauspe, 2022) respectively to the field of sustainable business model *(SBM)-patterns* (Lüdeke-Freund et al., 2019a; Lüdeke-Freund et al., 2019b; Lüdeke-Freund et al., 2022; Remane et al., 2017) as well as to the field of *paradox theory* (Smith & Lewis, 2022; Smith & Lewis, 2011; Hahn et al., 2018) and *paradoxical tensions* (van Bommel, 2018; Van der Byl & Slawinski, 2015; Johnson, 2011; 2020; 2021). It does so by: a) identifying **types of paradoxical tensions** in *specific* BMfS (**detective**), b) analyzing the adoption of a **paradox lens** for addressing the tensions (i.e. **paradoxical thinking/sensemaking**) and c) exploring **paradoxical strategies** that actors use to navigate the tensions (**response**).

Keywords

business models for sustainability, sustainable business model patterns, circular business models, paradoxical tensions, paradox theory

(1) Problem Context

Business Models for Sustainability (BMfS) respectively Sustainable Business Models (SBM) enable organizations to address sustainability challenges and to promote a transition towards sustainability (Lüdeke-Freund et al., 2022; Schaltegger et al., 2016; Bocken et al., 2013; Bocken et al., 2015; Knudson, 2023). Thereby BMfS account not only for economic aspects, but equally for environmental and social aspects and aim to create value in all three dimensions (Dembek et al., 2022; Bocken, 2021). Due to this nature, BMfS often entail competing, yet interrelated demands from ecological, societal and economic value dimensions, logics and levels of interactions (Schultz, 2022), which can lead to paradoxical tensions (Hahn et al., 2015; Carmine & De Marchi, 2023; Van der Byl & Slawinski, 2015). Examples of such paradoxical tensions are: striving for profit and for purpose, providing for investor interests and for stakeholder interests, short-term and long-term perspectives. Equally, on larger scale, problems such as climate change, overexploitation of resources, social exclusion and loss of biodiversity are linked and need to be addressed coherently and holistically at various system levels. Addressing these complex challenges by using either-or-approaches (e.g. either focus on creating decent jobs OR on climate protection) as well as using instrumental business case approaches (van Bommel, 2018) encounter limitations and often can be ineffective (Smith & Lewis, 2022; Van der Byl & Slawinski, 2015). The need for more innovative and integrative approaches becomes more and more evident (e.g. how can we create decent jobs AND climate protection?). More integrative approaches based on paradoxical thinking and paradoxical management might help to address these tensions in BMfS (van Bommel, 2018; Schultz, 2022; Hahn et al., 2015; Van der Byl & Slawinski, 2015).

This is the focus of the research project outlined in this paper. It must be mentioned that the research is still work in progress. It started last year with a literature review as well as eight qualitative interviews with entrepreneurs from BMfS. A larger research project will be taking place this year (April 2024 – September 2024) in collaboration with the accelerator Circular Valley (see part (3) - research design and methodology - below).

(2) Research Questions and Foundations

While there is research on *different types of sustainable business models* (Bocken et al., 2014; Reuter & Krauspe, 2022; Knudson, 2023) respectively on *business model patterns* (Lüdeke-Freund et al., 2018; Lüdeke-Freund et al., 2019a; Lüdeke-Freund et al., 2019b; Lüdeke-Freund et al., 2022; Remane et al., 2017) as well as research on *different types of tensions* (Smith & Lewis, 2022; Smith & Lewis, 2011; Hahn et al., 2018) and on *strategies of how to navigate tensions* (Smith & Lewis, 2022; van Bommel, 2018; Van der Byl & Slawinski, 2015; Johnson, 2011, 2020, 2021), bringing those three aspects together has only very recently gained increased research interest (Daddi, 2019; Morales, 2020; De Angelis, 2021; Hahn & Pinkse, 2022; Luoma et al., 2023; Dagilienė & Varaniūtė, 2023). The challenge of how to deal with paradoxical tensions when combining different SBM-patterns is also identified by Lüdeke-Freund et al.: "Combining different patterns will inevitably lead to tensions and trade-offs and even paradoxical situations" (2022, p. 57). However, with respect to *different types of BMfS* respectively to *different combinations of SBM-patterns*, it still remains largely unclear which paradoxical tensions these are, how they come about and how best to navigate them (e.g. Which are typical paradoxical tensions in sharing models, in product-service-systems, etc.? How do they arise and how can they be navigated to increase sustainability?). Concluding, it can be stated that there still seems to be a research gap in the analysis, understanding and mapping of "typical" paradoxical tensions arising in different BMfS (resp. business model elements and combinations of SBM-patterns) as well as strategies to navigate those tensions in order to promote sustainability, especially based on empirical findings (Dagilienė & Varaniūtė, 2023). Based on the differentiation by Carmine and de Marchi (2023), the research outlined in this paper therefore poses the following research questions:

> (RQ1) Detective lens: What types of paradoxical tensions can be identified in specific BMfS?
>
> (RQ2) Sensemaking lens: How do entrepreneurs make sense of the tensions experienced in BMfS? How can entrepreneurs adopt a paradox perspective?
>
> (RQ3) Resolving lens: Which paradoxical strategies can entrepreneurs use to navigate the tensions in specific BMfS in order to promote sustainability?

In the following, each research question shall shortly be elaborated on: The first research question focuses on the inner workings of paradoxical tensions in BMfS (e.g. a tension of cooperation and competition in circular business models). Tensions identified can be described and categorized according to types of tensions identified in the literature (such

as Smith & Lewis, 2022; Dagilienė & Varaniūtė, 2023; Morales, 2020) as well as new categories identified in the empirical research. These tensions can then be discussed in relation to specific types of BMfS (Bocken et al., 2014), elements of BMfS (Bocken et al., 2018) resp. SBM-patterns (Lüdeke-Freund et al., 2022) to better understand their inner workings and how these tensions can lead to competing sustainability demands experienced by the entrepreneurs. The second research question analyses how entrepreneurs make sense of the competing demands, which they experience with respect to their business model/combination of business model patterns, i.e. do they see it as a trade-off, a paradoxical tension, a dilemma etc.? What determines their sensemaking? This will build on the work by Schultz (2022) (framework conditions for sensemaking), Carmine & De Marchi (2022) (paradoxical cognitive frames), Miron-Spektor (2018) (paradox mindset) and Rimanoczy (2020) as well as Rimanoczy & Klingenberg (2021) (sustainability mindset). The third question focuses on strategies to navigate tensions in specific business models (Bocken et al., 2014) resp. in specific combinations of business model patterns (Lüdeke-Freund et al., 2022) and builds on the work of van Bommel (2018), Van der Byl & Slawinski (2015) as well as Johnson (2011, 2020 and 2021).

Since this research endeavor is complex and full of knotted paradoxical tensions itself, focal points need to be set, revisited and potentially revised in the research process: First, the research focuses on paradoxical tensions, which can be defined as “contradictory yet interrelated elements that exist simultaneously and persist over time“ (Smith & Lewis, 2011, p. 382; see also Gaim & Wåhlin, 2016), so they are persistent contradictions between two (or more) competing yet interdependent forces (Wei et al., 2022). Hence, paradoxical tensions differ from other types of tensions, in the sense that they comprise not only competing but equally interrelated elements. The competing element of a paradox can result in actors *perceiving* an underlying paradox as a dilemma or conflicting demands from economical, ecological and societal spheres (Smith & Lewis, 2022; Pratt et al., 2024). However, the interrelatedness of both poles needs to be taken into account: Because of their inherently contradictory yet interdependent nature, paradoxes cannot be resolved through a simple decision favoring one pole over the other. Opting for one pole while neglecting the other may appear like the simplest path momentarily; however, over time, the neglected pole's issues resurface, given the inherent interdependence between them. This frequently results in a cyclical pattern, where the previously sidelined pole resurges, while the other remains unnoticed (see the discussion on Vicious Cycles in Smith and Lewis, 2022, pp. 43 ff). As the concept of paradoxical tensions is still quite young, business actors might perceive and treat the competing demands as trade-offs, applying an either-or-approach, rather than seeing them as paradoxical tensions and applying more suited, integrative approaches (van Bommel, 2018; Pratt et al., 2024).

Before outlining the research design in the next chapter, a few basic theoretical assumptions will be outlined: As for the **ontology** of organizational paradoxical tensions

we assume that they are both latently *inherent in the system*, i.e. the BMfS itself, as well as *socially constructed* (Hahn & Knight, 2021). For example in hybrid business models, the paradoxical tension of profit and purpose is inherent in the system, while framework conditions/constraints (Schultz, 2022) as well as the level of a paradox mindset (Miron-Spektor et al., 2018) of the actors involved might determine how an actor makes sense of it (e.g. perceiving it as a trade-off and using an either-or-approach versus seeing it as a paradoxical tension and following a more integrative approach, which allows to cater to the different poles – economic, social, environmental – of the tension).

With respect to the **types** of tensions, we start clustering the tensions identified in our empirical work under the four categories by Smith and Lewis (2022), i.e. performing, belonging, learning and organizing tensions as well as under the categories by Dagilienė and Varaniūtė (2023), i.e. goal setting, performance orientation, compliance, in-network collaboration, innovation adoption and strategic paradox. However, this is only the starting point. It can be expected that our research will lead to additional types of tensions, focused on startups that are designed as circular and sustainable business models from scratch, while the type of tensions by Smith and Lewis (2022) are generic and those from Dagilienė and Varaniūtė (2023) focus on companies with a linear Business Model, transitioning to a circular model. With respect to the level of analysis of the tensions (individual, organizational, system) our research considers all three based on Carmine and de Marchi (2023). However, the organizational level, i.e. tensions in a specific BMfS itself, will be the focal point. With respect to different ***types of BMfS*** (Bocken et al., 2014) and ***SBM-patterns*** (Lüdeke-Freund et al., 2022) we will consider various ones as outlined above. To start with, circular business models respectively combinations entailing closing-the-loop-patterns will be in the focus, due to the empirical partner being the accelerator Circular Valley.

(3) Research Design & Methodology

Since the research builds on the collaboration and trainings with entrepreneurs from the accelerator Circular Valley (Wuppertal, Germany) and since action research has already successfully been used in a paradox context (Greco et al., 2019; Greco & Berti, 2023; Sharma et al., 2022, this research will adopt an action research approach (Bergold & Thomas, 2012; Lewin, 1946).

In action research, a dual purpose is pursued, where the goals of transforming social reality and understanding it are interwoven (Unger, 2014, p.1). Fazey et al. (2018) argue that considering the urgent need to transform society due to the climate crisis, research should shift from problem analysis towards problem solutions. Given the dual objectives in this complex research domain, we will be employing a triangulation of methods. Specifically, we will be combining both quantitative and qualitative approaches to scientifically accompany the training phase. The research process will be structured into four sequential

steps of data collection and subsequent analysis, each step with a distinctive objective (see below).

Sampling

As a result of our research collaboration, the researchers are working with a pre-selected sample of our research partner Circular Valley.

Circular Valley is an initiative to evolve the Rhine-Ruhr metropolitan region into a global hub for the circular economy – similar to California's Silicon Valley for the Digital Economy – where multinational corporations, established SMEs, and academia come together with innovative startups from around the world to collectively develop ideas and solutions for an efficient circular economy. Based in Wuppertal, in the middle of North Rhine-Westphalia and the wider Rhine-Ruhr region, it is located in Europe's largest metropolitan area with over 20,000 international companies, over 70 universities and more than 16 million residents within a 100 km radius. The initiative operates an accelerator program to support sustainable startup companies from around the world that are active in the field of circular economy (Circular Valley, n.d.). The entrepreneurs collaborating with Circular Valley undergo various online and on-site training sessions on "Entrepreneurship in the Context of Circular Economy" in their respective countries and during two on-site phases of 2-3 weeks each in Wuppertal, Germany. The Batch, which we are working with consists of 15 business models, whereby there are 1-2 representative from each taking part in the accelerator program.

The sample selection of Circular Valley is focused on three main aspects:

1. Value chain orchestration: Special focus on economically viable and scalable solutions.
2. Alternative Feedstocks with the inclusion of bioeconomy: Alternative feedstock for fossil materials as well as "unused" and "sub-optimally used" biobased materials.
3. New Chemical Recycling Technologies: Optimized technologies which can work not only with one polymer type but with mixtures of polymers.

Data Collection

The Data Collection process will be structured into four sequential steps, each with a distinctive objective.

Step 1: Pre-Training Questionnaire and first Action Lab - Identification of business model elements and patterns as well as initial identification of (paradoxical) tensions prior to the training phase.

Within this context, the research project outlined in this paper, started this year April 2024. An Action Lab on Sustainable Business Model Design was conducted with the startups

during their first stay in Wuppertal. The startups profited from a reflection and fostering of sustainability aspects of their business models, while the researchers gained a deeper understanding of the types of business models in the sample. Following this first workshop, an online survey was sent out to the startups this April. This aims at gaining a general understanding of the business model as well as the potential (paradoxical) tensions, which entrepreneurs encounter, how the entrepreneurs perceive the tensions and how they deal with them. At the moment of writing this paper, the startups are back in their home countries, filling out the online survey.

Step 2: Second Action Lab: Tensions in sustainable business models

Once the entrepreneurs are back in Wuppertal for their second stay in May 2024, the entrepreneurs will undergo an Action Lab on paradoxical tensions and on strategies to navigate tensions (Bommel, 2018; Van der Byl & Slawinski, 2015; Johnson, 2011, 2020 and 2021; Smith & Lewis, 2022; Dagilienė and Varaniūtė, 2023), as well as on the mindsets involved (Miron-Spektor et al., 2018; Rimanoczy, 2020; Rimanoczy & Klingenberg, 2021). The Action Labs involve imparting knowledge and skills to the founders while simultaneously providing scientific support through qualitative surveys after the training.

Step 3: Focus group research – in-depth exploration of perceived tensions and how they materialize, mindshift exploration as well as navigating tensions

After the Action Labs three focus groups (Krueger & Morgan, 1998; Lamnek, 2005; Kühn & Koschel, 2011) will be conducted face-to-face, to deeply understand common ("typical") tensions in the business models, which the entrepreneurs identify after the training, as well as their approaches and strategies for resolution before and after the training. The goal is to determine the specific ways in which the training sessions were able to convey helpful strategies to navigate tensions in BMfS. All training participants will take part in the focus groups. The founders will be re-sampled according to their type of business in order to create groups that are as internally similar and cohesive as possible. This group composition facilitates discussion about upcoming tensions and solutions. Furthermore, the discussions will be designed in an exploratory manner and moderated using a discussion guide. This will allow for spontaneous follow-up questions and opportunities for deeper probing. The following overarching themes will be addressed: Motivations for founding a business in the circular economy domain, current key challenges faced by the entrepreneurs, perceived tensions prior to the training program, insights gained from the training program, learnings on managing paradoxical tensions through the training and specific training aspects that enabled a mindset shift.

For reasons of research ethics, the groups will be interviewed by a professional focus group moderator who had not conducted the trainings herself but had only been present as a silent observer during the training sessions.

Step 4: Post-training questionnaire and interviews

Once the entrepreneurs returned to their home countries a final online questionnaire will be send out (approx. 1-2 months after their return) in order to evaluate, which paradoxical tensions they perceive now and how they navigate those tensions.

In addition to the group discussions, it is planned to conduct virtual in-depth interviews (Misoch, 2019; Morris, 2015; Charmaz, 2014) with selected training participants in the period following the Circular Valley program (i.e. 1 – 2 months later). The participants selected will be a subset of the overall training participants. The researchers aim to gain an even deeper understanding of how the entrepreneurs perceive and make sense of paradoxical tensions and which role framework conditions (e.g. perceived limited constraints) play in this respect.

The focus group discussions as well as the interviews will be held in English, captured on audio and transcribed with permission The researchers are looking for emerging concepts related to tensions, paradoxes and strategies while adopting a perspective that is as open and inclusive as possible.

Analysis of Focus groups and Interviews

Data analysis is conducted based on the Gioia methodology (Gioia et al., 2012), which is based on grounded theory methodology. It is hence suitable for qualitative, interpretive research in the organizational domain. The method is applied here for analyzing the data from both the focus group discussions and the qualitative interviews. An advantage of the Gioia methodology is its structured and systematic approach to theory development. As the qualitative research is divided into two parts (focus groups + interviews) focus group data will be analyzed before the individual interview guide will be developed. This iterative approach helps uncover both missing data as well as gaps in comprehension.

(4) (Expected) Results

To gain an overview, a literature review as well as eight qualitative interviews with entrepreneurs from Circular Valley were conducted within the context of a master thesis. The following results are based on this work and can be considered preliminary examples

of results relating to the first research question (RQ1) that might emerge from the research project outlined.

All eight start-ups interviewed decided at an early stage how to implement their business idea by means of a circular business model. This resulted in different organizational settings. The research results outlined below build on the case examples of a foundation with three spin-offs following a ***circular business model*** from the solar industry (see tensions a and b below). Thereby the main company is organized as a foundation and responsible for research and development, i.e. taking on a strategic role. The three spin-offs generate the revenues along a solar recycling value chain. The first spin-off (A) distributes still usable PV-panels directly to customers, spin–off B recycles PV-panels and offers all materials such as glass, aluminum and silicon to the market. Spin-off C is specialized in the treatment of secondary-source silicon and sells it to the market. The last tension (c) relates to a start-up from the packaging industry. It is important to mention that the thesis focused on identifying perceived tensions in the business models (i.e. only detective lens relating to first research question RQ1). The other two research questions on paradoxical sensemaking and paradoxical strategies were *not* addressed since no workshop or training on paradoxical tensions was delivered. The following outlines exemplary three tensions, which were identified in the business models from circular economy (CE):

a) competition – cooperation
b) percentage of secondary materials – product quality
c) percentage materials sourced locally – costs

a) <u>Tension: Competition - Cooperation</u>

Description of identified tension: The founder of the foundation as well as the founders from the spin-offs identify with the goals of a circular economy and see the group as part of a community (cooperation approach), that has the potential to improve the environment. Therefore, all three spin-offs are in exchange and collaborate in initiatives to support the circular idea politically. At the same time, however, each spin-off is also an (independent) organization with individual goals. Therefore, tensions arise from collaborating too closely and possibly loosing on revenues due to lost contracts to competitors. Also, intellectual property is not shared (competitive approach). Hence there is a tension between collaborating in order to close the loop and promote circularity and being in competition on the market.

Type of tension: The tension described above can be considered a ***belonging tension*** (Smith & Lewis 2022), also see knotted paradox of coopetition (Manzhynski & Biedenbach, 2023), since the start-ups consider themselves part of the group and commit to common goals, at the same time they need to act as individual entities, following their individual goals. Even though the tension became salient due to the organizational set-up, the "competition –

cooperation" tension, might be one often found in the circular economy, where actors need to collaborate in order to close the loop, yet might still compete in other areas (e.g. resource distribution).

b) Tension: percentage of secondary materials - product quality

Description of identified tension: This tension was identified with respect to one of the spin-offs (spin-off B), which buys used solar panels, retrieves the silicon from it and resells the silicon as secondary material. The tension was one, which the business customers (producers of new solar panels) of this spin-off experienced and which had substantial consequences for the spin-off. The tension arose because the business customer aimed to use as much secondary material as possible in order to be as circular as possible, but the secondary silicon is of lower quality than that from primary sources and hence impacts the overall quality of the new solar panels. Hence the tension identified here is one of "percentage of secondary material in a product" and "quality of a product". The tension was so salient that spin-off B decided to move to other markets, where the lower quality of the silicon was considered acceptable.

Type of tension: The tension described above can be considered a ***performing tension*** (Smith & Lewis 2022), since the tension arises due to competing demands for performing well with respect to sustainability targets by using as much secondary materials as possible and the demand for high product quality. This is a tension, which has also been identified in other circular business models (Morales, 2020; Daddi, 2019) and hence might be a further one to consider when developing a typology of different paradoxical tensions in specific BMfS.

c) Tension: percentage materials sourced locally - costs

Description of identified tension: This tension was identified by a circular start-up from the packaging industry. It offers re-usable solutions for customers to reduce the waste of materials. This start-up faced a tension related to the sourcing of raw materials for its packing solution. The choices were cheap materials from Asia, which contradicted its sustainability goal due to increased CO2 emissions from transport, or sourcing the raw material for its packaging locally, yet at significantly higher cost.

Type of tension: The tensions described above can be considered a ***performing tension*** (Smith & Lewis 2022), since it refers to competing demands in the goals of the start-up to be ecologically sustainable and economically successful. It hence relates to the "typical" tension of "profit – purpose", which many BMfS struggle with (see also Morales 2020). It can also be related to tension b) described above and the two might be considered knotted paradoxes (Smith & Lewis, 2022; Jarzabkowski et al., 2021).

As stated, the results of the preliminary research outlined above, can only be considered exemplary. Most importantly, they only relate to the *first research question* (RQ1). Hence no further elaborations can be given with respect to paradox thinking/sensemaking (RQ2) as well as strategies adopted to deal with the tension (RQ3). The research project that just started in April 2024 focuses on a larger sample of 15 business models, includes four researchers and focuses on *all three research questions* outlined above.

(5) Summary, Contributions and Outlook

Business Models for Sustainability (BMfS) are ripe with paradoxical tensions resulting from ecological, social and economic demands (Hahn et al., 2015; Carmine & De Marchi, 2023; Van der Byl & Slawinski, 2015). This research seeks to better understand the inner workings of paradoxical tensions in BMfS respectively SBM-patterns as well as strategies to navigate these and resulting sustainability implications. It is work in progress, with preliminary research conducted last year and a research project that started April 2024 and running (at least) until September 2024. The ***research contributes*** to the field of BMfS (Bocken et al., 2014; Reuter & Krauspe, 2022) respectively to the field of SBM-patterns (Lüdeke-Freund et al., 2019a; Lüdeke-Freund et al., 2019b; Lüdeke-Freund et al., 2022; Remane et al., 2017) as well as to the field of paradoxical tensions (Smith & Lewis, 2022; van Bommel, 2018; Van der Byl & Slawinski, 2015; Johnson, 2011; Johnson, 2020; Johnson, 2021) and paradox theory (Smith & Lewis, 2022; Smith & Lewis, 2011; Hahn et al., 2018) by: a) identifying *types of paradoxical tensions* in specific BMfS (*detective*), specifically startups, b) analyzing the adoption of a *paradox lens* for addressing the tensions (i.e. *paradoxical thinking/sensemaking*) and c) exploring *paradoxical strategies* which entrepreneurs use to navigate the tensions (*response*). As a further contribution, a *typology* of different paradoxical tensions which are "typical" for specific types of BMfS shall be developed. This can be very valuable to business actors engaging in a specific type of business model, so that they can be aware of paradoxical tensions lying at the heart of competing demands which they might experience. The research contributes to *empirical* findings within paradox theory, which are still rather scarce (Dagilienė & Varaniūtė, 2023) and here especially to the startup scene, which has not been much in the focus yet. Also, it will be interesting to explore tensions in business models that were designed circular and sustainable from scratch as compared to linear organizations transitioning to circular business models (Dagilienė & Varaniūtė 2023).

With respect to ***contributions to business practice*** the research hence aims at a) helping entrepreneurs as well as other actors *realizing*, when competing demands from economic, ecological and social dimensions arise from underlying paradoxical tensions (awareness raising), *understanding their nature* as well as *identifying strategies* how to navigate the tensions in BMfS. This can help business actors to adopt a better understanding of the nature of tensions in BMfS in general, help them identifying and communicating about

specific tensions with respect to their own business model and how best to navigate the tensions, e.g. by different cognitive frames and/or changes in their business model.

As future outlook it would be most interesting to additionally explore, how different strategies in navigating tensions in BMfS result in different outcomes, impacts and values (based on Dembek et al. 2022).

References

Bergold, J. & Thomas, S. (2012) Participatory Research Methods: A Methodological Approach in Motion. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 13(1). Available from: https://doi.org/10.17169/fqs-13.1.1801 [Accessed: 26th January 2024].

Bocken, N., Short, S., Rana, S. & Evans, S. (2013) A value mapping tool for sustainable business modelling, *Corporate Governance.* 13(5), 482 – 497.

Bocken, N., Short, S., Rana, P. & Evans, S. (2014) A literature and practice review to develop sustainable business model archetypes. *Journal of Cleaner Production*. 65, 42–56.

Bocken, N., Rana, P. & Short, S. (2015) Value Mapping for Sustainable Business Thinking. *Journal of Industrial and Production Engineerin*g. 32 (1), 67–81.

Bocken, N. (2021) Sustainable Business Models. In: Leal Filho, W., Azul, A. M., Brandli, L., Lange Salvia, A. & Wall, T. (eds.) *Decent Work and Economic Growth. Encyclopedia of the UN Sustainable Development Goals*. Cham, Springer, pp. 963–975.

Carmine, S. & De Marchi, V. (2022) Tensions and outcomes in corporate sustainbility: The moderating role of paradoxical frame. *Journal of Cleaner Production*, 380, 134952.

Carmine, S. & De Marchi, V. (2023) Reviewing Paradox Theory in Corporate Sustainability Toward a Systems Perspective. *Journal of Business Ethics.* 184, 139–158.

CCharmaz, K. (2014) *Constructing grounded theory*. Los Angeles, London, New Delhi, Singapore, Washington D.C., SAGE Publications.

Circular Valley (n.d.) https://circular-valley.org/cv_accelerator [Accessed 26th January 2024]

Daddi, T., Ceglia, D., Bianchi, G. & de Barcellos, M. D. (2019) Paradoxical tensions and corporate sustainability: A focus on circular economy business cases. Corporate Social Responsibility Environmental Management, 26, 770–780.

Dagilienė, L. & Varaniūtė, V. (2023) Transitioning to a Circular Economy: Paradoxical Tensions of the Circular Business Model. *Organization & Environment*, 36(4), 559-589.

Dembek, K., Lüdeke-Freund, F., Rosati, F. & Froese, T. (2022) Untangling business model outcomes, impacts and value. *Business Strategy and the Environment*, 32(4), 2296–2311.

De Angelis, R. (2021) Circular economy and paradox theory: a business model perspective. *Journal of Cleaner Production*. 285 (3), 124823

Fazey, I. et al. (2018) Ten essentials for action-oriented and second order energy transitions, transformations and climate change research. *Energy Research and Social Science.* Bd. 40, 54-70.

Gaim, M. & Wåhlin, N. (2016) In search of a creative space: A conceptual framework of synthesizing paradoxical tensions. *Scandinavian Journal of Management, Elsevier*. 32(1), 33–44.

Gioia, D., Corley K., Hamilton A., (2012) Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology. *Organizational Research Methods*. 16(1), 15-31.

Greco, A., Long, T., De Jong, G. (2019) The Freezing Effect of Sustainability Paradoxes and Conflicting Identities in Hybrid Organisations. *Academy of Management Proceedings*. (1), 14881.

Greco, A. & Berti, M. (2023) On opening Pandora's boxes: The role of action research in revealing paradox. In: E*uropean Group of Organizational Studies. 39th EGOS Colloquium*. Cagliari, Italy, 4/07/23.

Hahn, T., Pinkse, J., Preuss, L., & Figge, F. (2015) Tensions in corporate sustainability: Towards an integrative framework. *Journal of Business Ethics*. 127(2), 297–316.

Hahn, T., Figge, F., & Pinkse, J. (2018) A Paradox Perspective on Corporate Sustainability: Descriptive, Instrumental, and Normative Aspects. *Journal of Business Ethics*. 148, 235–248.

Hahn, T. & Knight, E. (2021) The Ontology of organizational paradox: A quantum approach. *Academy of Management Review*. 46 (2), pp. 362–384.

Hahn, T., & Pinkse, J. (2022) A paradox approach to sustainable product-service systems. *Industrial Marketing Management*, *105*, 182-189.

Herlyn, E. (2020) Die Agenda 2030 als systemische Herausforderung – Zielkonflikte und weitere Umsetzungsherausforderungen. In: Herlyn, E. & Lévy-Tödter, M. (eds.) *Die Agenda 2030 als Magisches Vieleck der Nachhaltigkeit – Systemische Perspektiven.* Wiesbaden, Springer Gabler, pp. 43-58.

Jarzabkowski, P., Bednarek, R., Chalkias, K., Cacciatori, E. (2021) Enabling Rapid Financial Response to Disasters: Knotting and Reknotting Multiple Paradoxes in Interorganizational Systems. *Academy of Management Journal*, 65(5), pp. 1477-1506.

Johnson, B. (2011) *Polarity Management: Identifying and Managing Unsolvable Problems*. Amherst, M.A., HRD Press.

Johnson, B. (2020) A*nd: Making a Difference by Leveraging Polarity, Paradox or Dilemma. Foundations*. Volume One. Amherst, M.A., HRD Press.

Johnson, B. (2021) *And: Making a Difference by Leveraging Polarity, Paradox or Dilemma. Applications*. Volume Two. Amherst, M.A., HRD Press.

Knudson, H. (2023) Business Models for Sustainability. In: Fet, A. M. (eds.) *Business Transitions: A Path to Sustainability*. Cham, Springer, pp. 101 – 112.

Krueger, R. A., Morgan, D. L., & King, J. A. (1998) *Focus group kit*. London, SAGE Publications.

Kühn, T. & Koschel, K. V. (2011) *Gruppendiskussionen*. Wiesbaden, VS Verlag für Sozialwissenschaften.

Lamnek, S. (2005) *Gruppendiskussion*. *Theorie und Praxis.* 2. überarbeitete Auflage. Weinheim & Basel, Beltz.

Lewin, K. (1946) Action research and minority problems. *Journal of social issues*, 2(4), 34–46.

Lewis, M. W. & Smith, W. K. (2022) Reflections on the 2021 AMR Decade Award: Navigating Paradox Is Paradoxical. *Academy of Management Review*, 47(4), 528–548.

Lüdeke-Freund, F., Carroux, S., Joyce, A., Massa, L. & Breuer, H. (2018) The Sustainable Business Model Pattern Taxonomy – 45 Patterns to Support Sustainability-Oriented Business Model Innovation. *Sustainable Production and Consumption*. (15), 145-162.

Lüdeke-Freund, F., Bohnsack, R., Breuer, H. & Massa, L. (2019a) Research on Sustainable Business Model Patterns – Status quo, Methodological Issues, and a Research Agenda. In: Aagaard, A. (ed.) Sustainable *Business Models*. Houndmills, Palgrave, pp. 25–60.

Lüdeke-Freund, F., Gold, S. & Bocken, N. (2019b) A review and typology of circular economy business model patterns. *Journal of Industrial Ecology*. (23) 1, 36–61.

Lüdeke-Freund, F., Breuer, H. & Massa, L. (2022) *Sustainable Business Model Design - 45 Patterns*. Frankfurt a. M., Druck- und Verlagshaus Zarbock.

Luoma P., Penttinen E., Tapio P.& Toppinen A. (2023) Paradoxical tensions in exploiting data to implement circular economy in the textile industry. *Ambio*. *52*(8), 1400-1413.

Manzhynski, S. & Galina Biedenbach, G. (2023) The knotted paradox of coopetition for sustainability: Investigating the interplay between core paradox properties. *Industrial Marketing Management*. (110), 31-45.

Miron-Spektor, E., Ingram, A.., Keller, J., Smith W. K. & Lewis, M. W. (2018) Microfoundations of organizational paradox: The problem is how we think about the problem. *Academy of Management Journal.* 61 (1), 26–45.

Misoch, S. (2019) *Qualitative interviews*. Berlin, Boston, Walter de Gruyter GmbH & Co KG.

Morales, A. H. (2020) Exploring Paradoxical Tensions in Circular Business Models – Cases from North Europe. *Sustainability*. 12 (18), 7577.

Morris, A. (2015) *A Practical Introduction to in-Depth Interviewing*. London, SAGE Publications.Pratt, N., Suntrup-Andresen, E. & Klingenberg, B. (accepted; forthcoming 2024) Paradox-Skills: Umgang mit Zielkonflikten einer nachhaltigen Transformation. In: Fichtner-Rosada, S., Heupel, T., Hohoff, C., Heuwing-Eckerland, J. (eds.) *European Year of Skills 2023 – Kompetenzen für die Zukunft*. Wiesbaden, Springer Gabler.

Remane, G., Hanelt, A., Tesch, J. & Kolbe, L. M. (2017) The Business Model Pattern Database – A Tool for Systematic Business Model Innovation. *International Journal of Innovation Management* 21 (1), art. 1750004.

Reuter, E. & Krauspe, T. (2023) Business models for sustainable technology: Strategic re-framing and business model schema change in internal corporate venturing. *Organization & Environment*. 36 (2), 282–314.

Rimanoczy, I. (2020). The Sustainability Mindset Principles: a guide to developing a mindset for a better world. Routledge.

Rimanoczy, I., & Klingenberg, B. (2021). The Sustainability Mindset Indicator: a personal development tool. Journal of Management for Global Sustainability, 9(1), 43-79

Schaltegger, S., Hansen, E. G. & Lüdeke-Freund, F. (2016) Business models for sustainability: Origins, present research and future avenues. *Organization & Environment.* 29(1), 3–10.

Schultz, F. C. (2022) Approaching Tensions in Business Model Innovation for Sustainability: An Ordonomic Meta-Framework on Tensions. *European Journal of Sustainable Development*. 11 (4), 47–60.

Sharma, G., Greco, A., Grewatsch, S. & Bansal, P. (2022) Cocreating forward: How researchers and managers can address problems together. *Academy of Management Learning & Education.* (21)3, 350–368.

Smith, W.K., & Lewis, M.W. (2011) Toward a theory of paradox: a dynamic equilibrium model of organizing. *Academy of Management Review. 36*(2), 381– 403.

Smith, W. & Lewis, M. (2022) B*oth/and Thinking: Embracing Creative Tensions to Solve Your Toughest Problems*. Boston, MA, Harvard Business Review Press.

Unger, H. (2014) *Partizipative Forschung. Einführung in die Forschungspraxis.* Wiesbaden, Springer.

van Bommel, K. (2018) Managing tensions in sustainable business models: Exploring instrumental and integrative strategies. *Journal of Cleaner Production*. 196, 829–841.

Van der Byl, C. A. & Slawinski, N. (2015) Embracing Tensions in Corporate Sustainability: A Review of Research from Win-Wins and Trade-Offs to Paradoxes and Beyond. *Organization & Environment*. 28(1), 54–79.

Wei, R., Geiger, S., & Vize, R. (2022) Managing paradoxical tensions in platform-based modular solution networks. *Industrial Marketing Management*. 100, p. 96-111.