Research paper
6th PLATE 2025 Conference
Aalborg, Denmark, 2-4 July 2025

Transformative and community-based participation in collaborative business model experimentation for urban upcycling

Marco van Hees[a,b], Inge Oskam [a], Nancy Bocken [b,c]
a) Centre of Expertise City Net Zero, Amsterdam University of Applied Sciences, Amsterdam, The Netherlands
b) Maastricht Sustainability Institute, Maastricht University, Maastricht, The Netherlands
c) The International Institute for Industrial Environmental Economics (IIIEE), Lund University, Lund, Sweden.

Keywords: experimental collaboration; participatory business model innovation; community-based urban upcycling; product and resource longevity.

Abstract:

Across cities and urban regions in The Netherlands unusual collaborations emerge which aim to develop new circular business models that facilitate product and resource longevity through various upcycling strategies, such as reuse, repair, refurbish, repurpose and/or remanufacture. Municipalities, social entrepreneurs as well as multinational enterprises use various experimentation methods to initiate, test or improve new collaborations in urban upcycling. However, little is known about the role of transformative stakeholder participation in these experiments and how they affect business models for upcycling. Therefore, this study investigates how initiators in urban upcycling use transformative and community-based participatory experimentation to develop collaborative circular business models that facilitate upcycling in a city context. Through a multiple case study approach, this research contributes to literature on circular business model innovation by investigating how practitioners in urban upcycling collaboratively develop, test, implement and scale business models for product and resource longevity in a city context.

Introduction

Collaborative urban innovations in upcycling either emerge bottom-up, as social initiatives or top-down, driven by institutions (Prendeville et al., 2017). Innovations are scaled and accelerated through collaborative (open) or internally focused (closed) innovation approaches and resource strategies may be aimed at efficiency optimization (narrowing), product lifetime extension (slowing) or reprocess discarded products to resources (closing) (Bocken & Ritala, 2022). Business model experimentation occurs differently in various collaborative contexts (Brown et al., 2021) and, depending on the type of initiating focal actors involved, collaborative business models develop along different pathways (Oskam et al., 2021).

Unusual collaborative initiatives emerge across Dutch municipalities which aim to reduce waste and stimulate the creation of new value from discarded municipal bulky resources (Faun & Maas, 2019; Faun et al., 2021; MIW, 2023). For example, an increasing number of Dutch municipal so-called 'circular crafts centres' (CCC) aim to facilitate regional entrepreneurial upcycling collaborations (Werner et al., 2020) and promote product longevity by specifically including the educational and social domain to stimulate reuse, refurbishment, repair of products and the exchange and spreading of practical repair knowledge and skills (Ministerie van Infrastructuur en Waterstaat, 2023). Other recent urban business model initiatives include so-called urban maker spaces, used-product exchange platforms, upcycling product-pools and upcycling centres or circular hubs with sorting and disassembly services. These initiatives also facilitate and/or promote multiple strategies for resource longevity, including repurposing discarded products and their materials in new applications.

Research shows that experimentation competences are important for developing initiatives towards circular business models (Bocken et al., 2018; Bocken & Coffay, 2022; Bocken & Konietzko, 2023) and a wide range of tools and approaches have been developed to support the development of circular business models based on experimentation (Bocken et al., 2021). In practice, multinational enterprises (MNE) use experimentation to innovate their business models (Bocken & Konietzko, 2023) and urban local governmental bodies (LGB) use urban experiments to initiate, test and

improve social entrepreneurial initiatives (Scholl & De Kraker, 2021). However, more insight is needed to understand how experiments in urban upcycling, particularly those where collaborative business models are created to reduce waste and enhance product and resource longevity, involve urban communities and how these collaborations aim for transformative participation of internal and external stakeholders. Therefore, this study aims to understand how experimentation occurs in urban upcycling initiatives and investigates the following research question: How do initiators of urban upcycling business model experiments apply community-based transformative participation to reduce waste and extend product longevity in a city context?

Methods

Based on a purposive sample (Bryman et al., 2011) of six organizations that initiated multiple collaborative business model experiments in urban upcycling, this study explores which types of collaborative experimentation approaches are used.

The study used a multiple case-study approach (Yin, 2009) to identify, describe and analyse critical turning points (Pel et al., 2017), types of stakeholder collaboration (Bocken & Ritala, 2022) and community-based transformative participation (Leavy, 2017; Sprague et al., 2019) across the three main stages of the circular business model innovation process (Bocken et al., 2018) .

Two LGB, two MNE and two social small to medium-sized enterprises (SSME), each independently engaged in multiple upcycling projects, were selected to ensure organizational engagement in upcycling and availability of relevant data from the various stages in the business model innovation process. Adapted from literature on business model innovation (Geissdoerfer et al., 2022) and circular business model experimentation (Antikainen et al., 2018), particularly for MNE (Bocken et al., 2017) and SSME (Seelos & Mair, 2017), this study distinguishes three stages to enable cross-case comparison, (1) collaborative prototyping through small-scale experimentation, (2) pilot testing, which entails initial market launch of the collaboration and/or testing the collaboration for future scaling and (3) rolling-out at scale by engaging in additional collaborations (Table 1).

Case	Experiments / Pilots	Interviewees
LGB 1	Urban reuse centre Circular crafts centre	Project manager1
LGB 2	Urban upcycling centre Circular crafts centre	Project manager1 Project manager2
MNE 1	B2C reuse delivery service C2B refurbishment service	Product manager 1 Product manager 2 Sustainability director
MNE 2	Waste donation Circular crafts centre	Product Quality & Safety Specialist Sustainability business partner External project manager
SSME 1	Urban bulky waste collection service Circular crafts centre	Owner
SSME 2	Circular crafts centre initiative B2B wood remanufacture	Owner Project manager

Table 1. Urban upcycling innovation initiatives analysed in this study.

The data collected consists of primary data from semi-structured interviews and secondary data, such as internal archives (e.g. meeting notes and workshop outcomes), and public articles.

Semi-structured interviews were conducted with managers and business owners, engaged in multiple collaborative urban upcycling business model experiments. The main topics of the interview protocol included the role and activities of the organisation, followed by critical incidents that either triggered or guided the initiative (Pel et al., 2017) and identification of collaborative aspects and transformative learning focus in the three phases of business model prototyping (1), piloting (2) and rolling-out (3).

Within-case analysis started with coding primary interview data and secondary data based on participatory and transformative aspects, adapted from literature on community-

based research and business model innovation such as transparency of the innovation process and collaboration with the community, diversity competence development and contribution to community needs and/or social justice. A timeline analysis was used to identify and map most critical incidents (Pel et al., 2017), the collaborative innovation strategy applied (Bocken & Ritala, 2022) and community-based participation (Leavy, 2017) across consecutive experimentation phases of each case.

A cross-case analysis was used to identify which differences and similarities occur between the six cases in relation to the business model experimentation process.

Results

This section first presents a within case analysis with a brief description and a summary in coloured tables with five icons, as explained in Table 2. Next, a cross case analysis presents similarities and differences between the cases.

Phase	1: Collaborative prototyping 2: Pilot testing collaboration 3: Rolling-out with multiple collaborations	
	Time period	Number of years
	Critical incidents	Transformative events or developments (Pel et al., 2017)
	Stakeholder collaboration	ON = Open Narrowing OS = Open Slowing OC = Open Closing CN = Closed Narrowing CS = Closed Slowing CC = Closed Closing (Bocken & Ritala, 2022)
	Level of community involvement	1 = Outreach 2 = Consult 3 = Involve 4 = Collaborate 5 = Shared leadership (Sprague et al., 2019)
	Transformative learning focus (Leavy, 2017; Mezirow, 2009)	I = Internal business model E= External business model (e.g. partners, customers) C = Urban community

Table 2. Explanation of icons used

LGB 1

Following a municipal coalition agreement entailing a circular vision with high ambitions, a physical reuse centre was launched. The project initially survived strong challenges related to COVID by aiming for long-term financial feasibility. The innovation process intended to be open, involving multiple and diverse upcycling entrepreneurs and the local community. A foundation of external management 'pioneers' ("kwartiermakers" in Dutch) was assigned to business development, and in practice, collaborative development focused on practical daily issues. Stakeholders did not appear committed or empowered to take ownership, either taking on a transactional approach or leaving the initiative to continue activities elsewhere. Two years after its ambitious launch, the project was stopped and received nation-wide coverage in the media, which presented the project as a financial and political failure. Based on learnings taken from an official evaluation, the LGB is preparing new plans for a circular crafts centre by empowering existing and stimulating new local upcycling experiments, monitoring national and regional pilots and investigating and testing the municipal and regional infrastructural and collaborative requirements for urban upcycling. Table 3 summarizes the above and illustrates that open and community-based innovation is limited to the roll-out phase and focused on the startup community, while transformative learning is primarily externally focused and aims to include the urban community through education and startup incubation.

Phase	1	2	3
	0	0	2
			1.Coalition agreement 2.Launch of reuse center 3.COVID
			OS, OC
			1
			E, C

Table 3. Collaborative experimentation LGB1

LGB 2

Following the nomination for the organization of an international exhibition, LGB 2 created a plan aiming to showcase existing local upcycling initiatives and a prestigious recycling station with an educational centre and incubating facilities for circular startups. The

collaborative agreement with entrepreneurs entailed a two- year contract of free working space for upcycling business experimentation, and the obligation to engage in educational activities aimed at inspiring local communities and citizens to raise public awareness for waste reduction and engagement for the circular economy. Performance measurement of startups is conducted on a relatively informal and ad hoc basis and exact intended radical difference with a traditional recycling station remain obscure. More recently, LGB 2 has initiated collaborative pilots to test feasibility, viability and desirability of a scaled circular crafts centre infrastructure which integrates a municipal waste station with pro-active resource orchestration and collaborative business model co-creation within a broader community of SSME and services in the social dimension that facilitate upcycling, such as sorting, dismantling, warehousing and selling through local thrift shops. The pilot aims to develop and test more radical business model collaborations and co-creation of new facilities, roles and residual mono streams for upcycling which, when proven effective, will be rolled-out over other locations after a period of five months. Table 4 shows that open and community-based innovation is limited to the pilot phase and targeted at the startup community, while transformative learning is primarily aimed at local consumers.

Phase	1	2	3
	7	5	0
	1.Identify initiatives 2.Nomination WE 2.Plan new recycling station	1.Launch recycling center 2.Study educational options 3.Launch education center 4.Follow-up Circular Crafts Center pilot (other location)	1.Coalition agreement 2.Launch of reuse center 3.COVID
	Local initiatives	**OC, OS**	
	1	3	
		C	

Table 4. Collaborative experimentation LGB2

MNE 1

This digital market place for used products initiated three experiments aimed at (1) a shipment service for bulky items, such as furniture, (2) a refurbishment service and (3) a public-private collaboration with LGBs. Continuous user data analysis triggers new ideas for experiments and pilots. For example, as for upcycling business model experiment (1), data showed that 17 million bulky items were traded without organizational support, while similar collaborative shipping services already existed for smaller items. This insight triggered an experiment to measure 'appetite' for a specialized shipping service for bulky items. In parallel to online experiments, two potential partners were identified, leading to a strategic pilot. Business model experiment (2), refurbishment service, entailed a more radical change to the existing business model. A strategic task force was assigned to explore activities and strategic fit of potential partners which actively trade on the platform. A three month period of user data analysis, business modelling, opportunity assessment and forecasting was followed by five months of pilot testing and roll-out. The pilot collaboration with two potential partners consisted of small steps to monitor effectiveness and to gradually grow allocation of resources. Further IT-integration starts after the collaboration has proven to be successful and aligned to the company strategy. As for upcycling project (3), the company engages in various knowledge exchange platforms, educational collaborations and social media campaigns aimed at professionals in the public sector to explore strategic collaborations with LGB. At the time of this study, the project was still in an early stage, calling for increased public-private collaborations between the MNE and multiple LGB aimed at reducing the destruction of potentially valuable material in municipal waste management. Table 5 indicates that open innovation with potential partners and transformative participation of the community is focused on piloting and roll-out. Online community participation is limited to consent for use of personal data, while the company is actively seeking collaboration with LGB and promoting its services to the public through a narrative that strongly appeals for transformative buying behaviour based on creative and emotional experiences.

Phase	1	2	3
	0,1-0,2	0,5	0
	1.Customer data 2.Analysis business idea 3.Appetite identified 4.Potential partners	1.Strategic Task Force 2.Launch business test	1.Launch service 2.Integrate IT
	CS	OS	
	1	1	1
	I	I	E, C

Table 5. Collaborative experimentation MNE1

MNE 2

An international retail store in furniture and interior products initiated three local experimental upcycling projects. Donation projects entail casual unwritten agreements about direct donations of waste material, mostly solid wood, to be used as resources for organizations in the social domain. The company is not involved in the follow-up upcycling processes and refers to environmental and financial benefits related to avoiding the waste management process of mixed materials. The pilots aim to gain better insight in actual waste streams, to support the green reputation of the company, to develop longer term donation services and create internal legitimacy among local employees for its circular ambitions.

The coordination of an unusual collaborative experimentation project is outsourced to an external mission-driven design consultancy. The project aims to co-create three products from waste. The nine months experimentation phase kickstarted with an internal company "waste safari" to discover availability and workability of waste resources, followed by a brainstorming session to explore options for creating value and a collaborative prototyping workshop. Table 6 provides an overview and shows that the company is selectively exploring open community-based experimentation aimed at internal transformation, Internal compliance and safety regulations limit options for instore roll-out of upcycled product prototypes.

Phase	1	2	3
	0,5-0,6	Recent start	0
	1.Circular strategy 2. "Waste safari" 3.Brainstorm 4.Prototyping 5. Project evaluation	1. Facing limited storage capacity	1. Facing internal constraints
	OC	OC	
	2	2	
	I		

Table 6. Collaborative experimentation MNE2

SSME 1

After many years of informal agreements and experimentation in urban bulky waste collection, a Dutch hybrid organization of urban non-profit WISE and three urban used product stores, received permission from LGB to start a business pilot for an urban bulky waste collection service. Eight years later the collaboration was formalized and rolled-out in an official agreement, allowing the organization to proceed activities, and charge the LGB based on kilograms of municipal bulky 'waste' collected. The agreement entails the obligation to collect, monitor and register bulky waste from citizens, and to upcycle potentially valuable products through used product stores. The SSME functions as an extended service to the municipal recycling station, integrates the social domain and collaborates with educational institutions. Therefore, the company applied for a circular crafts centre (CCC) initiative and calls LGB for local community-based bulky waste collection points. Table 7 illustrates that the company is deeply engaged in open and transformative collaboration with the local community across all experimentation phases, but struggles to reach scale, largely due to legislative and contractual dependencies with LGB.

Phase	1	2	3
	10+	8	Recently launched
	1.informal urban bulky waste collection	1.formal permission 2.tender	1.official agreement
	OC, OS	OC, OS	OC, OS
	4	4	4
	C	C	C

Table 7. collaborative experimentation SSME1

SSME 2

A medium-sized work integration social enterprise (WISE) initiative (100 employees), which started as a non-profit bicycle repair shop, built its business model on continuous collaborative upcycling experiments with medium-sized and large enterprises as launching customers. Illustrative examples include collaborations with Dutch building contractors for the collection, sorting, and remanufacturing of hardwood doors, which are resold to the same company as semi-finished upcycled hardwood panels and partly sold as regenerative products, such as bird houses and insect hotels. The SSME recently started an unusual collaborative pilot with the LGB to test a circular crafts centre concept in which the company serves as a sorting gateway to the local recycling stations to rescue valuable material from incineration and raising sustainability awareness among visitors and developing new collaborations with educational institutions. Table 8 illustrates that the company collaborates with LGB, MNE and local SME using the complete spectrum of open circular innovation strategies, but struggles to reach scale, largely due to limited availability of financial resources.

Phase	1	2	3
	0,5-1	5	0
	1.Launching contractor 2.Working protocol 3.Move to other location	1. Launching customer for biodiversity product range	1. Obtain external financial resources for scale up
	OC, OS, ON	OC, OS, ON	
	1, 4	1, 4	
	C	C	

Table 8. Collaborative experimentation SSME2

Cross-case analysis

From a comparison of the findings, the data show that all six urban upcycling initiatives use experimentation as an important means for collaborative business model development. However, actors take surprisingly different routes depending on the type of initiator involved. The data revealed the following differences and some similarities across the cases.

First, initiating actors refer to different events that triggered their engagement in urban upcycling experiments. Whereas LGBs mention opportunities arising from shifts in the political landscape or available subsidies, and MNEs refer to internal strategy and budgeting decisions, SSMEs allude to more transactional incidents, such as a new agreement with a launching customer or an actionable legislative condition.

Second, as for timeline phasing, collaborative urban upcycling experiments initiated by LGBs seem to struggle with a structured step-by-step experimentation process, causing unreliable processes and unpredictable policy, ranging from endless piloting to skipping fundamental experimentation phases. For example, the principal interviewee in LGB 2 suggests that the ambitious municipal urban upcycling project moved straight to a scaling phase without first piloting the concept based on the premise ‘if we do it, we do it right’. Also illustrative, in case LGB 1 and SSME 1, interviewees refer to incidents of delayed decision-making and political hesitation, causing stakeholder disengagement, doubt feelings and risk-averse behaviour among partnering SME upcycling entrepreneurs. In contrast, experimentation phases of MNE 1 and MNE 2 are relatively short, and align with SSME 2, who collaborates with large private companies but faces

difficulties moving from pilot to roll-out, primarily due to a lack of available resources.

Third, all cases embrace selective open innovation strategies, aiming at reaching higher product and resource longevity and/or higher recycling rates. However, while LGBs experiment with a wide range of small and new upcycling ventures in the context of prestigious and ambitious projects, other actors almost do the opposite. MNEs and SSMEs seek and/or test collaborations with proven ventures, established businesses and/or public institutions from their existing network based on relatively modest ambitions. Interestingly, SSMEs primarily refer to external dependency restrictions for roll-out, such as legislation, contractual agreements and access to financial resources, while MNEs particularly refer to internal compliance and strategy.

Fourth, the data reveal that all initiating actors either explore or engage in community-based transformative innovation, but find different ways and have other reasons. For example, [MNE 1] is actively exploring ways to collaborate with LGBs and educational institutions to stimulate local communities towards more circular behaviour and use their platform, while LGBs aim to create circular awareness among their residents through local circular startups and education facilities in circular crafts centres. [MNE 2] directly engages its employees in multiple waste-as-a-resource local charity projects and in a circular design experiment with a WISE to create internal legitimacy for their internal circularity ambitions. And finally, SSMEs integrate continuous experimentation in their day-to-day operations and interactions with individual customers in local communities, thereby implicitly promoting circular practices to local communities.

Discussion and conclusions

This study investigated how initiators in urban upcycling use transformative participatory experimentation to develop collaborative circular business models and infrastructures that facilitate upcycling in a city context.

The cross-case analysis reveals that substantial similarities occur between cases with similar actors, which resonates with state-of-the-art literature on experimentation practices of MNEs (Bocken et al., 2017), SSMEs (Seelos & Mair, 2017) and Dutch LGB city labs (Scholl & De Kraker, 2021). The study also shows that collaborative urban innovations in upcycling emerge bottom-up, from SSMEs, and top-down, driven by LGBs and/or MNEs (Prendeville et al., 2017). However, in line with Oskam et al. (2021), collaborative business model experiments proceed differently depending on the type of initiating actors involved. Where these different approaches of LGBs, MNEs and SSMEs are complementary, they provides opportunities for cross-disciplinary collaboration. For example, collaborative experiments in MNEs are more data-driven and structured, which provides important learnings to LGBs and SSMEs. Similarly, SSMEs already deeply engage in upcycling practices with local urban communities on a personal and transformative level, providing opportunities to MNEs and LGBs for exploring opportunities aimed at transitional innovation (Andriopoulos et al., 2009) based on co-creation. Additionally, while LGBs and MNEs are still exploring and prototyping with new startups based on a top-down approach, they rather may empower and accelerate bottom-up SSME initiatives (Prendeville et al., 2017) by providing required resources and network access to promising existing local SSME upcycling initiatives.

Hence, these findings suggest that differences between experimentation approaches of MNEs, LGBs and SSMEs offer opportunities and space for transformative participatory business model experimentation between these actors. We therefore propose that follow-up research investigates which community-based participatory experimentation approaches would be feasible and desirable to scale and accelerate promising urban upcycling initiatives through cross-disciplinary co-creation between MNEs, LGBs and SSMEs.

The study contributes to research on circular business model experimentation by improving the understanding of the roles that different types of actors play in the context of collaborative experimentation in urban upcycling. The results highlight opportunities for researchers and practitioners to further explore how cross-disciplinary collaborative business model experimentation can accelerate and scale promising urban upcycling initiatives more effectively by integrating complementary

participatory innovation strategies and community-based transformative practices in LGBs, MNEs and SSMEs.

Acknowledgments

This research is co-funded by Regieorgaan SIA (RAAK-PRO), part of Dutch research council (NWO), project Urban Upcycling (RAAK.PRO04.029). Nancy Bocken was funded by European Union's Horizon 2020's European research Council (ERC) funding scheme under grant agreement No 850159, project Circular X.

References

Andriopoulos, C., & Lewis, M. W. (2009). Exploitation-exploration tensions and organizational ambidexterity: Managing paradoxes of innovation. Organization science, 20(4), 696-717. DOI: 10.1287/orsc.1080.0406

Bocken, N. M., Schuit, C. S., & Kraaijenhagen, C. (2018). Experimenting with a circular business model: Lessons from eight cases. Environmental innovation and societal transitions, 28, 79-95. https://doi.org/10.1016/j.eist.2018.02.001

Bocken, N., & Coffay, M. (2022). The circular experimentation Workbench–a lean and effectual process. Circular Economy and Sustainability, 3(3), 1361-1383. DOI: 10.1007/s43615-022-00239-w

Bocken, N., & Konietzko, J. (2023). Experimentation capability for a circular economy: a practical guide. Journal of Business Strategy, 44(6), 406-414.

Bocken, N., Strupeit, L., Whalen, K., & Nußholz, J. (2019). A review and evaluation of circular business model innovation tools. Sustainability, 11(8), 2210. DOI: 10.3390/su11082210

Bocken, N. M., Weissbrod, I., & Antikainen, M. (2021). Business model experimentation for the circular economy: definition and approaches. Circular Economy and Sustainability, 1(1), 49-81 DOI: 10.1007/s43615-021-00026-z

Bocken, N., Miller, K., Weissbrod, I., Holgado, M., & Evans, S. (2017). Business Model Experimentation for Circularity: Driving sustainability in a large international clothing retailer. Economics and Policy of Energy and the Environment (EPEE), 2017(1), 85-122. DOI: 10.3280/EFE2017-001006

Bocken, N., & Ritala, P. (2022). Six ways to build circular business models. Journal of Business Strategy. DOI: 10.1108/JBS-11-2020-0258

Brown, P., Baldassarre, B., Konietzko, J., Bocken, N., & Balkenende, R. (2021). A tool for collaborative circular proposition design. Journal of Cleaner Production, 297, 126354. https://doi.org/10.1016/j.jclepro.2021.126354

Bryman, A., & Bell, E. (2011). Business research methods. 3rd ed. Cambridge ; New York, NY, Oxford University Press. https://doi.org/10.20935/AcadBiol7688

Faun, H., & Maas, K., (2021) Handelingsperspectief sociaal domein circulaire ambachtscentra, Rijkswaterstaat / Panteia Zoetermeer https://vang-hha.nl/kennisbibliotheek/handelingsperspectief-sociaal-domein-circulaire/

Faun, H., Goes, M., Maas, K., Steenland, R. (2019) sociale activatie op Circulaire Ambachtscentra, Rijkswaterstaat / Panteia Zoetermeer

Geissdoerfer, M., Savaget, P., Bocken, N., & Hultink, E. J. (2022). Prototyping, experimentation, and piloting in the business model context. *Industrial Marketing Management*, *102*, 564-575.

Leavy, P. (2017). Research design. New York, The Guilford.

Mezirow, J. (2009) An overview of transformative learning. In Illeris, K. (ed) Contemporary Theories of Learning, London: Routledge, pp. 90-105.

Ministerie van Infrastructuur en Waterstaat (2023), Startersgids circulair ambachtscentrum, ism VNG, NVRD, repaircafé, branchevereniging kringloopbedrijven https://circulairambachtscentrum.nl/slag/starten-circulair-ambachtscentrum/

Oskam, I., Bossink, B., & de Man, A. P. (2021). Valuing value in innovation ecosystems: How cross-sector actors overcome tensions in collaborative sustainable business model development. Business & society, 60(5), 1059-1091. https://doi.org/10.1177/0007650320907

Pel, B., Dumitru, A., Kemp, R., Haxeltine, A., Jorgensen, M. S., Avelino, F., ... & Bauler, T. (2017). Synthesis report: meta-analysis of Critical Turning Points in TSI: Deliverable D5. 4. TRANSIT - Transformative Social Innovation Theory project

Prendeville, S., Cherim, E., & Bocken, N. (2017). Circular cities: Mapping six cities in transition. Environmental innovation and societal transitions, 26, 171-194. https://doi.org/10.1016/j.eist.2017.03.002

Scholl, C., & de Kraker, J. (2021). The practice of urban experimentation in Dutch city labs. Urban Planning, 6(1), 161-170. DOI: 10.17645/up.v6i1.3626

Seelos, C., & Mair, J. (2017). Innovation and scaling for impact : how effective social enterprises do it (1st ed.). Stanford Business Books, an imprint of Stanford University Press. https://doi.org/10.1515/9781503600997

Sprague, L., Afifi, R., Ayala, G., & El-Nasoor, M. L. (2019). Participatory praxis as an imperative for health-related stigma research. BMC medicine, 17, 1-8. https://doi.org/10.1186/s12916-019-1263-3

Werner, A., Albers. J., Verschuren, H, Dierdorp, L. (2020) Onderzoek effecten circulaire ambachtscentra, ism Anteagroup, Rijkswaterstaat Utrecht https://vang-hha.nl/kennisbibliotheek/onderzoek-effecten-circulaire-ambachtscentra/

Yin, R. K. (2009). Case study research: Design and methods (Vol. 5). sage. DOI: https://doi.org/10.33524/cjar.v14i1.73