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Jo Pierson

Artur Serra

Anna Ståhlbröst

Leo Van Audenhove

Shenja van der Graaf

Chances and Challenges for Social Urban Living Labs in Urban Research

Yvonne Franz ^a

^a Institute for Urban and Regional Research
Austrian Academy of Sciences

Abstract

As current research programmes show, living lab approaches are a promising instrument in urban research. However, current living lab concepts are still based on technologically-centred and innovation-driven paradigms. A shift towards a more nuanced understanding of living labs that are all embedded in different frameworks is necessary to develop a basis for comparisons across disciplines and across living labs. This paper examines the possibilities and limitations of using living labs in urban research with a focus on social-spatial research questions. It identifies current approaches and gaps in living lab concepts and contributes to a more differentiated understanding of living lab design that fit socially-centred research better than previously concepts.

Keywords

living lab in urban research; paradigm shift; contextualized design; locally-based living methods;

1 Introduction: Why Living Labs?

Current European urban research agendas show a tendency towards innovation-driven approaches. They are embedded in a framework of the current knowledge-based society, motivated by rational and efficiency-driven perspectives in order to enhance potential innovation (Schumacher & Feurstein, nd.). After implementing the concepts of sustainable and smart cities over the last decade, evidence shows that European research strategies are more recently fostering the inclusion of new paths of “social innovation”⁵. This can be seen as an attempt to rescale future-oriented urban research away from technology and efficiency-centred approaches, and towards more social-centred ones. Therefore, the main aims can be found in civic involvement and co-creation and not only pure technological innovation. This correlates with recent tendencies towards participative societies, for instance in the Netherlands or the United Kingdom, that increasingly value citizen participation and resident-driven development (see e.g. Lokale Lente, 2014; Putters, 2013; UK Cabinet Office, 2010). In this context, living labs could be a promising instrument for the active inclusion of citizens in urban research projects investigating socio-spatial questions.

⁵ see Horizon 2020, Urbact, JPI Urban Europe

The living lab idea originally emerged through the process of testing new products in the early 2000s (Markopoulos & Rauterberg, 2000) and has continued to gain popularity since its launch by MIT in Boston who sought to create a technical research methodology for real life complexities (Schumacher & Feurstein, nd.). Ever since, living labs can be found more and more in product-based tech laboratories that create an artificial living environment to involve users as testers for new products and services. Living labs aim to involve citizens in innovation development as a new element of the decision-making process by connecting research with the actual living environment. The rare examples of living labs being used in urban research aim to translate research into real life needs through the inclusion of actors at various levels, representing not only citizens and researchers, but also stakeholders, municipalities and community actors. Recent examples have focused mainly on the implementation of smart technologies into urban citizens' living environments to create resource efficient and low-carbon cities for the future⁶. In this context, the governmental interests and stakeholder interests become obvious. On the one hand, future urban challenges should be met with adaptation strategies. On the other hand, new technologies should be implemented to foster innovation and new markets. As both interests carry the risk of implementation failures, living labs serve as a vehicle to test and improve new technologies, using potential future users to help create new products and services that are successful and competitive.

More recently, the living lab approach has been increasingly utilised in socially-oriented urban research agendas, as the Joint Programming Initiative "Urban Europe" shows. Living labs in a social environment are used to identify relevant topics of urban research and measure the relevance of specific research questions for the socio-spatial context. The implementation of context-based and socio-spatially appropriate methods aims to translate research for use in civic society and improve the collection of insightful data at the local level. However, the conceptual and methodological understanding of living labs remains focused on technology-based innovation processes rather than socio-spatial research questions.

This paper examines the possibilities and limitations of using living labs in urban research with a focus on social-spatial research questions. It identifies current approaches and gaps in living lab concepts and contributes to a more nuanced understanding of living lab design. As current research programmes show, there is a need for a conceptual design for social urban living labs moving beyond technological terms and norms. Empirical and theoretical evidence comes from an international, comparative research project in the field of urban studies that examines interethnic coexistence and neighbourhood embeddedness at the local level⁷.

2 Background: The Concept of Living Labs Up to Now

Literature on living labs refers largely to project publications or innovation-based technology research⁸. This demonstrates how the living lab debate has evolved from a technologically-centred approach focusing on innovation research. Within this framework, living labs serve as an integral instrument to transform a product-

⁶ see for instance SmartCity Living Lab at German Research Centre for Artificial Intelligence, ENoLL SmartCity Living Lab in the South of Paris, Aspern Smart City Research or The Transnational Nordic Smart City Living Lab Pilot

⁷ See Joint Programming Initiative Urban Europe <http://www.jpi-urbaneurope.eu/>

⁸ see ENoLL, Nordic Smart City Living Labs and others

based economy into an innovative service economy by the integration of users as co-creators in real-life environments (Mulder, 2012; SmartIES, nd.; Schumacher & Feurstein, nd.). In this context, innovation mainly refers to a necessity for European cities to remain successful in a global city competition (Noll, 2011) that might be created in product and service development processes. According to the European Network of Living Labs (ENoLL, 2014), “[...] [a] Living Lab is a real-life test and experimentation environment where users and producers co-create innovations”. The key components of living labs are co-creation, exploration, experimentation and evaluation that involve both producer and user in the process. However, it can be considered a user-centric research methodology as it includes user-centred living methodologies in a real-life environment (Mulder, 2012) and placing the user at the centre of the analysis. Included actors are – generally speaking – stakeholders interested in the production and implementation of innovation-based technologies. On the other hand, “users” can also include citizens as potential users and consumers. The new or adapted products or services resulting from the process aim to attract higher acceptance through an integrative process of co-creation between stakeholders and potential users.

Although living labs are considered to be a valuable instrument contributing to the concept of pioneer cities as centres of innovation and social participation (Noll, 2011), academic debate on living labs in urban studies remains underdeveloped. As Bergvall-Kåreborn and Ståhlbröst (2009) point out, theories and methodology, as well as analysis and reflection are limited. Both the theoretical framework and methodology require further elaboration. Even less literature can be found for “social” living labs. Few living labs have dealt with social topics. Amongst them, for instance, the Living Labbing in Rotterdam that aim particularly at “[...] living methodologies to address the social dynamics of everyday life” (Mulder, 2012). Living labs oriented towards social research questions evolved from the idea of co-developing cities and urban living environments (see Table 1). The general approach includes catchwords such as ‘empowerment’, ‘participation’ or ‘co-creation’ and provides an open, participatory and do-it-yourself environment that includes citizens (users) and local actors (producers) as agents in processes of co-creation and improved living spaces. However, project insights remain unclear with regard to distinct living lab conceptualisation that includes contextualised methods for place-based needs and questions of research.

In urban research especially, fields of analysis relate to the socio-spatial environment, living together and urban policies that affect those fields. The question therefore arises of how far living labs can be used as a supporting instrument in those processes to connect research with civic society and to involve residents in order to gain knowledge at the neighbourhood level? Recent living labs that have come closest to this question can be found in Rotterdam (Mulder, 2012) where emphasis was placed on co-creation by citizens. Here, visual ethnography, prototyping and the co-creation of public services were implemented as a set of living methodologies to “[...] extract richer insights about what drives people.” (Mulder, 2012: 40).

	TECHNICAL oriented living labs	SOCIAL oriented living labs
INITIAL SITUATION	Product and service development and evaluation	Co-development of city and living environment
AIMS	Higher acceptance of product or service through co-creation	Involvement of affected people to create higher acceptance of, e.g., policies and public services; Gaining richer insight information
APPROACH	User interface design – user acceptance – co-design – service & product creation	Empowerment – participation – co-creation
ACTORS	Stakeholders and users/consumer/citizens	Local actors, citizens
ENVIRONMENT	Collaborative, multi-contextual, multi-cultural real-world environments	Open, participatory, do-it-yourself
OUTCOME	New/adapted products or services	Co-created and improved living spaces

Table 1: Characteristics of Technical and Social Oriented Living Labs (own illustration based on current living lab projects)

The examples drawn from literature and recently implemented living labs refer mostly to living labs as a new methodology, including a set of methods and actors in order to create something - for instance a product, process or activity – commonly. However, the concept of living labs in urban studies needs further elaboration. Mulder (2012) demonstrates that the remaining potential has not been fully exploited both in technical living labs and social living labs. Mulder (ibid.: 42) identifies a need for living methodologies as a core element “[...] that makes a living lab an outstanding methodology for user-driven and co-creative innovation.” In addition, the key component of involvement requires further analysis as Bergvall-Kåreborn and Ståhlbröst (2012: 368) “[...] found [...] it [...] difficult to recruit user groups that reflect the variety of the society [...]”. As this quotation shows, further work is required with regard to the representativeness of living lab analysis. It further indicates that a paradigm shift from technological to social science guided terminology might be needed to shift the perception of future living lab participants to ‘citizens’ rather than ‘users’. This seems to be of particular importance should living labs gain importance as a methodological tool in social sciences.

3 Methodology: The ICEC Urban Living Lab

The use of living labs in urban research has special relevance in the new funding stream Joint Programming Initiative “Urban Europa” that supports interdisciplinary research for new approaches in future urban development and urban governance (Noll, 2011). JPI Urban Europe not only influences future urban research, but seeks to create real solutions developed in conjunction with, and tested by, relevant stakeholders and urban citizens (Noll, 2011: 87). In this context, solutions may also refer to adapted processes or policies as additional contributions to former product and service oriented aims.

ICEC⁹ is embedded in the JPI Urban Europe funding and will implement urban living labs in three ethnically diverse neighbourhoods in Amsterdam, Stockholm and Vienna. The project aims to provide a systematic comparison of the aims, structural features and outcomes of neighbourhood development programmes that target interethnic coexistence. The core of the research is framed by a policy analysis of selected local measures provided by the city government and municipalities (as producers) and whether or not the measures were noticed by local citizens (as users). For this research, policy analysis goes beyond established methods of evaluation by integrating citizens as locally affected people and a valuable source of insight and information. In combination with neighbourhood activities that already take place in the respective neighbourhoods, current and future fields of improvement of interethnic interaction and social cohesion may be identified and communicated as real-life recommendations to city government and intermediate actors.

3.1 The General Conception of the ICEC Urban Living Lab

The conceptual scales of the ICEC urban living labs are positioned at two levels. First, the theoretical level dealing with research questions, aims and envisaged outcomes with regard to an academic policy analysis and real-life feedback from citizens. Second, the implementation level that raises the question of how to gain

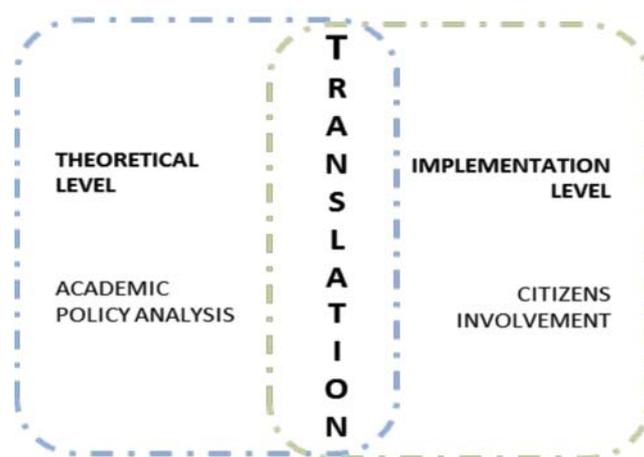


Fig. 1: Conceptual Levels in ICEC (own illustration)

access to citizens in the neighbourhoods under study without choosing a top-down and non-contextualised approach. At both levels, the translation of academic results into understandable real-life questions has to take place. In doing so, the ICEC urban living lab is clearly aiming at contributing to the development of social living lab approaches.

Traditional academic policy analysis may consider the field with regard to political environment and impact on affected target groups. However, the involvement of affected people is not yet integral to the policy analysis so far. Therefore, the ICEC urban living labs aim to leave the sphere of a traditional policy analysis and include residents' involvement in a real-life environment at the local neighbourhood level (see Figure 1).

As ICEC is a pioneer project that uses an urban living lab to communicate research results to citizens at the local level, no established conceptual research design can be referred to. As a result, ICEC chooses an approach that puts the needs of citizens in terms of interethnic coexistence at the centre of the analysis in the specific neighbourhood. Local stakeholders such as urban renewal offices or local community groups are involved as intermediate actors to gain authentic access to

⁹ "Interethnic Coexistence in European Cities (ICEC)". Funding period: September 2013 – August 2016. For more information see: www.icecproject.com

local residents and avoid a top-down approach. Both getting to know the local needs and creating access to relevant citizens groups, are part of the “Get to know” phase (see Figure 2). In the next step, neighbourhood programmes are assessed by citizens who participate in established neighbourhood activities to which ICEC accesses through local stakeholders. ICEC thereby attempts to assure a real-life environment that is crucial for living labs dealing with social topics. During those place-based activities in the “Involve” phase, the awareness and acceptance of selected local policy measures amongst citizens is identified through, for instance, a group discussion (for qualitative data) that can be followed by a neighbourhood questionnaire (for quantitative data). In addition, follow-up interviews or low-threshold role-play for specific issues revealed during the first interaction with citizens might contribute to a better understanding of interdependencies between local measures and neighbourhood belonging in ethnically diverse neighbourhoods (“Activate” phase). Where interaction between the research interest-driven theoretical and the local needs-driven implementation level is successful, the stimulation of co-creating measures is possible. In this phase of “Co-Creation”, blind spots between local policy measures and local needs can be

addressed through suggestions for adaptations to local policies.

At this stage of analysis it must be noted that the general conceptual urban living lab design must be implemented and tested first in order to gain insights on feasibility. It may need further adjustments with regard to access to local citizens, mix of methods and expected outcomes. Special attention has to be given to the prerequisite of contextualisation within the ICEC project that refers to the local characteristics of the neighbourhoods in three different cities.



Fig. 2: Phases of Interaction with Local Citizens
(own illustration)

3.2 The Contextualised Conception of the ICEC Urban Living Lab

As indicated earlier, the conceptual design of ICEC’s urban living labs relies on a contextualised framework that considers the socio-spatial differences of the respective case study neighbourhoods in Amsterdam, Stockholm and Vienna, as well as the research capacities of each project team. However, flexibility should not be overworked to avoid idiographic results in each neighbourhood case study. To ensure valid analysis and comparison amongst all three project cities, a common base is needed that applies to each neighbourhood, despite any differences in the socio-spatial make-up in terms of ethnic diversity and local policies. To do so, the ICEC project defines a common understanding on:

- the set of local policy measures to be analysed
- groundwork and a locally contextualised version of living labs to be implemented

- a collaboration with local stakeholders to ensure access to local citizens
- the sample of citizens to be activated in each neighbourhood with regard to local conditions

First, the selection of local policy measures has been based on criteria such as education, liveability and housing, participation and empowerment to support a cross-city comparison. Second, the approach for a compulsory groundwork and a locally contextualised version of living labs refers to the diverging research capacities within the project team (see Figure 3). Depending on the research budget and existing collaborations with local stakeholders, the design and intensity of living labs varies within the ICEC project. However, comparability has to be ensured in order to gain valid research results. Therefore, the ICEC living lab concept consists of a first phase of groundwork covering the mandatory elements in each neighbourhood for comparable data collection and analysis. It includes established methods, for instance a common evaluation matrix and a neighbourhood questionnaire or comparison of existing statistics. Qualitative interviews are applied to engage local citizens and gain an in-depth understanding of interethnic coexistence in the respective neighbourhood. This stage within the ICEC urban living lab aims at ensuring a cross-city and cross-country analysis.

The contextualised urban living lab comprises more locally-based and interactive methods to engage with local citizens and foster an active environment of co-creation. For instance, role-play¹⁰ designed in accordance with the needs of the specific neighbourhood, or accompanied walking tours that combine mapping with storytelling. At this stage, the living lab approach provides the opportunity to apply more qualitative and ethnographic methods that include the active participation of local actors. In doing so, the project aims to collect a range of qualitative data that

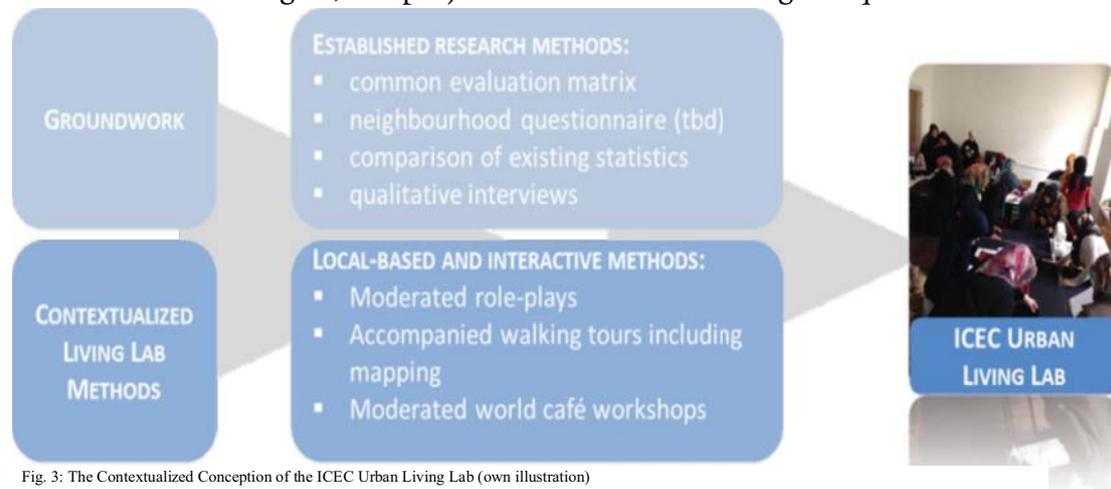


Fig. 3: The Contextualized Conception of the ICEC Urban Living Lab (own illustration)

contributes to an in-depth understanding of notions of diversity and belonging in the neighbourhood. Cross-city and cross-country comparability at this stage is achieved through defined common topics or items within the phase of interaction with local citizens.

In this regard, the matter of authenticity and locally-based measures becomes relevant again concerning the question of how to gain access to local actors and citizens. As the ICEC living lab tries to avoid a top-down approach, we cooperate

¹⁰ See for instance Stadtspieler <http://www.stadtspieler.com/>

with local stakeholders who are already active in the neighbourhood. Intermediate actors like urban renewal offices or community organisations know the neighbourhood from daily experience and offer location-specific programmes to foster interethnic coexistence. Therefore, they are active actors in the neighbourhood, engaging regularly with local citizens and able to connect researchers with local citizens through their work. Additionally, local stakeholders can provide insights into active and inactive individuals or groups in the local community and help to identify the complete group of people affected by the selected policy measures. In doing so, we ensure a low-threshold approach to the local community without risking credibility or causing irritation.

4 Conclusion: Outlook on Future Challenges for Urban Living Labs

As the literature review and recent living labs have shown, a remarkable enthusiasm can be found for applying living labs as an interactive methodology in urban research for engaging with stakeholders and local citizens. Despite the need for further analysis and clarification on the general approach, applicable methods, definition of sample and valid outcomes, the ICEC project contributes to a more nuanced understanding of the conceptual design of social urban living labs claiming awareness for the processual character and locally-based living methods. However, future challenges might not occur solely during the implementation phase. Already at this point in the research, conceptual challenges have been identified with regard to methods, sample, outcomes and long-term strategic actions.

Firstly, methods applicable for living methods must go beyond established methods traditionally implemented in social research. In the case of social urban living labs, methods must be devoted to being interactive and engaging in order to fulfil the attribute of “living methods” and creating a real-life environment that is capable to stimulate co-creation. Further research and living labs are necessary to gain insight into the variety of methods and experience of applicability that can be used for future social urban living lab design and cross-living lab comparison. Secondly, ensuring that participants in the living labs are a representative sample has to be reflected upon critically. How is it possible to ensure a representative sample of local people, rather than the most active citizens? Is it possible to gain access to marginalised or underrepresented voices in the community? Ongoing discussion is also needed to inform a shift of terminology in urban living lab implementation. To ensure a contextualised and sensitive interaction, academic research should not apply established terms such as ‘actors’, ‘sample’ or ‘comparable data’ when referring to interactions with knowledgeable human beings. Thirdly, the open and process-oriented character of social urban living labs has to be an inherent component in current and future research in order to develop living labs as an applicable method for more interactive approaches of urban research. This results also in long-term involvement at several levels, between researchers and stakeholders and also between researchers and local residents. The application of living labs requires a well-designed way of implementation in order to gain in-depth information that goes beyond the quality of results from established research methods.

Finally, the access to local communities through local stakeholders might be supportive in the first stage of research in which the academic field needs to adapt to real-life community needs. Local stakeholders are necessary as a translating institution and as valuable actors in the field into which the respective academic

research is embedded. Critical reflection however is necessary with regards to dependency on stakeholder collaboration and the duration of research. Social urban living labs should ensure authenticity and credibility. Both cannot be assured as long as research is limited to the duration of a specific research project. In order to create a trusting and collaborative interaction with local citizens a shift in research strategy towards long-term engagement is unavoidable.

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