

How are Sustainable Business Models developed to support the implementation of Circular Economy in Cities? A qualitative research on built environment.

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EXTENDED ABSTRACT

The IPCC report (Intergovernmental Panel on Climate Change, 2018) is calling for minimizing the global warming to 1.5   C. Following the report publication, a special report addressed to urban policy maker has been published as '*climate science must be accessible to urban policymakers, because without them, there will be no limiting global warming to 1.5  C. In cities and urban areas, there are actions that policymakers—along with residents and stakeholders, such as civil society, the academic community, and those in business and finance—can take to help limit warming and adapt to the impacts of climate change. The effects of a city's actions are not limited to its own borders or region, and, likewise, lessons learned in some cities and urban areas can serve as inspiration and resources for solutions in other urban areas*' (Amir Bazaz, Paolo Bertoldi, Marcos Buckeridge, Anton Cartwright, Heleen de Coninck, Francois Engelbrecht, Daniela Jacob, Jean-Charles Hourcade, Ian Klaus, Kiane de Kleijne, Shauib Lwasa, Claire Markgraf, Peter Newman, Aromar Revi, Joeri Rogelj, Seth Schul, 2018, p.6).

According to the IPCC SR1.5 (Bazaz et al., 2018), there are plenty of possibilities within cities to sustain positive pathways to limit global warming. However, it will depend on how mitigation options will be designed and how stakeholders will cooperate. Focusing together on UN SDG's number 11 and 12 means tackling the issue of resources efficiency in cities. From this perspective, the concept of circular economy (CE) in cities has reached a momentum and is seen as one of the best possibilities by policymakers and the scientific community (among others: Marin and De Meulder, 2018; Petit-boix and Leipold, 2018; Prendeville, Cherim and Bocken, 2018b; Fratini, Georg and J  rgensen, 2019)

In this context, designing Sustainable Business Models for CE in cities might be one approach that will help reaching the goal. In this optic, research has shown that business models addressing sustainability issues usually have to involve more stakeholders than usual business models and demonstrate creative forms allowing new ways of acting together at urban level (Geissdoerfer et al., 2018). To develop this kind of business models in cities, different concepts have to be clarified, starting from CE itself, then CE in cities and finally Sustainable Business Models supporting CE within urban context. In addition, research should adapt to each sector/field that requires specific development tailored to their actors and respective specificities.

Considering the fact that the built environment is the second biggest polluters in cities (Intergovernmental Panel on Climate Change, 2018), this paper focus on business models specific to the built environment and housing, where different possibilities are being tested to close the loop at cities' level (Pomponi and Moncaster, 2017; Petit-boix and Leipold, 2018). Therefore, CE for the built environment will be the fourth concept studied in this paper, always within the urban context.

Looking at the concept of CE in cities, academic scholars have conducted different kind of research so far. Prendeville et al.(2018) have established a framework to assess circular projects in cities (Prendeville, Cherim and Bocken, 2018a). Petit-Boix et al. (2018) have reviewed different initiatives from a quantitative point of view (Petit-boix and Leipold, 2018). More recently, Fratini et

al. (2019) have reflected on 'how theorizations and the application of circular economy could be advanced in support of urban sustainability transitions' (Fratini, Georg and Jørgensen, 2019, p.1).

Literature related to business models is also well developed in term of sustainable or circular business models (Urbinati, Chiaroni and Chiesa, 2017; Geissdoerfer et al., 2018). Even if there is no consensus on the concept, we will follow Geissdoerfer (Geissdoerfer et al., 2018) approach where Circular Business Models are an improvement, a step forward, of Sustainable Business Models. To emphasize this aspect, the denomination used herein is 'Sustainable Business Models for Circular Economy'. For this paper, we also looked at a more architecture-specific literature, establishing archetypes of 'circular cities' (Marin and De Meulder, 2018) or developing a conceptual model for resources efficient built environment (Ness and Xing, 2017). Finally, CE and business models concepts have been used in the built sector as well especially at supply chain level (Leising, Quist and Bocken, 2018) or for the value creation part in SME's in the US (Únal et al., 2019).

Our ongoing research focus on how Sustainable Business Models are developed and how it can support the implementation of CE in cities. In order to take the most of it, the Grounded Theory Method (Glaser and Strauss, 1999) has been selected as 'it helps to frame exploratory research' (Witjes and Lozano, 2016, p.40) and has been used in research in the same field (Witjes and Lozano, 2016). After first field observations, interviews in a specific organization active in the built environment and research on similar organizations in Belgium, further research is planned in the same organization but also beyond to broaden exploration. Other interviews, field observations and literature research will be conducted in order to understand who are the important actors and their role in supporting (or not) the development of sustainable business models for CE on urban territories.

Early-stage results show that there is an emergence of organizations developing a Sustainable Business Model for CE which are cooperatives or have legal forms allowing for more interaction with the community and playing a role in raising awareness on their territory. Therefore the approaches of the cooperative model and social innovation (Defourny and Nyssens, 2017) will be studied as well in the second part of our research on the field and associated with our initial concept of Sustainable Business Models for CE in cities.

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