



university of
groningen

Urban Living Labs and Transformative Changes.

A qualitative study to the influence of the triadic relationship between financing, stakeholder roles and outcomes of Urban Living Labs on their impact creation in the city of Groningen.

Student: S.H.G.M. (Stefano) Blezer

Student no.: S3526429

MSc. programme: Socio-Spatial Planning

Date: 17 January 2020

Supervisor: Dr. E. (Emma) Puerari

Institute: University of Groningen - Faculty of Spatial Sciences

Version: Definitive

“Today’s sustainability challenges urgently call for new urban solutions which in its turn require experimentation on suitable scales and with multiple stakeholders. This is where urban living labs have a key role to play” - Dr. Carina Borgström-Hansson; WWF One Planet Cities.

Author's declaration

This Master thesis is written by Stefano Hendrikus Gertruda Maria Blezer who, by signing the following, certifies that the research was carried out by himself and declares to take full responsibility for the contents of this document, and that the work presented in this Master thesis is original and that no other resources than those mentioned in the text and its references have been used in creating it.

The Faculty of Spatial Sciences at the University of Groningen is responsible solely for the supervision of the completion of the Master thesis.

The Master thesis has been deposited and uploaded in the Educational Administration and the Library of the University of Groningen and is a public Master thesis. The Master thesis will be visible in the thesis catalogue, meaning that students and staff of the University of Groningen will be able to access it. It will not be accessible to third parties.

Place and date

Student

Preface

This Master thesis is the final step towards my Master's Degree in Socio-Spatial Planning at the University of Groningen at the Faculty of Spatial Sciences. I hope that this Master thesis and the results of the research can help citizens, governments, educational institutions and businesses to improve their understanding of the Urban Living Lab concept and its potential to contribute to transformative changes in the way we shape cities today. With all of us.

While working on the Master thesis, I received a lot of expertise and support from different professionals. Therefore, I would like to thank a number of people for their help and assistance during this research.

To begin with, I would like to thank my supervisor Mrs. Dr. E. Puerari for the academic support and valuable input and suggestions during our meetings. Your guiding tips and tricks were very helpful!

Besides, I gratefully thank Mr. Dr. B. Wind, Mr. Dr. Ir. T. van Dijk, and Mrs. Prof. Dr. L. Horlings for their support in enabling me to first experience an Urban Living Lab setting myself in Lagos, Nigeria, and second to visit the Open Living Lab Days 2019 Conference organised by the European Network of Living Labs in Thessaloniki, Greece. Both experiences enriched my theoretical and empirical understanding of the Urban Living Lab concept that contributed to this study.

Moreover, I would like to thank all the Urban Living Lab practitioners at the case studies for their contribution to the research. Their experiences and insights are highly appreciated for improving our understanding in the concept and without their involvement this Master thesis would not have been possible.

Additional thanks go to my parents, friends, study mates and others who I spontaneously got in discussion with about my Master thesis research.

Many thanks to all of you!

Stefano Blezer

Groningen

January 2020



European Network of Living Labs



@openlivinglabs #OLLD19 #ManifestoInnovationEU

Stefano Blezer at the Open Living Lab Days 2019 Conference in Thessaloniki organised by the ENOLL.

Source: Stefano Blezer

Executive summary

Urban Living Labs have become a popular instrument to find solutions to a current pressing challenge that cities face: How can they combine economic prosperity, social cohesion, and environmental sustainability all at the same time? While the normalisation of Urban Living Labs in cities is well evident, a lack of understanding in the nature and purpose of the empirical phenomenon leaves open many challenges yet to be overcome. One particular challenge is about their potential impact to contribute to transformative changes beyond their initial domain. By combining a historical literature review with a comparative case study to three Urban Living Labs in the city of Groningen, the Netherlands, this study explores how the triadic relationship between stakeholder roles, funding options and outcomes generated influences the impact creation of Urban Living Labs. Comparison between theoretical models and empirical experiences hint that opportunity lies within trust building between urban stakeholders in Urban Living Labs in order to contribute to urban sustainability. The study confirms and adds to current theoretical positions taken about how to overcome issues regarding impact creation; a call for a shared ideology and reviewing the concept of power. Also, it shows five ways to start trust building in Urban Living Labs: redesigning funding programs, political empowerment of initiators, the level of abstract as facilitator in collaboration, search for new ways to access effectiveness, and a clarification of the concept itself.

Key Terms: Urban Living Labs, Stakeholder Roles, Outcomes, Funding Model, Impact Creation.

List of abbreviations, figures and tables

<i>Abbreviation</i>	<i>Meaning</i>	<i>Abbreviation</i>	<i>Meaning</i>
LLs	Living Labs	ENoLL	European Network of Living Labs
ULLs	Urban Living Labs	JPI Urban Europe	Joint Programming Institute Urban Europe
PPS	Pay Per Service	RUG	University of Groningen
SUBs	Subsidies	SPE	Stichting Paddepoel Energiek
ONFs	Out Of Network Funds	UGL	Urban Gro Lab
CRF	Cross Financing	WIT	Welcoming International talent
Figure 1.	The Funding Mix Framework (Gualandi and Romme, 2019 p. 16).		
Figure 2.	The Conceptual Model (Author, 2019).		
Figure 3.	Theoretical stakeholder roles (above) and the FMF (below) in the Organic ULL (Author, 2019).		
Figure 4.	Theoretical stakeholder roles (above) and the FMF (below) in the Civic ULL (Author, 2019).		
Figure 5.	Theoretical stakeholder roles (above) and the FMF (below) in the Strategic ULL (Author, 2019).		
Table 1.	Strategic, Civic and Organic ULL characteristics (Marvin et al. 2018 p. 8)		



Playing *Urban Living Lab Playground: The Game* at the Open Living Lab Days 2019 Conference in Thessaloniki organised by the ENOLL.

Source: Stefano Blezer

Implement one nature based solution of each category

- PROTECTION & CONSERVATION**
 - Establish protection
 - Limit or provide and/or practice
 - Ensure continuity network (protection fragmentation)
 - Maintenance natural wetland
- URBAN PLANNING STRATEGIES**
 - Ensure continuity of ecological network
 - Control urban expansion
- MONITORING**
 - Planning of physical, biological indicators

TYPE 1 maintaining or improving the ecosystem

2 SUSTAINABLE MANAGEMENT PROTOCOL
Installation of an
*An apiary (also bee yard) where bees

Table of content

AUTHOR'S DECLARATION	III
PREFACE	IV
EXECUTIVE SUMMARY	VI
LIST OF ABBREVIATIONS, FIGURES AND TABLES	VI
#1 INTRODUCTION	1
#2 THEORETICAL BACKGROUND	5
2.1 ORIGIN OF THE LL CONCEPT AND EMERGENCE OF ULLS.....	6
2.2 DEFINITION OF ULLS	7
2.3 STAKEHOLDER ROLES, FUNDING AND OUTCOMES CHARACTERISTICS OF ULLS	9
2.4 DISTINCTIVENESS OF ULLS.....	14
2.5 ULL TYPOLOGIES	15
2.6 SYNTHESIS OF ULLS THEORY AND CONCEPTUAL MODEL	17
#3 METHOD	18
3.1 GENERAL EMPIRICAL RESEARCH APPROACH	19
3.2 CONTEXT AND CASE DESCRIPTIONS.....	20
<i>Organic ULL: Stichting Paddepoel Energiek</i>	21
<i>Civic ULL: Urban Gro Lab</i>	21
<i>Strategic ULL: Welcoming International Talent</i>	21
3.3 ETHICAL CONSIDERATIONS AND PRACTICALITIES	22
#4 RESULTS	23
4.1 ORGANIC ULL: STICHTING PADDEPOEL ENERGIEK.....	24
<i>Empirical findings; stakeholder roles, funding model and outcomes generated</i>	24
<i>Theoretical analysis; stakeholder roles, funding model and outcomes generated</i>	24
<i>Impact creation</i>	26
<i>Destructive loop?</i>	26
4.2 CIVIC ULL: URBAN GRO LAB.....	27
<i>Empirical findings; stakeholder roles, funding model and outcomes generated</i>	27
<i>Theoretical analysis; stakeholder roles, funding model and outcomes generated</i>	28
<i>Impact creation</i>	29
<i>Destructive loop?</i>	30
4.3 STRATEGIC ULL: WELCOMING INTERNATIONAL TALENT	31
<i>Empirical findings; stakeholder roles, funding model and outcomes generated</i>	31
<i>Theoretical analysis; stakeholder roles, funding model and outcomes generated</i>	33
<i>Impact creation</i>	35
4.4 CROSS CASE COMPARISON AND DISCUSSION.....	35
#5 CONCLUSION	38
5.1 ANSWERING THE MAIN RESEARCH QUESTION	39
5.2 IMPLICATIONS FOR THEORY AND PRACTISE	39
5.3 LIMITATIONS OF THE MASTER THESIS	43
#6 REFLECTION	44
#7 REFERENCES	47
#8 APPENDIX	57
8.1 INTERVIEW GUIDE (BLANCO)	58
8.2 INTERVIEW PERMISSION STATEMENT (BLANCO).....	61

#1 Introduction

Chapter one addresses the formulation of the questions that guide the entire study. First, the area of interest is explained plus positioned in wider debates of making the city that makes it relevant to investigate. Second, an example is provided to support the focus of the research. Third, the research questions are presented and a reading guide is provided.

For several years, we have seen Urban Living Labs (ULLs) popping up in cities. M-LAB in the city of Maastricht and the Urban Management Fieldlabs in the city of Amsterdam, just to mention two Dutch examples. This, in response to a pressing challenge that cities are facing: *How can cities provide economic prosperity and social cohesion while achieving environmental sustainability?* (Marvin, Bulkeley, Mai, McCormick and Voytenko, 2018). Not only in practise but also in academia spheres, the concept of ULLs increasingly gained interest. Thus, Hossain, Leminen and Westerlund (2019) and Schuurman (2015) who point to the number of scholarly articles published since 2006; the year of birth of the ENoLL. More practically, Steen and van Bueren (2017) explain that the use of parts of cities as labs is well in line with the current emphasis on the city as the impactful governance level for economic development, sustainable development and citizen empowerment. Indeed, cities are seen as the main drivers for change in socio-technical environments (Baccarne, Schuurman, Mechant and De Marez (2014).

Yet, despite ULLs and their experimentation are taking place in growing degree, this does not imply that we do fully understand the nature and purpose of the empirical phenomenon (Bulkeley, Coenen, Frantzeskaki, Hartmann, Kronsell, Mai, Marvin, McCormick, van Steenbergen and Voytenko, 2016), because the acceleration and normalisation of ULLs in the urban environment proceeded much more rapid than the development of evidence and understanding of their mode of experimentation (Bulkeley et al., 2016; Marvin et al., 2018). As an example, there is a lack of international comparison and systematic learning, and therefore limited knowledge on how ULLs, their impacts and effectiveness can be scaled up to achieve transformative changes (Marvin et al., 2018), and how ULLs can effectively facilitate urban sustainability¹ transitions (Evans and Karvonen, 2013; Nevens, Frantzeskaki, Gorissen and Loorbach, 2013). Such transitions are about changes in markets, policy, culture, technologies, infrastructure as well as in human behaviours and practises (Bulkeley, Castán Broto, Hodson and Marvin, 2010; Frantzeskaki and Loorbach, 2010; Schaffers and Turkama, 2012; Voytenko et al., 2016). A key point here is to examine the roles of niches and experiments in transitions in relatively stable regimes (Schot and Geels, 2008) and a critical and constructive dialogue between urban innovation and the nature of urban governance (Marvin et al., 2018). Existing regimes or systems, namely, seem to be difficult to pry off because they are stabilised by processes that create path dependencies and entrapments (Grin, Rotmans and Schot, 2010), also described as strike backs from the regime (Loorbach and Rotmans, 2010), and “performance-innovation tensions” (Neef et al. 2017 p.2 originally as *prestatie-innovatie spanningen*) between novelty and certainty. Strategic niche

¹ In this Master thesis ‘urban sustainability’ will be used more often as a way to describe the answer to the pressing challenge of Marvin et al. (2018) that cities are facing: How can they provide economic prosperity and social cohesion while achieving environmental sustainability?

management or experimentation is one mean to govern such transitions in which niches can gradually transform current regimes (Kemp, Schot and Hoogma, 1998). ULLs are one way to do so (Marvin et al., 2018; Schaffers and Turkama, 2012), because they are very similar in view to transition management (Loorbach and Rotmans, 2010; Schliwa, 2013) and centre the use of experiments; less directed processes in which innovation or ideas are demonstrated, tested and experiences are gained (Bulkeley and Castán Broto, 2013; Kemp, Schot and Hoogma, 1998). The degree to which these niches and experiments can lead to regime transitions is thought to depend on the growing social networks, innovations and learnings that they establish (Szejnwald Brown and Vergragt, 2008).

Surprisingly, however, existing research mainly focusses on the aims and workings of ULLs instead of critically taking a view on their implications (Bulkeley et al., 2016), unravelling their essence (Hossain et al., 2019), or through which processes ULLs can shape new governance modes of wider provision systems (Marvin et al., 2018), which one would expect in this case. Some of the challenges that ULLs are facing, therefore, are linked with temporality, governance, unpredictable outcomes (Hossain et al., 2019), financial sustainability (Gualandi and Romme, 2019), scalability, diffusion, and impact (Puerari, de Koning, von Wirth, Karré, Mulder and Loorbach 2018; Von Wirth, Fuenfschilling, Frantzeskaki and Coenen, 2019) and the redistribution of agency and risks (Burch, Graham and Mitchell, 2018; Loorbach and Rotmans, 2010; Smith and Raven, 2012).

This Master thesis addresses this research gap by focussing on how the mechanism between funding, stakeholder roles and outcomes of ULLs can contribute to transformative changes required in the urban environment and society to achieve urban sustainability. To elaborate on this focus, an example is presented as explained by Hodson, Evans and Schliwa (2018). The authors present an ULL in Greater Manchester to examine how ULLs and their experiments relate to formal governance structures and priorities in the region. The ULL emerged since investments in cycling aspects of sustainable transport did not bring the intended capacity. Through their analysis, and besides a shared recognition that the ULL was **experimental in character**, three issues are presented that resulted in the relationship between the ULL and formal governance structures.

The first one is called **constrained discretion**, meaning that within the experiment sometimes experimentation and learning was set aside, because of commitments to funders at the National and European level that prioritised material developments. The second is **a lack of coordination of experiments**, because diverse experiments were taking place at diverse locations with a reliance on various funding schemes which created an atmosphere in which loose results emerged despite the strategic coordination. Furthermore, mentioning that project-based innovations in Greater Manchester limit the ULLs potential for systematically physical change, while comparing it with Masdar city; an urban experiment in the UAE in which *“the number of actors involved, divergent understandings of sustainability and fragmented projects ultimately prevents Masdar City from*

achieving its vision of the sustainable city” (p.48). The third is about **knowledge creation and learning**, the rate of success in experiments and how these could contribute to governance strategies and priorities. This contribution was less clear, because the outcomes were unclear or intangible. Providing a quote from an interviewee that *“It is just hard to grasp what is been delivered”* (p.48) and an explanation on *qualitative learning* makes this very clear, ironically.

To conclude and critically mentioned, in reality there is a disjuncture between top-down urban planning and bottom-up partnerships and experimentation that tries to remake the city one project at a time. As such, the current urban experimentation represents a specific governance fix for the neoliberal systems that are struggling towards urban sustainability.

The objective in this Master thesis is **to gain a better understanding and insight in how and what types of ULLs can contribute to transformative changes in the urban environment and society by focussing on the relationship between funding, stakeholder roles and outcomes of ULLs**. In order to do so, the following research question and sub-research questions are set up:

How can ULLs contribute to transformative changes in the urban environment and society by gaining a better understanding in the relationship between their funding, stakeholder roles and outcomes?

1. What are theoretical ULLs and how does the literature describe and suggest how they should be used in today’s changes in the urban environment and society?
2. What is the practical relationship between funding, stakeholder roles and outcomes in existing ULLs in the city of Groningen, and why?
3. What are the differences and similarities between theoretical and practical views on ULLs, and how does this influence its potential to contribute to transformative changes in the urban environment and society?

The Master thesis is set up around eight chapters. Every chapter contains a new frontpage with a short introduction. The first chapter introduces the topic and focus of the Master thesis. Chapter 2 reviews current literature regarding ULLs. Then, chapter 3 elaborates on the methodology used. Next, chapter 4 provides empirical findings and an analysis thereof at three ULLs in the city of Groningen. Additionally, a conclusion is drawn in chapter 5. Chapter 6 gives a personal reflection on the study, followed by chapter 7 showing an overview of resources consulted. The appendices are found at the end.

#2 Theoretical Background

This chapter provides a holistic overview of relevant literature regarding ULLs and the research focus. More specifically, it elaborates on the origin and emergence of (U)LLs, definitions available, stakeholders' roles, funding options, outcomes characteristics, distinctiveness, and typologies created. The chapter closes with a conceptual model in which the most important literature is captured and that forms the basis for the empirical research.

2.1 Origin of the LL concept and emergence of ULLs

William Mitchell is considered the founding father of the LL concept while working at Massachusetts Institute of Technology (MIT), though the term *living laboratory* is first used by Knight (1749). His interest was in how people could be involved more actively in urban planning and the city design (Mulvenna, Bergvall-Kåreborn, Martin, Wallace and Galbraith, 2010). He started a LL in the 1990s to map routine interactions of participants' everyday home life by applying modern technologies to gather data for analysis (Robles, Hirvikoski, Schuurman and Stokes, 2015).

When looking at EU history of ICT- and user innovation, the modern LL movement is referred to three predecessors according to Robles et al. (2015): the Scandinavian participatory design movement in the 60s and 70s, the European social experiment with IT in the 80s, and the Digital City Projects since the 90s. Subsequently, the ENoLL was founded in 2006, which is the international federation of LLs in Europe and worldwide that can act as a platform to support and learn from and that has recognised over 440 LLs since then (ENoLL, 2019). Indeed, it is "*an umbrella organization for living labs around the world*" (Hossain et al., 2019 p. 977).

Albeit this may be true for the origin of the LL concept, the emergence of ULLs needed another critical event to happen: the 2008 Global Economic Crisis. From then on, cities struggle to find solutions to faced challenges. Accordingly, the JPI Urban Europe was created in 2010 to develop an EU research and innovation hub on urban issues to find solutions on EU scale by conducting coordinated research (JPI Urban Europe, 2019). Besides, it introduced the term ULL and today it is the main funding agency for ULL activities (Voytenko et al., 2016).

According to Marvin et al. (2018), this critical event in combination with austerity measures in the aftermath, growing urbanisation, and subsequent sustainability challenges (Voytenko et al. 2016) caused three sets of issues: **the fragmentation of urban sustainability discourse, the challenges of generating systematic change in the organisation of the built environment, and the introduction of new partners and social interest in urban experimentation.**

First, since there is no singular pathway towards urban sustainability (de Jong Joss, Schraven, Zhan and Weijnen, 2015), the research and policy community that focussed on urban sustainability started to gather around three co-existing pathways that individually argue how the built environment should be reshaped and what should be strategically important: smart cities, low carbon cities and resilient cities. Respectively, making (material) flows more efficient and flexible, reducing carbon flows and searching for alternatives, and focussing on resources important for the (re-)production and protection of cities.

Second, there is a search to find ways of systematically shaping experiments to find new models and parties that may overcome rigidity in their own existing socio-technical systems in order

to develop new capacity to innovate. Apparently, interest increased in the potential of modes of experimentation in place-based contexts, previously developed in corporate contexts wherein businesses developed methods for open and rapid innovation with the use of IT (Almirall and Wareham, 2011; Chesbrough, 2003).

Third, corporate actors started to see the urban environment and the city as the space and market for integrated products and services (Luque-Ayala and Marvin, 2015; Paroutis, Bennet and Heracleous 2014). Also, the involvement of research and technology institutes plus support for local communities and grassroots initiatives has increased in urban experimentation to align with National innovation and meet economic priorities (Marvin et al., 2018).

Indeed, Bulkeley et al. (2016) position ULLs as a form of niche innovation and experimentation in a broader shift in the nature of urban governance into *politics of experimentation* rather than ULLs being stand-alone activities to achieve urban sustainability (Evans, Karvonen and Raven, 2016; McGuirk, Bulkeley and Dowling, 2014). They do so by viewing them in the light of transition theory and urban governance to raise the question if ULLs can create impact beyond their initial domain and start transitions in existing locked-in socio-technical or socio-ecological systems.

In the meantime, this chronological evolvement of LLs and ULLs is described as three generations of LLs by Leminen, Rajahonka and Westerlund (2017). The first generation focussed on LLs as real-life environments intertwined with users and stakeholder activities, such Mitchell's LL. The second generation considered methods and tools as part of innovation activities in real-life environments. One finds examples in early ENoLL membership LLs. The third generation "*portrays different modes of collaborative innovation, where different stakeholders and particularly users have crucial roles in innovation on platforms*" (p. 22). Herein, ULLs and their city contexts can be seen as socio-technical platforms (Westerlund, Leminen and Habib, 2018) that also focus on social impact rather than technical or business innovation only.

2.2 Definition of ULLs

There is no universal ULL definition, since they are formed by various stakeholders, focus on different goals, and form different partnerships (Voytenko et al., 2016). Indeed, Leminen (2015) found around 70 definitions (European Commission, 2017). It seems, however, that two groups of researchers define ULLs and LLs from their own historical perspective, creating different views on the nature of (U)LLs. In the meantime, Steen and van Bueren (2017) argue that ULL and LL definitions are or should be the same since only their focus on finding solutions (to urban sustainability) is different, while their functioning is not.

On the one hand, LL definitions stem from open and user innovation theory, co-creation and living labs. An often-cited definition is that of Westerlund and Leminen (2011) plus Leminen (2013);

2015), because it is a very broadly interpretable and applicable definition: *“physical regions and virtual realities or interaction spaces, in which stakeholders form public-private-people partnerships (4Ps) of companies, public agencies, universities, users and other stakeholders, all collaborating for creating, prototyping, validating, and testing of new technologies, services, products and systems in real-life contexts”*. More recently, the same researchers and others have renewed their definition viewing LLs as sociotechnical platforms that try to create an innovation ecosystem with various stakeholders in various ways (Westerlund et al., 2018).

On the other hand, ULL definitions stem from management transition and urban governance. ULLs are herein viewed as a governance model and as a way to experiment and learn about innovation in the urban sphere. Bulkeley, Marvin and their colleagues (2013; 2016; 2018) for example mention that ULLs are *“sites devised to design, test and learn from social and technical innovation in real time in order to respond to particular societal, economic and environmental issues in a given urban place”*, and that they *“constitute a form of experimental governance whereby urban stakeholders develop and test new technologies, products, services and ways of living to produce innovative solutions to the challenges of climate changes, resilience and urban sustainability”*. In fact, urban sites can provide a learning arena in ULLs to innovate among stakeholders involved (Liedtke, Welfens, Rohn and Nordmann, 2012). In contrast, LL definitions do not mention experimentation or learning.

Two other important definitions are given by the ENOLL and the JPI Urban Europe organisations that explain why ULL definitions are younger and link with urban governance compared to LL definitions. Interestingly, only these two practical definitions specifically consider users as co-creators, while scientific LL and ULL definitions stay rather general in terms of collaboration among urban stakeholders or hinting to the quadruple helix model.

In this Master thesis, the definition brought up by Bulkeley and Castán Broto (2013) and interpreted by Voytenko et al. (2016, pp. 45-46) is used: *“Urban living labs constitute a form of experimental governance whereby urban stakeholders develop and test new technologies, products, services and ways of living to produce innovative solutions to the challenges of climate change, resilience and urban sustainability”*, because it shows two aspects. First, ULLs constitute a form of experimental governance with and between urban stakeholders. Second, it underpins the focus on finding solutions to today’s urban challenges and reaching urban sustainability. Both are highly important, because today’s urban and societal challenges need collaborative efforts across sectors as well as between disciplines (Bulkeley et al., 2016; Evans et al., 2015; Hossain et al., 2019; Marvin et al., 2018; Menny, Voytenko and McCormick, 2018; Voytenko et al., 2016).

2.3 Stakeholder roles, funding and outcomes characteristics of ULLs

Current literature encompasses many different aspects of ULLs that one could focus on². For example, Blezer (2017) found nine aspects that are important when starting an ULL: Empathy in users, student involvement, visibility & accessibility, long-term vision and leadership, stakeholder' expectations, financial and political sustainability, networking, process & results, and communication. Recently, Hossain et al. (2019) discuss eight aspects identified in ULLs after a systematic literature review: real-life environment, stakeholders, activities, business models & network, approaches, challenges, outcomes and sustainability. In this Master thesis, three of them are discussed interchangeably: stakeholder involvement and roles, funding models, and outcomes generated in ULLs.

The core idea of ULLs is that urban sites can provide a learning arena within which the co-creation of innovation can be pursued between research organisations, public institutions, private sectors and community actors (Liedtke et al., 2012), representing the quadruple helix model (Bulkeley et al., 2016; Hossain et al., 2019; Steen and van Bueren, 2017). Participation of stakeholders in this sense can be open or closed according to Dell'Era and Landoni (2014); implying that everyone can participate everywhen or using a pre-selection of participants. As such, Steen and van Bueren (2017) argue that participants do have decision power in different stages of the innovation process, although acknowledging that only 12 out of 90 ULL projects in their study provided real participation, leaving most in the tokenism or non-participation level (Arnstein, 1969). Others highlight the importance of leadership and ownership in ULL collaborations (Voytenko et al., 2016). In practise, it is indeed seen that municipal oversight (Burch, Graham and Mitchell, 2018), a combination and divide between strategic- and project partners (Gualandi and Romme, 2019), and a division of a core group and inner- and outer circles (Puerari et al., 2018) can be crucial in ULLs.

ULLs are associated with two paradigms according to Hossain et al. (2019), namely Open innovation and User innovation. Both are extremes of the user involvement spectrum as Leminen (2013) positions the first as top-down and the latter as bottom-up management styles to innovation processes, in which users can be seen as lab-rats to collect data from or co-creators in innovation (Leminen et al., 2017). **Open innovation** links with the idea that businesses cannot operate on their own and instead look for external resources to improve their developments (Chesbrough, 2003), which is observed in networks as well with a joint agenda (Jarvenpaa and Wernick, 2012). Nevertheless,

² For a complete overview of characteristics, constructs and discussions thereof take a look at Blezer (2017), Evans et al. (2015), Gualandi and Romme (2019), Guzman et al. (2013), Hossain et al. (2019), Marvin et al. (2018), Steen and van Bueren (2017), Voytenko et al. (2016), Schaffer and Turkama (2012) and Westerlund et al. (2018).

differences and similarities are found between open innovation and LLs, regarding the Business-to-Business and Business-to-Customer context and a structured versus practical approach to innovation, respectively (Hossain et al., 2019). **User innovation** highlights the necessity of passive and active roles of users in innovation processes (Leminen et al. 2015; Mulder et al., 2008), also expressed as innovation with and by citizens (Baccarne et al., 2014), citizens and civil societies as sources of innovation (Eriksson et al., 2005) and differences of users in society that are a key asset in ULLs (Bergvall-Kåreborn and Ståhlbröst, 2009).

In the end, both are needed to identify needs and ideas and validate and formalise learning outcomes (Menny et al., 2018). ULLs are a tool to bridge both in innovation processes according to Schuurman (2015) by conceptualising them in three layers. The Macro-layer is about the organisation and partnerships organised to carry out LL research and projects including interactions and knowledge exchange. The Micro-layer is about the ways of user involvement, activities and methodologies for innovation and research. Meeting both layers in the middle wherein open and user innovation overlap, the Meso-layer is about an innovation project and its outcomes that is given form by both the constellation and methodology used.

ULLs contain five distinctive overarching **stakeholder roles: Enabler, Provider, Utilizer, User and Researcher** (Bondarenko, Schuurman and de Kinderen, 2019; Leminen, Westerlund and Nyström, 2012; Schuurman, Baccarne, De Marez, Veeckman and Ballon, 2016; Westerlund and Leminen, 2011). **Enablers** stand for organisations that make things happen and that support ULL activities in financial terms or other resources, like NGO's or municipalities. **Providers** are development organisations, such as universities or firms, that provide something to ULLs like knowledge or expertise. Public or private organisations that use ULLs as a strategic tool to develop or to benefit for their own business are **Utilizers**. As a sidestep, discussion is going on about the involvement of utilizers in ULLs because private business and public good ideologies can clash with each other. Blezer (2017) hypothesised this in his Bachelor thesis, Hossain et al. (2019) hint to whether utilizer involvement is hoped for or not, Baccarne et al. (2014) found that utilizers are least-involved in ULLs, and Menny et al. (2018) found lowest levels of user involvement in a utilizer-driven ULL. **Users** reflect end-users of products or citizens in a specific place who are involved in ULL activities. **Researchers** are added by Schuurman and colleagues (2016; 2019) as a distinctive role since they do not only provide knowledge (as providers), but also do generate new scientific knowledge in diverse fields, like policy, which was neglected by Leminen and colleagues (2011; 2012).

Research to stakeholder roles is not limited to these five, though. Leminen, Westerlund and Nyström (2014) show that users can be an informant, tester, contributor or co-creator in LL networks. Nyström, Leminen, Westerlund and Kortelainen (2014) identified 17 stakeholder roles in LLs. Leminen et al. (2017) propose the provider, neighbourhood participant, catalyst or rapid experimenter role for

city administration in third-generation LL networks. And Bondarenko et al. (2019) show that the above mentioned five overarching roles can be 'played' by all the four types of stakeholders in the quadruple helix model resulting in 20 different positions stakeholders can take. However, this level of detail is beyond the scope of this Master thesis and, critically, one could argue the practicability and theorisation of such number of roles since most of them are set up by the same researchers.

Regarding funding of ULLs, Schaffer and Turkama (2012) explain that business models remain underdeveloped and unsustainable, because they depend on public funding, project-based injections or funding from universities or regional development agencies. Others stress the financial struggle too (Gualandi and Romme, 2019; Hossain et al. (2019), while it is acknowledged to be crucial for long-term operation, scalability and impact (Evans et al., 2015; Veeckman et al., 2013). Indeed, Guzman, del Carpio, Colomo-Palacios and de Diego (2013) provide a SWOT-analysis of the concept showing that they require long-term funding (as a weakness) and a lack of public funding due to the economic situation (as a threat that might be different by now). Indignantly, an opportunity is the presence of strong political support, which is apparently not yet strong enough to guarantee funding over time.

Recently, The **Funding Mix Framework (FMF)** is set up by Gualandi and Romme (2019), which provides a holistic view of the relationship between stakeholders, value creation and funding options. The FMF is shown in Figure 1. It consists of four funding methods: **Pay per service (PPS)**, **Subsidies (SUB)**, **Out of Network Funds (ONF)**, and **Cross Financing (CRF)**. PPS is a revenue arising from services in ULLs, mostly given by private partners that seek economic value. SUB is often given by public partners in the strategic level of ULLs. ONF are equal to SUB, however, provided by partners not involved in the ULL constellation, like EU funding. SUB and ONF are linked to public value. Paradoxically, Baccarne et al. (2014) explain that economic value must be included to ensure EU grants, while ONF thus tries to achieve public value. CRF is about new ways of funding, such as renting out the physical space ULLs have to third parties. CRF is not linked to a specific value created.

Outcomes in ULLs can be tangible, intangible or diverse in innovation, being incremental (small and specific) or radical (systematic innovations), according to Hossain et al. (2019). Most studies on ULLs have however focussed on incremental rather than radical outcomes (Hossain et al., 2019). One might not be surprised as successful ULLs are inherently local (Burch et al., 2018) and are viewed as the starting point for scalability and transformation at different scales (Astbury and Bulkeley, 2018). Despite, May (2018) shows that these small scale (organic) ULLs face the hardest search for appropriate funding forms and partners, whereas higher scale (civic and strategic) ULLs have similar ways of funding.

Additionally, Gualandi and Romme (2019) argue that value created in ULLs can be **economic, business and public in nature**. The first is about tangible and measurable outcomes, like economic growth or generated start-ups (Baccarne et al., 2014). The second is an extension of economic value,

such as trainings provided. The third is about non-financial impacts of ULLs that following Baccarne et al. (2014) link with realizing policy goals. ULLs can thus be used for entrepreneurship as well as social entrepreneurship including technological determinism as well as a social dimension and supporting context. Moreover, public value is considered the most important in ULLs (Guzman et al., 2013). Baccarne et al. (2014) also argue that ULLs have a strong focus on social value creation and civic engagement. Yet, at the same time, these are the most difficult ones to measure (Ståhlbröst, 2012), such as urban safety or environmental awareness. Indeed, demonstrating the long-term value of ULLs is one of their threats (Guzman et al., 2013), because of the user and societal acceptance of innovations (Schaffer and Turkama, 2012; Gualandi and Romme, 2019).

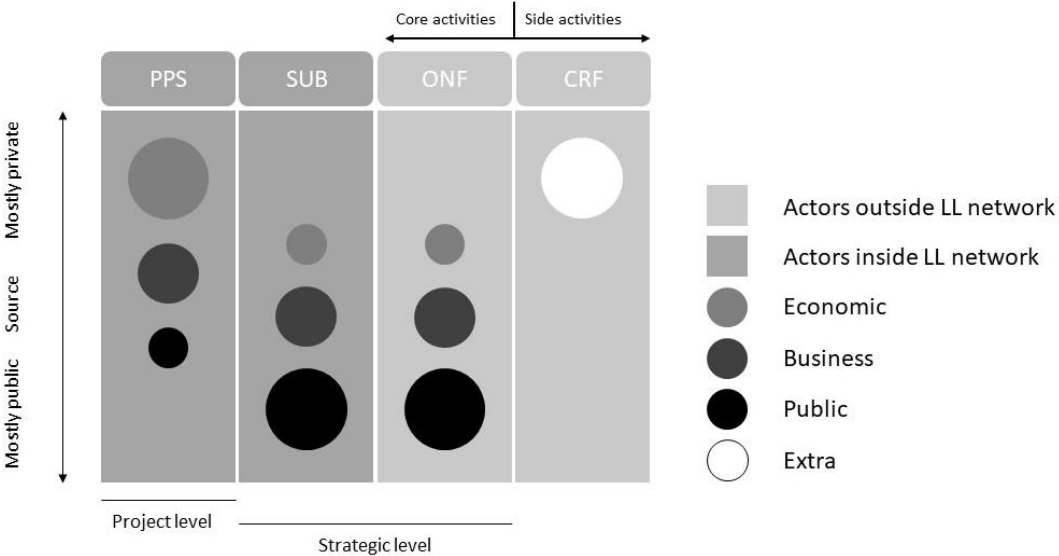


Figure 1: The Funding Mix Framework (Gualandi and Romme, 2019 p. 16).

Besides, in innovation design, which is an approach to design shared values for business, non-profit organisations, end-users and society, value can be viewed on different levels and from different perspectives. Den Ouden (2011) distinguishes between user, organisation, ecosystem and society level and the economic, psychological, sociological and ecological perspectives creating 16 areas that innovation outcomes should cover to be meaningful. The take-away message from Den Ouden (2011) is that ULL outcomes must apply to individuals as well as collective groups and should include the different perspectives that cover urban sustainability in order to start “*transformational innovation*” (p. 13). Thus, including both economic and public outcomes (Gualandi and Romme, 2019).

As we speak of ULLs creating impact and transformative changes, Von Wirth et al. (2019) provide three ideal types of diffusion: **Embedding**, **Translating** and **Scaling**. The first is about the adoption and integration of an approach or outcome in existing local structures. The second is about elements of experiments or lessons learned being replicated and reproduced elsewhere. The third is

about experiments becoming “*bigger in terms of content and remit*” (p. 233). Also, transformative changes are viewed as the de-institutionalisation of existing socio-technical structures and new more sustainable ones being created, diffused, mainstreamed and institutionalised again (Von Wirth et al., 2019).

When looking at the present debate on solving the issue between funding, stakeholder roles and outcomes, two positions are found. First, researchers call for a shared ideology within ULLs in such a way that complementarity stands above competition between stakeholders, because competition hinders collaboration (Guzman et al., 2013). This is also advocated by Gualandi and Romme (2019) who point to different funding options that should complement each other and Mangan, Rukanova, Henningson, Kipp, Klein and Tan (2009) who hint to a common language as new discourse with shared perspectives. Second, debate is going on about agency and power of stakeholders involved and how this is orchestrated and take effect. For example, Burch et al. (2018) found that municipalities fear financial and political risks associated with experimentation and failure, and therefore chose certainty above novelty. In a similar vein, Savini and Bertolini (2019) demonstrate that ULLs relate to the political dynamics of institutional stability and change, that can affect the evolutionary pathway of ULLs by stopping them, retain passively in the same area, retain actively and replicate practises elsewhere and create regime change. Hereto, Bulkeley et al. (2016) see power as distributed property so that it is not only about individual agents nor structurally determined, linking with structuration theory (Giddens, 1984). Menny et al. (2018) also advocate the wheel of participation provided by Davidson (1998) rather than the ladder of citizen participation as provided by Arnstein (1969), introducing a cyclical process of redistributed power throughout different ULL phases. Indeed, Burch et al. explain that ULLs flip traditional planning theory and practise by redistributing agency and power to non-traditional urban stakeholders in a way that municipal governments can share their financial and institutional risks with private stakeholders and citizens (2018). In short, it seems that opportunity lies in a change of mindset towards shared ideologies and re-viewing agency and power.

Concluding, ULLs must make impact to start transformative changes. In order to make impact, ULLs must operate in the long run. Hereto, continued funding is needed. Continued funding is not yet guaranteed, however, because outcomes are also of public value, like policy goals or knowledge creation. To manage risks associated with public value, like losing political power or disinvestments, financiers only provide project-based or short-term funding for ULLs. This way, ULLs remain limited to exploit their full potential of contributing to achieve urban sustainability.

2.4 Distinctiveness of ULLs

While researchers have been able to identify the most common characteristics of ULLs, it is harder to specify what sets them apart from other types of innovation and (urban) experimentation. This due to the fact that typical characteristics sets them apart as well, which makes it harder to clarify why, how and when these developed to do so. The often-cited starting point is Ballon, Pierson and Delaere (2005) who point to experimentation and user involvement as co-producers that set LLs apart from other test and experimentation platforms. Critically, in 2005 ULLs did not yet exist as discussed in paragraph 2.1. More recently, distinct aspects are their focus on urban sustainability, learning, experimentation and (social) impact.

To start with, ULLs are **place-based embedded** meaning they link with explicit urban places and their functioning that can vary from urban site to road- or building scale (Bulkeley et al., 2016; Voytenko et al., 2016), and that can be reframed throughout its activities by enrolling new actors or sites (Astbury and Bulkeley, 2018; Steenbergen and Frantzeskaki, 2018). May (2018) argues that place-based embeddedness turns out to be less relevant in strategic ULLs compared to organic ULLs.

Thereby, the focus on **learning**, as a mean through which experiments become successful, might be the most important aspect in ULLs that makes them distinctive. This can be highly instrumental to collect data in real-time through smart applications or as collective and reflective practises through ongoing interaction, also referred to as exploitation and exploration activities (Almirall and Wareham, 2011; March 1991). Both are critical to gain traction and realise goals for governing the urban environment (Bulkeley et al., 2016). Indeed, Steen and van Bueren (2017) argue that ULLs are more complex, because of their *“intricate number of variables and relationships influencing the process and outcomes”* (p. 26), which is the learning arena (Liedtke et al., 2012) that can provide **formalised knowledge creation** and the **replication of lessons learned**. The focus on learning might be the result of the emergence of ULLs in the aftermath of the 2008 Global Economic Crisis, because especially municipalities back then were in a search for and wanted to learn about new development pathways for cities.

Moreover, ULLs can **achieve urban sustainability and mobilise change within socio-technical and socio-ecological systems** that also focus on consumption, behaviour and life styles (Voytenko et al., 2016) next to technological innovation per se. Therewith, ULLs link with the theoretical background of urban governance and transition management theory (Bulkeley et al., 2016) and with innovation in planning processes (Scholl and Kemp, 2016). Indeed, it seems most researchers acknowledge a link to social sciences by now, speaking of a socio-aspect of provision systems. However, various perspectives remain about ‘normal’ sustainability in ULLs, like understanding their role of governing urban, social, and environmental transformation (Bulkeley et al., 2016; Marvin et al., 2018), as experimentation

mode by bringing together urban stakeholders (Evans et al., 2015; Hossain et al., 2019; Voytenko et al., 2016), or the ULLs' viability and responsibility to communities in terms of environmental, social and economic effects (Bergvall-Kåreborn et al., 2009).

2.5 ULL typologies

Current typologies of ULLs are not coherent with one another, since cases investigated differ and the criteria that form the base of typologies created are not widely agreed upon in the existing literature and ULL community. Often used cases are for example located in the Western world and Scandinavian contexts, because these were at the forefront of the origin and emergence of (U)LLs and the start of the ENoLL and JPI Urban Europe. While typologies have been set up, researchers do acknowledge that types may overlap in reality and can change over time.

Neef et al. (2017) differ between Product Oriented Labs and Urban Transition Labs in which the theoretical foundation is the base for the distinction. Product Oriented Labs stem from open innovation theory in which a participatory mindset and involvement of end-users is crucial for innovation (Sanders and Stappers, 2008), whereas Urban Transition Labs stem from transition management theory in which focus is laid on transitions defined as *“societal processes of fundamental changes in culture, structure and ways of operating”* (Neef et al., 2017 p. 8; Nevens et al., 2013). One could argue this differentiation aligns with the development of LLs before and ULLs after the 2008 Global Economic Crisis.

Leminen et al. (2012) and Schuurman and colleagues (2016; 2019; 2019) provide us with five types of LLs based on the stakeholder who drives the activities and plays the most active role in the initial phase and as principal promotor: Enabler-, Provider-, Utilizer-, User-, and Researcher-driven. Whereas Neef et al. (2017) use theory as the base for distinction, these researchers mainly base their typology on practical experiences in various (U)LLs in different EU countries and among ENoLL members.

Another typology, based on an urban dimension and geographical scale, is brought to the fore by Marvin et al. (2018). They differentiate between **Strategic**, **Civic** and **Organic ULLs** based on a comparative empirical research of 50 ULLs in diverse parts of Europe, see Table 1. **Strategic ULLs** have partly steering from higher level authorities and involves private sector actors. They contain larger scale technological development programmes developed by state intermediaries, such as the Dutch Enterprise Agency. These programmes are often state sponsored together with private partners in order to test and develop applications, build local capacity and develop and improve the international competitive position. The urban context is in this sense seen as a potential site for the development and implementation of experimental activities to create first mover advantage. Investments are

therefore made (in lump sums) for specific activities instead of guaranteeing long-term continued funding. **Civic ULLs** link with municipal governments and local stakeholders, like universities and companies. This typology focusses on particular urban priorities to overcome local constraints. Hence, co-funding based on partnerships is widely used in combination with research funds, municipal funding, private investments and National or European subsidies. The primary goal tends to have a strong local character, like improving economic performance. However, to grant for National or European funding, these local priorities are reframed for application and to fit within the strategic National or European priorities (Baccarne et al., 2014; Marvin et al., 2018), questioning to what extent these ULLs really do have a local character. Mention worthy, embedding learning and benefits within the urban context is an attempt these ULLs try to achieve. **Organic ULLs** are focussed on specific local and contextual issues on community- and neighbourhood level *“to support different economic, social and environmental dimensions of community wellbeing and development”* (Marvin et al., 2018 p. 10). These can be very diverse, like pollution, social needs or urban poverty. The key actors are civil society and non-profit organisations who try to mobilise residents around experiments or projects. Also, organic ULLs link with the grassroots innovation literature in socio-technical and innovation studies like Seyfang and Smith (2007), who make a distinction between simple- and strategic niches. Respectively, niches that value only their own sake, and niches that are a means to an end and seek wider transformation³. Funding in organic ULLs is based on improvisations ranging from applying for subsidies to investing voluntary time and other (personal) resources.

Table 1. Strategic, Civic and Organic ULL characteristics (Marvin et al. 2018 p. 8)			
<i>Characteristics</i>	<i>Strategic</i>	<i>Civic</i>	<i>Organic</i>
Lead actors	Innovation agencies, national government and corporate business	Municipal and local authorities, higher education and research institutes, local companies and SME's	Civil society, communities, NGO's and residents.
Urban imaginary	Urban as a testbed that can be replicated or generalised	Urban as a contingent and historically produced context	Urban understood in particular ways by local communities
Primary purpose	National innovation and technological priorities	Urban economic and employment priorities	Community social, economic and environmental
Organisation form	Competitive (Urban selected site as a site for experimentation)	Developmental (Partnerships formed by local actors)	Micro / Single (Multiple forms of community organisation)
Funding type	One-off or competitive	Co-funding or partnership	Improvised
Analogue	National innovation	Urban technology policy	Grassroots innovation

³ See for example Astbury and Bulkeley (2018) who have explored how grassroots innovation and community initiatives can start processes of transformation in London, during the Manor House PACT case of the GUST project funded by the JPI Urban Europe.

2.6 Synthesis of ULLs theory and conceptual model

Figure 2 shows the conceptual model that is set up as analytical framework for the empirical research. The following enumeration sets the base for the conceptual model:

1. The typology of ULLs brought up by Marvin et al. (2018) is used since it is based on an urban dimension and geographical scale.
2. The five stakeholder roles are used as found by Leminen and Schuurman plus their colleagues to explore what stakeholders are involved in which type of ULL (2011; 2012; 2016; 2019).
3. The FMF as given by Gualandi and Romme (2019) is used to investigate what funding options different types of ULLs make use of.
4. Outcomes of ULLs are also explored by using the FMF whether they apply to individual stakeholders or a group of stakeholders. Hereto, outcomes can be economic or private and public or collective in nature as explained by Gualandi and Romme (2019). Business value is neglected, however, because it is an extension of economic value. Thereby, it is looked upon whether outcomes were foreseen or predicted in advance or an unexpected result.
5. The research assumes the three ideal types of diffusion to create impact as provided by Von Wirth et al. (2019) to start transformative changes and that help to achieve urban sustainability.

Importantly, the conceptual model looks static whereas it is highly dynamic. For example, stakeholders might fulfil multiple stakeholder roles at the same time while these are presented as separate options in the conceptual model. For clarification reasons, however, it is chosen to put it as such to show the theoretical basis for the analysis in the empirical part.

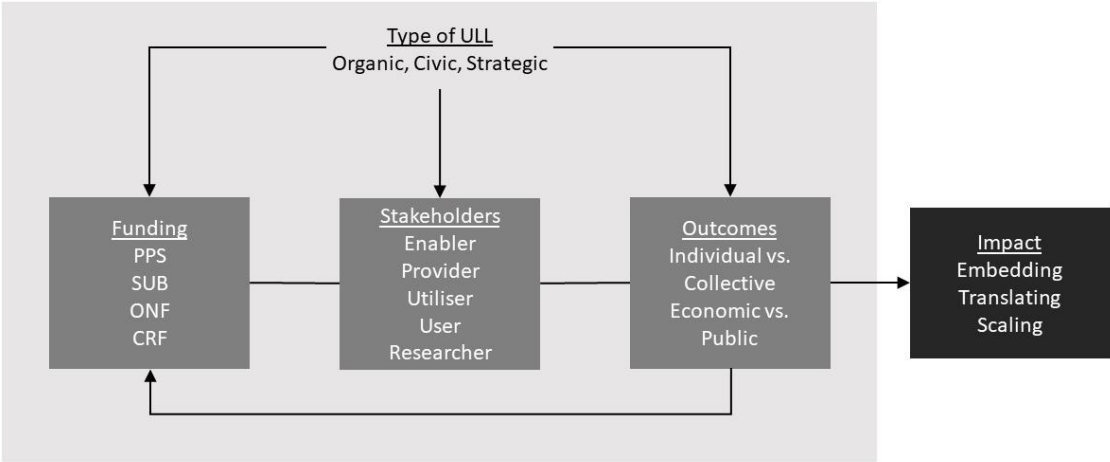


Figure 2: The Conceptual Model (Author, 2019).

#3 Method

The general empirical research approach and choices made regarding the literature review, involved case studies, their selection criteria, data collection methods and analysing approach are clarified in chapter three. Also, the case studies and their context are briefly described and some ethical considerations and practicalities are being discussed.

3.1 General empirical research approach

Because the phenomenon of ULLs is a hot topic both in theory and practise, a combination of a deductive and inductive research approach is used with a qualitative research design. According to Punch (2014), this approach is useful to gain a holistic overview of the context that is under study and to collect data from actors in the unit of analysis (Yin, 2003). Also, qualitative designs are, according to Yin (2003), particularly appropriate to study novel phenomena over which the researcher has little or no control in an explorative manner and to find answers to how- and why-questions.

First, a **literature study** is held broadly in order to understand ULLs and the historical aspects that are important to it. The study starts with two documents: **The Urban Living Labs: Experimenting with city futures scientific reader** from Marvin and colleagues (2018) and **the academic paper A systematic review of living lab literature** by Hossain et al. (2019) in which the most comprehensive literature regarding (U)LLs is looked at. Subsequently, the retrospective **Snowball method** is used to find additional relevant literature whereby focus is laid on previous work of recognised authors in the starting documents. Then, the **Pearl-growing method** is applied to complement the found literature by using key terms found. The key terms (Urban Living Labs, Impact, Diffusion, Outcomes, Value, Stakeholder roles, Funding model, Financing) were put in the Google Scholar search engine.

Second, a **comparative case study** is conducted, which is according to Punch (2014) the idea of studying several cases in detail using whatever methods and data that seem appropriate to learn about them. **Semi-structured interviews** are chosen to collect data, since these are one of the most powerful ways to understand others and to access people's perceptions, meanings and definitions of a situation (Punch, 2014). In total, six interviews and one mail questionnaire have been conducted with eight interviewees in October and November 2019. The interviews lasted between 38 and 90 minutes and were taken at the location of the interviewees, except for one in the Groninger city centre. The interviewees are governmental employees (2), governmental trainees who coordinated ULLs (2), civil initiators (2), a university employee (1), and a semi-private sector person (1).

Moreover, three cases are selected first by meeting four general ULL criteria and second by meeting specific criteria to label cases either as strategic, civic or organic ULL. The criteria are assessed while reading about the cases in online policy documents, on their websites, and about their mission, vision and goals. As far as general selection criteria are concerned the case is 1) geographically embedded in a particular location or place, 2) must consist of urban stakeholder in the co-creation triple- or quadruple helix model, 3) focusses on urban sustainability, and 4) uses experiments or test moments to generate knowledge or learn about urban sustainability. Additionally, the Strategic ULL operates on 1) city, regional or national scale, has 2) involvement or a link to (national) innovation agencies or agreements, is 3) financed by a lump sum in relatively short-term (although not necessary),

falls 4) into a wider sustainability strategy, and is 5) competitive in nature. The Civic ULL operates within 1) city scale, is focussed on 2) local urban priorities, and 3) consists of a clear partnership between urban stakeholders that initiated the ULL. The Organic ULL is active on 1) community- or neighbourhood level, is 2) not initiated by governmental parties, focusses on 3) specific local contextual issues that link with social needs or ideological values of the initiators, and 4) is a strategic niche (Seyfang and Smith, 2007).

The semi-structured interviews are transcribed manually and analysed by using the coding and memoing methodology. Coding is the systematic and disciplined process of putting tags, names or labels to pieces of data that are descriptive and inferential (Miles, Huberman and Saldana, 2013). Analysis began with scoring out irrelevant information. Then, codes were attached to pieces of texts covering the same theme. Subsequently codes were put on post-its, which resulted in 42 to 82 codes per interview held. Next, post its were spread out to cluster them and to find connections between codes or clusters. Alongside with coding, the creative and speculative memoing technique is used to put memo's on different spots in the transcript. A memo is a *theorising write-up of ideas about codes and their relationship as they strike the analyst while coding*'' (Punch, 2014 p. 177; originally retrieved from Glaser, 1978) that helps the researcher to move from the empirical to the conceptual level.

3.2 Context and case descriptions

The case studies are located in the city of Groningen, which is the capital city of the eponymous province in the north of the Netherlands. With a growing population of 231.299 (Allecijfers.nl, 2019), it is the largest and youngest city in the north of the Netherlands. The surrounding rural areas, however, are entitled *krimpregio's* by the National government, meaning a population decline of at least 12,5% until 2040 (Rijksoverheid, 2019). Moreover, Groningen is a typical student city with around one in four being a student. The University of Groningen (RUG) welcomed 32,765 new students in 2019 (Rijksuniversiteit Student Portal, 2019), and the Hanze University of Applied Sciences contained 29,995 students in 2018 (Hanzehogeschool Groningen, 2018). Regarding the RUG, 20% of the staff, 60% of the PhD candidates, and 20% of all students are internationals from 120 nationalities, where they aspire a maximum of around 30% of all students being international as partly substitution of decreasing national influx (Rijksuniversiteit Groningen, 2019). The economy of the city has mainly been focussed on services and energy, such as the tobacco company Royal Theodorus Niemeijer, the distillery Hooghoudt, and the natural gas companies GasUnie and GasTerra. However, focus is also shifting to tourism, ICT services, and energy and environment, like the Hydrogen Valley in the HEAVENN EU-project (Rijksoverheid, 2019). Below, the cases are described according to the general and specific selection criteria.

Organic ULL: Stichting Paddepoel Energiek

Stichting Paddepoel Energiek (SPE) started as a group of energetic inhabitants who wanted to improve the sustainability in terms of energy neutrality in the neighbourhood Paddepoel, built in the 1960s, and to show what one can do with these old typical Dutch neighbourhoods. Not without success, since Paddepoel recently became partner in the EU-project Making City, though often associated as a not-to-be-in neighbourhood. Initially, they started as a citizen initiative with around 30 inhabitants in 2012, and in 2016 it became a Dutch stichting. Their main aim was to create an energy neutral neighbourhood in 2035, both technically and socially. Also, everyone could join and learn from their energy coaches about energy production and consumption. Moreover, they collaborated with the municipality of Groningen, educational institutions and (local) businesses that develop, for example, solar panels and improved the houses in the area. The period under study is from February 2016 until it stopped in October 2019 as in these roughly 3,5 years the initiative was a Dutch stichting.

Civic ULL: Urban Gro Lab

The Urban Gro Lab (UGL) is an initiative of the municipal department of urban development and the Faculty of Spatial Sciences at the RUG. The partnership wanted to use the city of Groningen as a living laboratory and experimental test ground for high quality research that focussed on spatial and societal challenges by bridging science and practise. Hereto, the lab tried to function as a source of knowledge and inspiration for the liveable city of the future by collaborating with urban stakeholders in a triple helix model plus involving citizens (according to their website). The UGL existed for almost five years and was purposefully intended to be and function as an ULL to integrate spatial research and innovation in a public-private-societal network approach. The period under study is from November 2015 until it stopped in November 2018 corresponding with the last three active years.

Strategic ULL: Welcoming International Talent

The Gentlemen's Agreement *Het Akkoord van Groningen* exists since 2005 and is an agreement between the province of Groningen, the municipality of Groningen, the knowledge institutes in the city (RUG, Hanze University of Applied Sciences and various intermediate vocational education institutes), and the University Medical Centre Groningen. It is a cross-party collaborative platform for joint coordination and decision-making including the biggest employers, educational institutes and local- and regional governments in the area. The stakeholders agreed upon envisioning a sustainable future for the city of Groningen as knowledge city by focussing on various themes, of which the focus here is laid on *Internationalising*. The policy document *Internationaliseringsbeleid Groningen 2017-*

2020, also called Next City Policy document, and the implementation program *International Groningen* both focus on the integration of new talent.

The Welcoming International Talent ULL (WIT) finds its basis within wider sustainability strategies. On EU level, the *EU Cohesion Policy* objective 1 (Strengthening research, technological development and innovation), 3 (Enhancing the competitiveness of SMEs) and 10 (Investing in education, training and lifelong learning) and *the Urban Agenda for the EU* regarding 'jobs and skills in the local economy' and 'the inclusion of migrants and refugees'. Besides, Groningen is a European Good Practise city in the *URBACT Welcoming International Talent Transfer Network* in which it shares the Groninger story with the cities of Bielsko-Biala (Poland), Debrecen (Hungary), Leuven (Belgium), Magdeburg (Germany), Parma (Italy), and Zlín (Czech Republic). On regional scale, various globalisation and demographical developments, like a declining population. And, on city level, the *Next City Policy document*.

Altogether, the ULL aims to make Groningen 'stickier' by attracting, retaining and integrating international residents and students better in the city while maintaining a high level of social cohesion and liveability. City Central focusses hereon for example. This is considered the most important common task in the area, because of the challenges faced and opportunities it brings like improved attractiveness and innovative capacity. Especially as many European mid-size university cities are becoming more international-oriented and multicultural to compete for and attract international talent to tackle their urban challenges. The period under study is roughly for three years, because of the entrance of the province of Groningen in the Gentlemen's Agreement in 2016 and the reassessment moment of the Internationaliseringsbeleid Groningen in 2017. In contrast to the Organic and Civic ULLs, the Strategic ULL is still functioning.

3.3 Ethical considerations and practicalities

Prior to the interviews, respondents received the **interview guide** and **interview permission statement** five business days beforehand by which respondents could prepare themselves or ask questions (see appendix). The interview guide concerns an introduction to the research, its objectives and research questions, and a list of questions and themes asked about during the interview. With the interview permission statement every respondent was asked to agree on recording the interview and the use of information and data collected. After each interview, transcriptions of the recordings were provided to the respondents for approval or any changes regarding anonymity and false interpretations of answers given. Therefore, a term of one week was given. To ensure anonymity, in this study personal information and names are left out.

#4 Results

The fourth chapter shows what has been found in the Stichting Paddepoel Energiek, Urban Gro Lab and the Welcoming International Talent ULLs in the city of Groningen. Findings are presented while comparing and discussing them according to current theoretical foundations and the conceptual model. Added is a cross case comparison and discussion about overarching themes that emerged from the case study.

4.1 Organic ULL: Stichting Paddepoel Energiek

Empirical findings; stakeholder roles, funding model and outcomes generated

The SPE follows a triple helix model, since they did not actively look for collaboration with students or knowledge institutes, although student interests were observed on own initiative. Regarding private businesses, continual contractual collaboration set the basis to provide technical expertise and funding. Conversely, the municipality was only involved when project proposals were hand in for funding, limiting the amount of regular and strategic meetings. Moreover, inhabitants were (in)actively involved periodically in frequencies of one year due to the project and funding set-up.

The funding model ranged up to six options. First, municipal subsidy was received per year per project proposal. Second, SPE received a percentage fee of the sales volume when a new customer was brought to the private businesses. Third, although not a revenue, inhabitants received discounts when improving their homes via SPE compared to on own initiative. Fourth, inhabitants made private investments as soon as they decided to install energy measures. Fifth, the SPE received a small income by marketing other local projects, such as Stichting 050 Buurtwarmte projects. This method faced monitoring issues, however. Sixth, sporadic funding was received from a local housing association for advising tenants about energy efficiency.

Two streams of outcomes are observed. First, hard measurable number of houses that were improved in technical sense, like better isolation. In three consecutive years this was around 30, 1 and 30 homes. Second, inhabitants and businesses learned about energy efficiency, consumption, awareness, and renovation experiences of typical Dutch houses. Both, inhabitants and businesses were the ones who benefitted the most as they learned about energy related aspects, enjoyed improved living comfort, and an increased customer base.

Theoretical analysis; stakeholder roles, funding model and outcomes generated

In Figure 3, the theoretical roles of Leminen and Schuurman plus their colleagues (2011; 2012; 2016; 2019) and the FMF of Gualandi and Romme (2019) are filled in for SPE.

The researcher role is not fulfilled, because there was no structural collaboration with knowledge institutes. Merely, students provided existing (and new) knowledge as provider. Citizens are enabler and user because of their private investments and being inhabitants and benefiter of the geographical location the ULL serves. The municipality is the enabler because of the funding and facilitation to the ULL and its activities. Private businesses fulfilled three roles by providing the ULL with expertise, contributing to the funding model, and benefitted from increased sales. External parties are

enabler and utilizer, because they gave financial contributions to the ULL while using it for their own marketing purposes.

Municipal subsidy was provided that aimed at public and private outcomes. On the one hand to contribute to the main ideology of the ULL. On the other hand, the specific number of houses that need to be improved. Moreover, people made private investments for the service to improve their homes and businesses gave discount via SPE. Cross Financing was made by external parties, like the housing association, that funded the ULL for side activities. It is assumed this value is more private than public as these organisations utilised the ULL for their own sake, while at the same time they fulfil a (semi-)public role in society.

Critically, not all funding streams link with theory. Obviously, private investments were made for individual benefits (PPS). However, public money (SUB) was provided while private outcomes were demanded, contrasting to literature. Rather than demanding for public outcomes to legitimise the municipal subsidy, the municipality in fact asked to deliver a minimum number of new customers to the private companies (although not reflected upon).

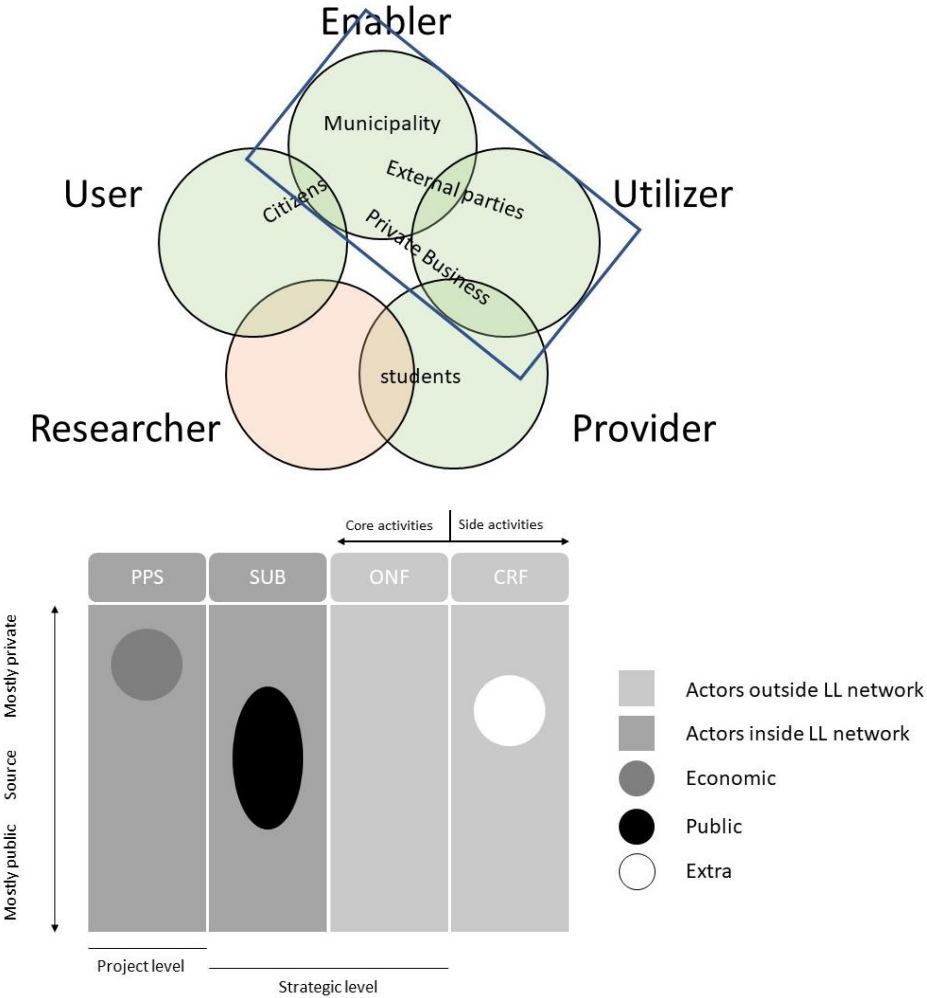


Figure 3: Theoretical stakeholder roles (above) and the FMF (below) in the Organic ULL (Author, 2019).

Impact creation

The SPE did not try to create impact beyond their initial domain. However, recently in the EU-project Making City in Paddepoel, the alderman spoke gratefully about SPE as they are one of the reasons it became possible to attract the EU-project. Also, an interviewee said: *“Well, I believe we put Paddepoel on the map”*, being aware of their impact, albeit not purposefully worked towards in advance. In terms of impact creation following Von Wirth et al. (2019), SPE scaled and translated. Scaling was observed when SPE became a Stichting in 2016 by widening its target group and translating was observed when other neighbourhoods showed interest in the SPE framework to gain insights for their own contexts. Both were, however, not initiated by the SPE itself.

Destructive loop?

While reviewing the interview transcripts, a ‘destructive loop’ was observed that might explain why the ULL fall apart during the Master thesis period. Therefore, it is elaborated in more detail.

In 2016, the municipality obligated SPE to become a Stichting in order to guarantee funding instead of remaining a citizen initiative. Therewith, SPE became more professional and administration in more detail was required, like having statutes by-laws. Also, they had to divide themselves as a group of equally people into a board and executive group, indirectly creating informal hierarchy.

Because of the project-based funding, SPE spend a lot of time on writing project proposals and guaranteeing funding, particularly municipal subsidy. Together with other activities and the voluntary character, the organisational capacity was limited. Hence, follow-ups on projects were limited or absent. A great lesson learned, for example, was about renovating synthetic plates which was much more work than calculated before. These lessons remained in the mind of involved actors, i.e. initiators and private business workers, and were not reported in any way. When asked how the SPE tried to quantifiable these lessons learned, they reacted: *“That is a very difficult point. What the municipality did so far in order to quantifiable things is to connect us with a professional organisation. The municipality believes that as soon as there are professionals around these volunteers, things will work out”*, which it does not. SPE namely experiences these lessons in contrast to the professional organisation.

Moreover, the ability to put lessons into words was limited due to two reasons. First, internal discussion between the board and executive team about the professionalisation and the less playful character of SPE as one becomes more professional. Indeed, professionalisation comes with legitimisation and continuity of the organisation. This was not an issue before being a Stichting. Second, legitimisation and continuity were not guaranteed, since SPE did not have the organisational capacity to do so and formulate a long-term vision due to the project-based operation and funding, and a lack of

municipal vision regarding the SPE. In the first year, for example, the SPE had to deliver targets; number of houses improved in terms of energy efficiency to legitimise municipal funding. Though, this number is never reflected upon neither by the initiators nor by the municipality.

Additionally, the 'psychological distance' to inhabitants became bigger throughout the years. However, inhabitants preferred personal treatment, which became evident during the second year of SPE. The municipality, then, connected SPE with Groningen Woont SLIM which did not use the personalised approach during consultation and implementation of energy measurements, like personal home visits. Result was that the number of houses improved dropped from 30 to 1 in two consecutive years as inhabitants did not prefer this working method, giving the impression the SPE failed.

4.2 Civic ULL: Urban Gro Lab

Empirical findings; stakeholder roles, funding model and outcomes generated

The UGL was run by a yearly changing lab coordinator; a municipal trainee whose job was to bridge theory and practise and to lead projects or experiments in the city. The UGL was project-based oriented around research projects, municipal cases or RUG-course projects in which, only if applicable and though valuable, private businesses, NGO's or inhabitants were involved in a consulting way. Regarding citizen involvement, frustration and suspicion was sometimes observed when citizens provided specific input while specific output could not be given directly. Indeed, various experiments were held but either linked with academic research or governmental demands, leaving out a clear picture about the UGL to outsiders and how to benefit from it.

The lab coordinators had a lot of freedom to shape the lab according to their own interest and faced urban issues. Besides, a strategic vision about the UGL and its role in city development remained superficial because it was a trial and error setting with no expectations upfront. Therefore, *"one of the characteristics of the entire process is that there were a lot of visions and expectations about what the UGL was"*, thus an interviewee. For example, in the *tunneltjesproject* it was experimented how a tunnel is experienced by people while using different lights and sounds in the environment. The RUG was very enthusiastic about a new way of looking to an abstract problem about feelings in the urban environment, while the municipality disliked the project because it was unmanageable in practise.

Funding came from the municipality in terms of the lab coordinator's salary and an annual project budget to organise activities. The RUG rather facilitated in hours of commitment, like giving guest lectures or attending municipal meetings. Moreover, the UGL was involved in EU-projects meaning they received funding, but also had to spend time on these projects leaving unclear whether the UGL was partly financed by them or participated fairly. An example is REFRAME Groningen.

Additionally, the UGL payed businesses from the project budget for their contribution or consultation to a project, and inhabitants participated voluntarily.

The UGL had three streams of outcomes that were public in nature and mostly applied to the RUG and municipality. First, both organisations got to know each other better, as explained by an interviewee: *“Some things are very immeasurable because it is often indirect. It is because you know each other, it might be easier next time to meet up with each other or maybe when a European project comes along or a question arises from policy; oh yes that person I have to go to or I know who can help me”*. In fact, two EU-subsidies have been attracted since then. Second, improved education and employability for students by providing cases for theses, internships, guest lectures or presentations at the municipality. Indeed, students reported that it was motivating for their learnings to see that their work was valuable for local stakeholders. Also, it is argued that students are able to discover in-depth knowledge about living in Groningen whereas current municipal monitors are often on zip code level. This potency is, however, never fully exploited according to the interviewees. Third, raising awareness and stimulating learnings about urban issues and policy through experiments. An example is the verbuurzamingsproject in which the energy usage of households was painted daily on their streets for a period of two weeks in order to increase understanding of energy consumption, environmental consequences and financial benefits.

Theoretical analysis; stakeholder roles, funding model and outcomes generated

In Figure 4, the theoretical roles of Leminen and Schuurman plus their colleagues (2011; 2012; 2016; 2019) and the FMF of Gualandi and Romme (2019) are filled in for the UGL.

The municipality and the RUG are enabler, because of their (in-kind) funding and support to the ULL. Additionally, the RUG is considered provider and researcher as they provided existing knowledge plus created new scientific knowledge in research projects. Citizens use the city and benefit from (physical) changes or experiments in the built environment. Market parties utilized the ULL and only participated for their own benefit.

The salary of the lab coordinator is considered as PPS to run and organise activities. The annual project budget is a subsidy as it was ‘freely’ spendable by the lab coordinator. The EU-subsidies are ONFs, although debatable whether they financed the UGL or not. Alarmingly, neither the lab coordinators nor the RUG employee interviewed were completely familiar with the funding model, still questioning where funding came from.

In literature, PPS is considered a funding stream on project level that aims for economic outcomes, while here it is a funding stream for the most strategic person in the ULL that aims for public outcomes. At the same time, strategic level funding is absent (apart from a ‘project budget’ that is indicated as SUB in this Master thesis) that might reflect the absence of a strategic long-term vision

about the UGL. An interviewee’s quote makes this very clear: *“I actually came up with my main activities and goals because there was no strong guidance or vision from the organisations”*. Hence, all interviewees responded that it was hard to tell what the outcomes were, to whom they applied, and whether these were successes or failures: *“Because the [overall] objective was not clear, you never really knew what a success was”*. Also, two interviewees recorded that while student research is a great source to start discussion between municipal and university staff, the real potential to integrate this in for example policy remains unclear.

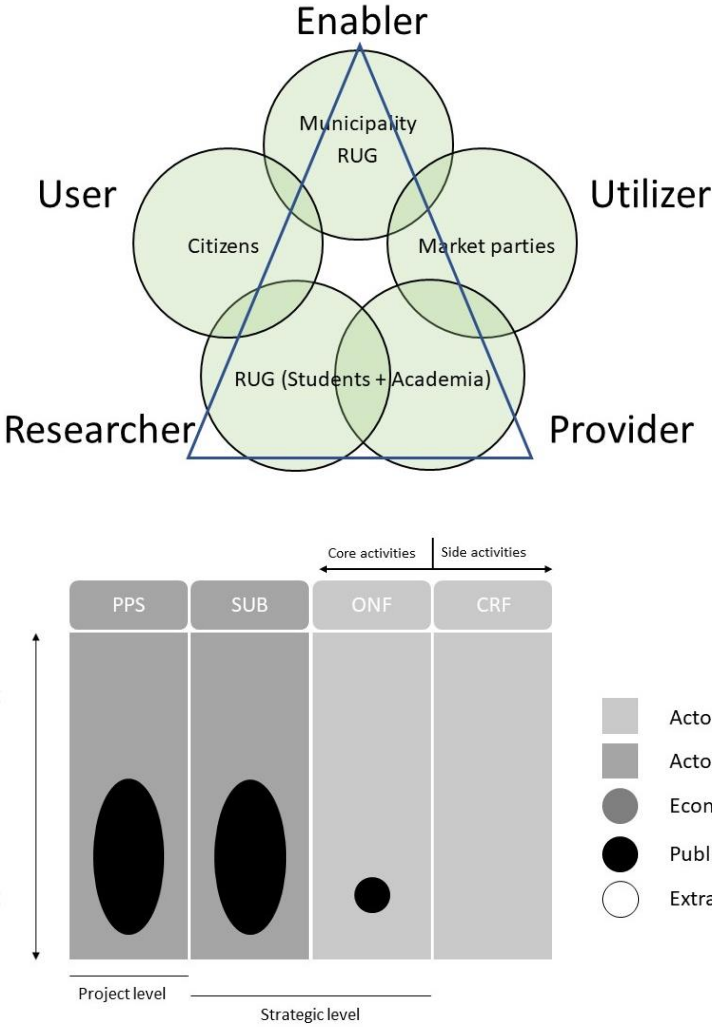


Figure 4: Theoretical stakeholder roles (above) and the FMF (below) in the Civic ULL (Author, 2019).

Impact creation

The UGL tried to create impact by online and offline communication tools, like their social media channels and participation in local events or projects in the public space for visibility. Examples are the *#StudentTalks*-sections on their website and *De Bank voor iedereen!* project in which a bench was placed on various locations in the city to gain insights in where citizens need more sitting

opportunities. This way people became aware of current activities plus felt connected to shaping the city of Groningen as ownership and enthusiasm was created and knowledge was transferred. Besides, the UGL never had a physical place in the city, though in 2013 it was planned to have such a place at Zernike Campus.

Following Von Wirth et al. (2019), the UGL tried to embed lessons learned in local structures. Outcomes were namely spread out to people in Groningen; the initial geographical location that the ULL served. One could argue this is scaling as well, since more people became familiar with the UGL and are mobilised to participate in future experiments. Importantly, impact creation remained sporadic in nature, because of the lack of goals and expectations that created an atmosphere in which it was unclear what direct and indirect outcomes were that could be of impact. Argued by the interviewees is that impact was created by products made, networks built, experiences gained and improved education that might be beneficial to stakeholders somewhere.

Destructive loop?

While reviewing the interview transcripts, a 'destructive loop' was observed that might explain why the ULL stopped in 2018. Impact creation was namely limited because follow-ups on projects lacked. Three interchangeable points are elaborated in more detail.

First, the rotation of lab coordinators made it hard to operate structurally in consecutive years, both process and content-wise as time passed by for installing oneself and getting familiar with the UGL and stakeholders involved. Second, a lack of organisational capacity limited evaluation and monitoring possibilities. Lab coordinators ran the UGL solely, creating *"a dilemma that you were dealing with. You want to do so many things, but you only have limited time. These kinds of things could have happened if you had been working a little longer or you might have worked with a second person"*. Third, a lack of institutional embeddedness frustrated in various ways the functioning of the UGL. One of them is the alignment and timing with internal municipal activities and procedures as some reports ended up on the shelf, because the topic under study would be discussed in the coming two years. Also, academic researchers may set their own research agenda, because of the academic freedom. Hence, participation and collaboration are only done when interests link with the UGL agenda, and vice versa. However, there was no strategic long-term vision or UGL agenda. Therefore, people directly involved in the UGL sometimes felt it was a main task to them, whereas it was a side task to further departments within both organisations. The other way around, structural embeddedness in internal departments could not be guaranteed because the focus of the UGL could change each year, because of the install of a new lab coordinator.

4.3 Strategic ULL: Welcoming International Talent

Empirical findings; stakeholder roles, funding model and outcomes generated

Akkoord van Groningen

The Akkoord van Groningen functions as a joint-voice of the Akkoordpartners in Groningen towards other regional- and National innovation programmes or stakeholders, like the Ministry. The Akkoordpartners hereto structurally meet to set agenda for various themes that are organised in theme groups that include specialists of the Akkoordpartners. Across these themes, lobbyists ensure that current projects align and support with one another.

Funding comes from a yearly pre-planned budget that is provided for 50% by the municipality and 50% directly proportional by the other Akkoordpartners. It functions as a non-juridical shared-funding program for projects that cannot be financed individually. It is characterised by trust, short communication lines and reciprocity due to the splendid isolation argument⁴ and agreed abstract formulated inter-organisational objectives.

The outcomes of the Akkoord van Groningen are for everybody. There is no pre-targeted audience. As an interviewee explained: *“These [outcomes] are ultimately for the innovation climate and business climate of the city and region of Groningen. And yes, who can benefit from that? The people who can find a job here ultimately and, in that way, lead a beautiful life”*. Critically, while Akkoordpartners agreed on abstract goals, discussion exists on project level whether projects indeed contribute to the abstract goals. Here, friction is observed between concrete results and strategic envisioning. Especially, these concrete results and successes are important to ensure funding for the next year according to an interviewee. The 4th place during the Top Dutch Solar Racing for Groningen and the International Welcome Centre North is such outcomes.

URBACT Transferability Network ‘Welcoming International talent’

Groningen became an URBACT Good Practise for welcoming international talent on integral and participative city development in 2017. The Transferability Network is an experiment in order to structurally exchange knowledge between cities. Hereto, transnational thematic meetings are organised in each of the participating cities on, for example, the labour market. Subsequently, cities bring their inspirations back home and implement them in their own contexts and report them in a transfer diary to capture learnings. The main goals are 1) to intervene in each other’s policies and 2) to structurally transfer knowledge. Regarding progress so far, the experiment is successful on policy

⁴ The splendid isolation argument argues that Groningen has relatively low competition regarding cross sectoral collaboration compared to other Dutch cities that are much closer in proximity to one another, like the Randstad area.

interventions, because exchanges allow for different perspectives at ones' city to trigger learning in a specific topic. However, the effectiveness of structured learning methodologies is not yet clear as the experiment is still going on. It has yet to be discovered what methods are most appropriate. The URBACT Transferability Network is about impact creation while translating the Groninger experiences to other contexts (Von Wirth et al., 2019).

The project is funded for 70% by the European Regional Development Fund and 30% own contribution fairly shared between organisational development and internationalisation policy. This is possible because municipalities are historically developed as closed organisations whereas there is a need to change their role more rapidly and embrace learning to tackle current urban challenges according to an interviewee. Hence, it was not hard to gain the financial and political support in Groningen, because the investment was relatively low, municipal goals aligned with EU-goals, and already in-budget reserves for EU-projects. Critically admitted, a Transferability Network would not have been set up by own initiative as funding would become problematic. As formulated by an interviewee: *"The value of knowledge is certainly considered high in just one random city in Eastern Europe, but the costs cannot be afforded. So, the value is present, but there is no budget for it"*. This, at the same time, highlights the importance of EU funding for these European cities to be involved in ULLs and learning settings.

Additionally, trust and openness should be guaranteed for a learning atmosphere; one of the distinguishing points of ULLs. Transnational meetings then become most fruitful: *"Regarding experiments you must accept that there is an effort obligation, but not an outcome obligation. Otherwise it is not an experiment. So, if you want a maximal learning effect then you must ensure that there is such confidentiality that people dare to face their own uncertainties and weaknesses together with others"*, thus an interviewee.

City Central

City Central is a project that focusses on the integration of new inhabitants in and the social cohesion within Groningen. The context it operates in is in the field of increasing diversity in cities that can lead to feelings of disruption and alienation in cities. To achieve its objectives, City Central organizes activities, communicates a lot (through social media), and stimulates learning about the concept of internationalisation. Hereto, it collaborates with governments, educational institutions, and users themselves to set up an agenda. Collaborating with (local) businesses is looked for in the future, although Groningen has relatively small businesses limiting economics of scale opportunities. City Central creates impact in the embedded way (Von Wirth et al., 2019), because it aims to increase awareness at people and institutes and to learn them about internationalisation in the city of Groningen.

The funding model of City Central is diverse. It receives yearly subsidies from the Akkoord van Groningen. Additionally, they generate incomes around organised events, like their ticket and shop sales, and by facilitating other third-party events at their location. Though, these are not sufficient on their own. Currently, they are in a trajectory to get National subsidy and strive to apply for EU-subsidies in the future. Last, volunteers help to organise and execute events, like My Local Friend or Fiets Friend. Critically, the yearly subsidies are highly important, but also limit their impact: *“We cannot really make long-term plans, because it is decided financially on an annual basis”*. This is understood, however, because of the austerity measurements at the municipality and a re-organisation of the Akkoord van Groningen.

Outcomes generated are mostly social and apply to participants; friendships, knowledge transfer between cultures and more awareness about internationalisation and its complexity within city contexts. City Central does evaluate projects in a qualitative manner, whereas proper quantitative evaluation is not yet used since projects are too small-scale. In order to become bigger in size and impact they argue for multi-year funding and time to evolve and accumulate learnings to implement a more structured way of operating. Besides, its physical location(s) turned out to be very important to make internationalisation visible to people, as a place to meet and communicate, and as place to encourage cross-generational contacts during events.

Theoretical analysis; stakeholder roles, funding model and outcomes generated

In Figure 5, the theoretical roles of Leminen and Schuurman plus their colleagues (2011; 2012; 2016; 2019) and the FMF of Gualandi and Romme (2019) are filled in for the WIT.

The Akkoordpartners are enabler and utilizer, because of their main funding and long-term support to the ULL, and as main beneficiaries of long-term results. The user-role is in principle everybody in the city as explained by an interviewee. More specific, here it is indicated as Internationals and Stadgers that benefit from better social embeddedness of International talent in the city of Groningen. City Central (and stakeholder they collaborate with, like the RUG and Studium Generale Groningen) are provider and researcher as they inform and start discussion about Internationalisation. In fact, an interviewee argued that these projects fulfil an executive role of the Akkoordpartners that, indeed, link with the funding model. The URBACT Transferability Network is left out in the stakeholder roles because it focusses on lessons diffusion rather than organising local projects in the ULL.

The Akkoord van Groningen is financed for 50% by municipal subsidy, and 50% by investments of other Akkoordpartners covering SUB from public and private bodies. The URBACT Transferability Network is strategically financed for 70% by ONF and 30% by municipal PPS. City Central is financed in various ways. Most important is the municipal subsidy (from the Akkoord van Groningen). Thereby, tickets and shops sales (PPS) and third-party payments (CRF) add to the municipal subsidy.

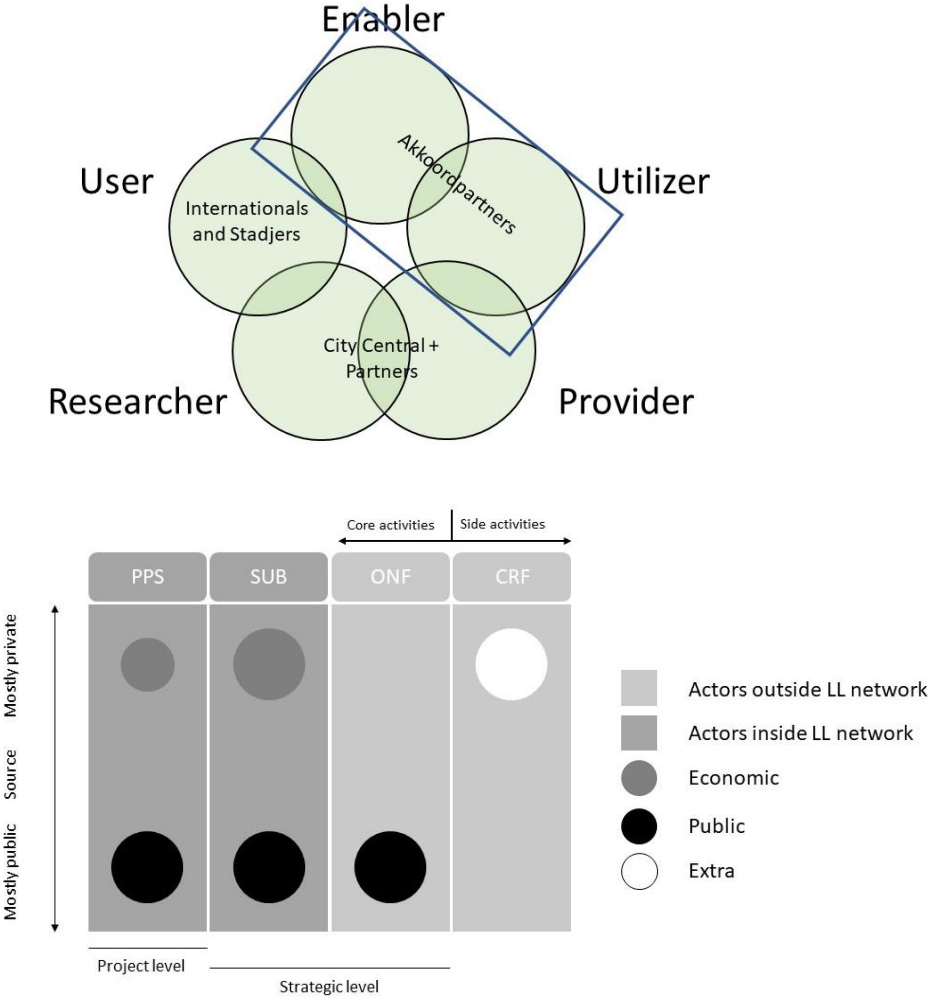


Figure 5: Theoretical stakeholder roles (above) and the FMF (below) in the Strategic ULL (Author, 2019).

The outcomes of WIT are mostly directly public and indirectly economic in nature (Baccarne et al., 2014; Gualandi and Romme, 2019), meaning they contribute to the Akkoord van Groningen to improve the business climate and innovative capacity in the long run. Thereby, in the short-term and as explained by an interviewee, the: “most important value is to increase the social embeddedness of internationals”, that can be the amount of friendships or learnings about other cultures. This corresponds with the funding model as most funding is provided via public money added with private investments. To recall Marvin et al. (2018), strategic ULLs are financed by a lump sum in a relatively short term. It seems this applies to the Akkoord van Groningen as it is funded by one million euros per

year shared over six thematic groups. Contradictory to the literature, (semi-)private Akkoordpartners provide SUB to the ULL. One would not directly expect this, because private money is first invested for public value while seeking economic value in the long-term.

Impact creation

Regarding impact creation, the WIT embeds outcomes in local structures and translating them to different contexts (Von Wirth et al., 2019). Scaling is not addressed as this is already done up to provincial level and the ULL tries to improve the urban environment for everyone within the focus of the Akkoord van Groningen. Embedding is found when integrating lessons in, for example, policy. However, to date this is only done in a qualitative manner instead of quantitatively. Translating is found in the UBRACT Transferability Network in which lessons are shared with other EU cities. The other way, Groningen learns lessons from these cities and their perspectives on city planning that may be imbedded when the network will be finished.

4.4 Cross case comparison and discussion

In addition to the individual case study results, cross case analysis is done to find out whether overarching themes exist within the ULLs. Therefore, topics cited by interviewees with different backgrounds and observed in more than one ULL are discussed.

In each case a core group is identified that is most responsible for the funding and operation of the ULL, see the blue contours in Figure 3, 4, and 5. Mainly, governments and / or academia are included herein plus typical actors that are important to the set-up of the ULL, like private businesses in SPE. In essence, these ULLs thus contribute to public policy and academic interests. Only specifically for businesses when these are needed due to their expertise. In SPE and WIT, the core group existed out of the enablers and utilizers. In the UGL, the core group existed out of the enabler, researcher and provider stakeholder roles aligning with the partnership constellation. Additionally, the three-layer model of Schuurman (2015) can be observed in the WIT since different political layer stakeholders are included herein. It is, however, neglected in the analysis, because it is not integrated in the conceptual model.

Besides, municipalities are in each case involved in the core group that confirms the observation of Scholl and Kemp (2016) that municipalities are often involved stakeholders in ULLs and that partly initiate and drive activities. Moreover, the found involvement of utilizers in ULLs links with the current debate of utilizer involvement in ULLs as discussed in chapter 2, and whether it is hoped for or not. At the same time, it highlights the important contribution that private businesses might play in ULLs, especially because of their funding possibilities and expertise provision.

Mention worthy, interviewees from the UGL and WIT said that university funding is harder to use in ULLs. Dutch educational funding is namely based on quantity instead of quality as educational institutions get funding by the National government per graduate student and they are by law limited in funding 'experiments' in that their core task is doing scientific research. Meanwhile, governmental stakeholders mention a clear political will. Indeed, despite austerity measurements, the Akkoord van Groningen still received new funding. Thereby, almost every interviewee mentioned (in)directly that the role of civil servants needs to change, because they handle strict justification of payments. Above all, municipalities are in a transition period as they get more responsibility in different policy field the coming years from the National government. The Environment and Planning Act (Omgevingswet) is an example thereof. Both, the university funding opportunities and the discussion about political will and the role of civil servants are in line with the SWOT analysis of LLs by Guzman et al. (2013).

Another point of interest is the accountability of money spend as found and discussed by Astbury and Bulkeley (2018). Whether on local, city, regional or EU-level, cases mention that they feel pressure to justify their expenditures and to ensure they meet investment criteria from financiers, especially in SUB and ONF. To the fore comes a tension between financiers and users ULLs serve. Spending a lot of time on keeping financiers happy, comes at the expense of quality for users. Visa versa, spending a lot of attention on users can create incomplete pictures to external financiers about what the ULL does and achieves.

Further, while Voytenko et al. (2016) hinted this before, a long-term strategic vision improves the ULL operation. Particularly, the SPE and UGL lack of a clear vision. It is even mentioned that municipalities need to come up with a policy regarding citizen initiatives. Frustration namely starts when local communities actively engage themselves in policy areas that the municipality is already concerned with. It is expected that municipalities then will either involve themselves directly or ignore initiatives completely, like connecting volunteers with professional organisations or stop funding provision respectively or creating scenarios as brought up by Savini and Bertolini (2019). Either way, a long-term strategic vision also contributes to knowledge accumulation and the institutional embeddedness of ULLs to manage and align expectations and objectives. Then, evaluation becomes more important to reflect whether experiments were useful or not. This is not yet done because it was sometimes not known what to work towards. Advocated by interviewees, especially those who organise activities, in-between successes and outcomes must be included and celebrated to ensure motivation of stakeholders involved. Leminen et al. (2017) call these anchor points.

Outcome-wise, increased social networks and mutual learnings were found in all cases and indicated by interviewees, whether or not focussed on in advance. These are clear outcomes, though not directly visible or measurable. In fact, Szejnwald Brown and Vergragt argued that both are of immense importance if ULLs want to contribute to regime transitions (2008). So, while ULLs may stop

or experiments are seen as failures, they still bring outcomes that one might benefit from in the future or that potentially start wider transitions in provision systems regardless of which type ULL.

Funding-wise, the SPE is mostly financed by private methods, the UGL by public methods, and the WIT by both public and private money. It seems a combination of both is most healthy, whereas choosing one of both can be a 'dead panel' since both SPE and the UGL stopped. CRF is found to be complementary to other main funding streams aligning with the FMF (Gualandi and Romme, 2019). Moreover, strategic ULLs seem most eligible to receive ONF that might be due to legitimization reasons as the geographical location they serve is bigger compared to organic or civic ULLs, and therewith the impact creation. At the same time, however, their place-based embeddedness turns out to become less relevant (May 2018).

Impact-wise, observed is that scaling (Von Wirth et al., 2019) is not used. In the SPE and the UGL it is argued that their impact could be seen as scaling, however, not initiated by themselves. In the WIT, scaling is not present as the ULL is already 'scaled' to a strategic ULL including provincial and regional size. Moreover, embedding (Von Wirth et al., 2019) is not included in the organic ULL, since it is already active on the lowest level scales; in neighbourhoods with local people. Because of the destructive loop, outcomes were not embedded in other organisations while this potential might be present in organic ULLs according to Astbury and Bulkeley (2018) and Burch et al. (2018). In the UGL, no translating (Von Wirth et al., 2019) is observed. This might be the case since civic ULLs are organised around partnerships on city level (Marvin et al., 2018), meaning relevant city stakeholders and areas are already included in the ULL. Still, one could translate structures to different contexts, though it is not a goal in itself. So, making impact in terms of translating seems to depend on interests from outsiders, which is confirmed in SPE and WIT.

#5 Conclusion

The fifth chapter is organised in three parts. Firstly, a general conclusion is drawn while answering the main research question. Secondly, implications for theory and practise are given in order to improve the triadic relationship and the potential of ULLs to contribute to transformative changes. Thirdly, limitations of this Master thesis are presented.

5.1 Answering the main research question

While the acceleration and normalisation of ULLs in city spheres proceeded faster than the development of an understanding of the nature and implications of the concept, a critical research gap was identified. Instead of looking to the functioning of ULLs that is already widespread among existing literature, the Master thesis focus is on the triadic relationship between the stakeholder roles, funding model, and outcomes generated plus its link to the ability and potential of ULLs to contribute to transformative changes. In other words: to make impact. Hereto, the research question is: *How can ULLs contribute to transformative changes in the urban environment and society by gaining a better understanding in the relationship between their funding, stakeholder roles and outcomes?*

Based on the results from this study, it is not so much individual aspects or characteristics, like their funding only, that can make a difference whether or not ULLs create impact. To the fore comes that it is the historical nature and distinctiveness of ULLs, and therewith trust building between urban stakeholders involved that is the crucial base for impact creation. Historically, LLs have been used in corporate contexts for business development purposes. Hereto, experimentation can alienate investment risks and provide new short-term insights for better business and product development including mass production processes. Since the 2008 Global Economic Crisis, the LL methodology has been 'copied paste' into the urban sphere for similar objectives. Critically, the private versus public contexts are highly important and very differently to each other in this concept; either it is used for individual private outcomes that can be integrated in development processes or for collective learnings about doing urban development that is inherently an ongoing long-term process for the public good and society. Thereby, the study shows that individual living lab practitioners and the current academic community are aware of the great potentials that are inherent in ULLs and that they do create valuable outcomes; most of them public and collective in nature, such as established learnings and increased networks. However, while being aware of its benefits and potentials, it is the historical ideology of LLs and a continuous search for limiting individual political and financial risks that hinders the potential of ULLs to contribute to transformative changes in socio-technical and socio-ecological systems. Trust building among stakeholders in ULLs may overcome this hurdle to exploit the potency of ULLs and to achieve urban sustainability.

5.2 Implications for theory and practise

Regarding the current theoretical debate on how to overcome the issue between funding, stakeholder roles and outcomes, we have seen two positions that one can take: a change in mindset towards shared ideologies, and re-viewing agency and power (see paragraph 2.3). This Master thesis confirms that opportunity lies within both, while considering the first one as most important and the

second one is a follow-up therefrom. Additionally, this Master thesis provides evidence to complement the shared long-term ideology with individual short-term wishes and needs, and the concept of power with the concept of justification. Both positions can be discussed when zooming in on the conceptual model.

Regarding funding and outcomes, the Funding Mix Framework of Gualandi and Romme (2019) is supported. In fact, the FMF is a shared model in itself as it integrates different ways of funding with different types of outcomes. Moreover, strategic level funding (SUBs and ONFs) can provide a long-term base for public or collective outcomes, while project level funding (PPS and CRF) can add as short-term injections for economic or individual outcomes. Evidence therefore is for example found in SPE and WIT, showing that a common value is complemented with individual outcomes. Respectively, envisioning an energy neutral neighbourhood plus providing room for improved individual living comfort and raising awareness, and making Groningen stickier plus leaving room to work on thematical projects.

Regarding stakeholder roles, power relations are found between them. This study shows that financiers hold more power in ULLs, especially when looking at SPE and the UGL. Also, a tension is observed for ULLs to serve their financiers versus their users. Besides, municipalities are the most important financier in ULLs. So, one can say that municipalities hold most of the power. However, at the same time, this study shows that it is not so much the power itself, but rather the justification of money spend that creates power dynamics as ULL practitioners who organise activities feel a constant pressure to make sure expenditures are safeguarded. Therefore, power is the result of not meeting justification criteria of individual financiers, especially by SUBs and ONFs as these are public money streams. Thus, viewing power as distributed property (Bulkeley et al., 2016) may overcome this justification pressure when integrated in a shared ideology (and funding model) and a differentiation of power dynamics per project is allowed for.

Additionally, the theorisation of the ULL typology in organic, civic and strategic ULLs needs reconsideration and improvement in two ways related to their impact creation. First, their interlinkages need to be found particularly when they are investigated in one and the same geographical context as this study does. While core groups have been identified in individual ULLs, it is important to gain more insights in whether core groups in lower level ULLs (organic / civic) are at the same time the outer-circles (Puerari et al., 2018) in higher level ULLs (civic / strategic). This way, it may become possible as well to connect the ideology of the three-layer model of Schuurman (2015) to the constellation of the three types of ULLs as provided by Marvin et al. (2018). Second, there is not yet a clear picture about different types of ULLs creating different ways of impact; scaling, translating and embedding. This Master thesis has shown that scaling can be done upwards (from organic to strategic ULL), that embedding can be done downwards or horizontally (from strategic to organic ULL, or into

other sectors or disciplines), and that translating depends on interests from actors outside the ULL network. A better theorisation of interlinkages between organic, civic and strategic ULLs provides insights into what type of ULL is best suitable to create impact either in a scalable, translatable or embedding way.

Regarding the practise of ULLs, five implications are described that are based on this Master thesis. These implications are meant as recommendations for further action and can serve as starting points for trust building among stakeholders involved. Note that these implications link with one another and may include doing research as well.

First, more research to funding opportunities, agendas and models is necessary. Shown in this study, opportunity lies in a robust long-term funding base complimented with more ad-hoc short-term funding streams. Subsidies, out of network funds, and research funding can provide this long-term base when integrated and embedded with ULL processes, since they are issued for multiple years with all the associated benefits, such as a long-term strategic vision or the accumulation of activities. Nonetheless, inequality to access of funding is observed, especially between different EU or National contexts. In fact, it is argued by Gualandi (2019) that grant provision procedures are based on contexts in which systems are already in place. Because of the historical development path of ULLs, contexts without systems are left behind while ULLs provide great opportunity for them to fix these systems in the first place. Moreover, application formats often include an outcomes section to be filled in, whereas this is per definition not known in ULLs due to the experimental character. **So, grant providers on various political levels are challenged to rethink and redesign their selection criteria and procedures for subsidy approvals.**

Second, the ULL community needs to continue debating about agency and power of different stakeholders on different moments in ULLs. When two out of three cases in this study stopped, the fact that funders in ULLs do have more power to set agenda, or chose not to, is highlighted (see also implications for theory in this paragraph). In contrast, the SPE and WIT provide evidence to stimulate a personalised approach to tackle local urban challenges, especially when serving user or community groups. Moreover, in each case it is observed that the role of civil servants does not align with the ideology of ULLs. **Thus, municipalities as they are often involved stakeholders in ULLs (Scholl and Kemp, 2016) are challenged to empower initiators politically.** Recommended therefore is to rethink the concept of power and to set up a policy regarding citizen initiatives, particularly for organic and civic ULLs as those are active on topics that municipalities are often already concerned with, while strategic ULLs seem appropriate to search for novel innovation development paths.

Third, ULL outcomes become apparent in the long run, while efforts and investments are made in the short term. The Akkoord van Groningen shows that abstract agreement on long-term objectives among stakeholders can facilitate impact creation. Conversely and confirmatory, SPE and the UGL

show that a lack thereof does not facilitate impact creation. Importantly, in-between outcomes should be celebrated to keep track of the progress forwards and to ensure enthusiasm and motivation at stakeholders involved, also described as anchor points by Leminen et al. (2017). **The challenge for ULL stakeholders ahead is to view the level of abstract in objectives as facilitator in collaboration.** This, by envisioning strategic shared long-term goals while providing room for (partly) individual visible experimentation and outcomes on project level. Indeed, as demonstrated by Trencher, Geissler and Yamanaka: *“without a common purpose and set of values, a lab ... risks breaking down into a geographically and temporally scattered portfolio of research and pilot projects that are forgotten once funding runs out and initial momentum wavers”* (2018, pp. 184-185).

Fourth, **a search for new ways to measure effectiveness of ULL activities** and to indicate them as successes or failures is crucial as ULLs serve the public good; both for stakeholders involved as well as civil servants to account for efforts and investments made. In every case increased networks and learnings for stakeholders were clear outcomes, like the UGL partnership or SPE community building. Indeed, Szejnwald Brown and Vergragt argued that both are of immense importance if ULLs want to contribute to regime transitions (2008). Still, it seems from this study that stakeholders do not view these outcomes as effective or impactful in the short term, creating frustration. Crucially, room must be included for qualitative and quantitative evaluation activities in ULLs to assess their effectiveness, both on collective and individual level.

Fifth, **the ULL community is challenged to clarify in more depth what defines ULLs and think more critically when one is needed**, not to mention Schuurman (2015) who describes the concept as an *“everything is possible concept”* (p. 201). For example, the UGL was meant to be an ULL in a triple helix model. However, in practise it was organised as a double helix partnership to improve collaboration in the city and to connect theory with practise. Is an ULL needed, therefore? Or is an ULL then simply set up for marketing purposes and alignment with a fashionable trend in cities today? In fact, the ‘abuse’ of the term ULLs is being discussed by Scholl and colleagues (2017)⁵ after the URB@Exp project in their epilogue *The end of labs or the labification of everything?* in which a restricted use of the term is advocated for, and that *“they are certainly not a remedy for each and every challenge cities may face”* (p. 183). One must understand that when the concept is used whenever possible, a fragmentation of perspectives on the concept follows that hinders the applicability in practise and therewith its potential to contribute to urban sustainability. In contrast to

⁵ Original: Scholl, C., Ablasser, G., Eriksen, M.A., Baerten, N., Blok, J., Clark, E., Cörvers, R., Domain, W., Drage, T., Essebo, M., Graham, T., Hillgren, P-A., Hoeflehner, T., Janze, A., Kemp, R., Klingsbigl, G., Köhler, W-T., de Kraker, J., Landwehr, A., Leitner, G., Nilsson, P-A., Pelin, O., Rijkens-Klomp, N., Seravalli, A., Simons, J., Vandermorsten, G., Wachtmeister, A., van Wanroij, T., Wlasak, P. and Zimmerman, F. (2017).

the UGL, both SPE and WIT were not meant to be labs by their initiators. Notwithstanding, they all meet the theoretical selection criteria. The ENoLL organisation may help to overcome or prevent such fragmentation.

5.3 Limitations of the Master thesis

The Master thesis has three main limitations that are important to be aware of. Each of them is explained below.

Groningen as context. Question remains whether any outcomes of the Master study might apply to different contexts such as bigger cities or different countries. The study objective was to explore ULLs in more detail. Hereto, generalisability was no precondition. Despite, outcomes of this study should be applied to other contexts to learn about the topic under study and improve our understanding of ULLs. The Master thesis did not include or address how structural learning diffusion or application in this sense might look like.

Three cases; one Organic, Civic and Strategic ULLs. The Master thesis encompasses three cases in the city of Groningen. More case studies and research between types and within individual types is needed to improve the understanding and the potential of ULLs to contribute to urban sustainability. Besides, two out of three cases stopped functioning because of the issue under study. This might be a general struggle for the issue under study, because ULLs that still operate do not face any financial-outcome conflicts. However, further research should also focus on and include exact those cases that are already in place for a very long time to learn about success factors for long-term operation and the ability to contribute to transformative changes.

Diversity and number of interviewees. It is important to keep in mind what people is spoken to during the data collection process, because various perspectives give different views on the same issue. This should not be underestimated as skewed results can be created. Also, the UGL and SPE stopped before and during the Master thesis research period, which hindered the interview planning and process. Most interviewees' backgrounds are in the semi-public and governmental sector. Therewith limiting the points of views on ULLs from the private sector and user or community groups. Additional research must include all perspectives of the quadruple helix model to ensure a holistic approach, perspective and result.

#6 Reflection

Supported by a famous quote from John Dewey, American philosopher, psychologist, and educational reformer, that *“We do not learn from experience...we learn from reflection on experience”*, this chapter reflects on the Master thesis process, personal decisions taken, and events happened that provide learnings for the future.

A first clear lesson, mainly while working on the theory part of this Master thesis, was about my broad interest in the ULL concept. This resulted in a literature review of 25 pages and a conceptual model that contained 8 variables. Way too much people told me. Therefore, I limited my scope quite a bit to 12 pages including 4 main variables for empirical research. Admittedly, not that efficient though as time was spend on this re-focussing and re-writing. So, the demarcation of the research scope is very important to keep track of the process and the estimated amount of activities in a given time needed. Besides, talking, brainstorming, and discussing your work with fellow students and professionals helps enormously therewith as other perspectives are brought to the fore. Next time, I will discuss my ideas earlier and more often with others.

Subsequently, I decided to transcribe and analyse my semi-structured interviews manually, without using digital analysing tools, like NVivo. However, I believe that by doing so I now understand the process of transcribing, analysing, coding and memoing in a better way. Indeed, a lot of time has gone in this process and, unsurprisingly, codes could be classified under the topics of funding, stakeholder roles, outcomes and impact; exactly those themes that formed the basis of the semi-structured interviews. Digital software might shorten this time period and provide other additional explorative outputs. I am looking forward to using digital tools in the future.

Moreover, I decided to become a student research assistant in the last few months of my student life in the STAYin(g)Rural research project at the Faculty of Spatial Sciences in the department of cultural geography. I did so, since I never had been a student research assistant before and many fellow students told me that it is equal to a lot of fun, meeting new friends and helps you to understand processes behind doing scientific research. As doing a PhD in the future is not yet off the table, I also wanted to have 'a look beyond the scenes' of a current PhD trajectory to see what it entails. I am glad I became one.

By surprise, in October 2019, I became aware of the 2nd Peace Summit of Emerging Leaders 2020 organised by the Humanitarian Affairs Asia at the United Nations Headquarters in Bangkok, Thailand. As ambitious as I am, I applied and got selected to think about Peace Building alongside with 499 other emerging leaders in their field and how peace might help us solve global (urban) challenges together. I am really looking forward to this unique opportunity to learn more about *Peace Building* and become a United Nations Peace Ambassador for 1 year. Because this conference is in February 2020 and I combine it with a backpack tour throughout Thailand, I want to finish my Master thesis before. Previously, this was not that hard of a deadline as I would prefer quality above finishing in time, which I still do.

Rather ironic, the focus under study in this Master thesis is limiting the potential of ULLs to contribute to urban sustainability and has created situations in which ULLs decided to stop completely. Whereas I knew that the UGL already stopped functioning in 2018, the SPE stopped functioning and

fall apart during the Master thesis period and data collection process. This exactly 'thanks to' the topic under study and power issues related to it. Therewith, my initial ambition to conduct individual interviews combined with focus group discussions about the individual interview outcomes had to change. Hence, the pre-planned interview period shifted and extended.

Unfortunately, I lost some of my motivation because SPE and the UGL stopped before and during the Master thesis period. On the first meeting with my supervisor, she asked my ambition as a grade for the Master thesis. I said to her as high as possible since I viewed the Master thesis as a kind of training for a PhD trajectory. I wanted to learn a lot about doing scientific research, but also about the ULL concept itself as I am very passionate about it. Whereas my ambition was (very) high in the beginning, it became less while working on the Master thesis, because of reasons both related to the research approach as well as personal decisions taken. I realise that the theoretical part is qualitatively better than the empirical part, therefore. In other words: the thorough theoretical base would deserve a better empirical investigation.

In short and like always, everything went differently as expected. Despite some things did not go as hoped for, I am convinced that I have learned a lot about doing scientific research and about the ULL concept in practise. Especially as I have worked and brainstormed with many highly educated professionals in the field of ULLs, i.e. during the visit to the Open Living Lab Days 2019 Conference; an experience and unique opportunity that I wanted to grab as a graduate Master student at the RUG as well. And because I did quite many things in the last couple of months of my student life, I now know that another lesson for myself is to prioritise activities and foci out of my broad interest about the way we shape our world, cities and rural areas today. With all of us.

Word count: 17.547 (plain text)

#7 References

Chapter seven provides a complete list of resources consulted to come up with the content in this Master thesis. The list is based on the type of resources used. Journal articles, conference proceedings, books and loose chapters, theses and doctoral dissertations, online documents, websites, and workshops, brainstorming and webinars; all of which lie at the basis of this study.

Journal articles

- Almirall, E. and Wareham, J. (2008) 'Living Labs and Open Innovation: Roles and Applicability', *Electronic Journal for Virtual Organizations and Networks*, 10(3), p21-46.
- Almirall, E. and Wareham, J. (2011) 'Living Labs: Arbiters of Mid-and Ground-Level Innovation', *Technology Analysis & Strategic Management*, 23(1), p87-102.
- Almirall, E., Lee, M. and Wareham, J. (2012) 'Mapping Living Labs in the Landscape of Innovation methodologies', *Technology Innovation Management Review*, 2(9), p12-18.
- Arnstein, S.R. (1969) 'A Ladder of Citizen Participation', *Journal of the American Planning Association*, 35(4), p216-224.
- Bergvall-Kåreborn, B. and Ståhlbröst, A. (2009) 'Living Lab: An Open and Citizen-centric Approach for Innovation', *International Journal of Innovation and Regional Development*, 1(4), p356-370.
- Bulkeley, H. and Castán Broto, V. (2013) 'Government by experiment? Global cities and the governing of climate change', *Transactions of the Institute of British Geographers*, 38(3), p361-375.
- Bulkeley, H., Coenen, L., Frantzeskaki, N., Hartmann, C., Kronsell, A., Lindsay, M., Marvin, S., McCormick, K., van Steenbergen, F. and Voytenko Palgan, Y. (2016) 'Urban Living Labs: Governing Urban Sustainability Transitions', *Current Opinion in Environmental Sustainability*, 22, p13-17.
- De Jong, M., Joss, S., Schraven, D., Zhan, C. and Weijnen, M. (2015) 'Sustainable-Smart-Resilient-Low-Carbon-Eco-Knowledge Cities; Making Sense of a Multitude of Concepts Promoting Sustainable Urbanization', *Journal of Cleaner Production*, 109(1), p25-38.
- Dell'Era, C. and Landoni, P. (2014) 'Living Labs: A Methodology between user-centred design and participatory design', *Creativity and Innovation management*, 23(2), p137-154.
- Eriksson, M., Niitamo, V.P. and Kulkki, S. (2005) 'State-of-the-Art in Utilizing Living Labs Approach to User-Centric ICT Innovation – a European Approach.', Luleå: Centre for Distance-spanning Technology (CDT), Luleå University of Technology, Sweden, p1-13.
- Evans, J. and Karvonen, A. (2013) 'Give Me a Laboratory and I will Lower Your Carbon Footprint! – Urban Laboratories and the Governance of Low-Carbon Futures', *International Journal of Urban and Regional Research*, 38(2), p413-430.
- Evans, J., Jones, R., Karvonen, A., Millard, L. and Wendler, J. (2015) 'Living Labs and co-production: University Campuses as Platforms for Sustainable Science', *Current Opinion in Environmental Sustainability*, 16(1), p1-6.

- Frantzeskaki, N. and Loorbach, D. (2010) 'Towards governing infrasystem transitions, reinforcing lock-in or facilitating change?', *Technological Forecasting and Social Change*, 77(8), p1292-1301.
- Gualandi, E. and Romme, A.G.L. (2019) 'How to make Living Labs more Financially Sustainable? Case studies in Italy and the Netherlands', *Engineering management Research*, 8(1), p11-19.
- Guzmán, J.G., del Carpio, A.F., Colomo-Palacios, R. and de Diego, M.V. (2013) 'Living Labs for User-Driven Innovation: A Process Reference Model', *Research Technology Management*, 56(3), p29-39.
- Hossain, M., Leminen, S. and Westerlund, M. (2019) 'A systematic review of living lab literature', *Journal of Cleaner Production*, 213(1), p976-988.
- Jarvenpaa, S.L. and Wernick, A. (2012) 'Open Innovation Networks: The Evolution of Bureaucratic Control. In: *Collaborative Communities of Firms*, Springer, New York, NY, p9-33.
- Kemp, R., Schot, J. and Hoogma, R. (1998) 'Regime Shifts to Sustainability Through Processes of Niche Formation: The Approach of Strategic Niche Management', *Technology Analysis and Strategic Management*, 10(2), p175-198.
- Leminen, S. (2013) 'Coordination and Participation in Living Lab Networks', *Technology Innovation Management Review*, 3(11), p5-14.
- Leminen, S. (2015) 'Q&A. What are Living Labs?', *Technology Innovation Management Review*, 5(9), p29-35.
- Leminen, S. and Westerlund, M. (2016) 'A Framework for Understanding the Different Research Avenues of Living Labs', *International Journal of Technology Marketing*, 11(4), p399-420.
- Leminen, S., Rajahonka, M. and Westerlund, M. (2017) 'Towards Third-generation Living Lab Networks in Cities', *Technology Innovation Management Review*, 7(11), p21-36.
- Leminen, S., Westerlund, M. and Nyström, A-G. (2012) 'Living Labs as Open-Innovation Networks', *Technology Innovation Management Review*, 2(9), p6-11.
- Leminen, S., Westerlund, M. and Nyström, A-G. (2014) 'On Becoming Creative Consumers – User Roles in Living Labs Networks', *International journal of technology Marketing*, 9(1), p.33-52.
- Liedtke, C., Welfens, M., Rohn, H. and Normann, J. (2012) 'LIVING LAB: User-driven Innovation for Sustainability', *International Journal of Sustainability in Higher Education*, 13(2), p106-118.
- Loorbach, D. and Rotmans, J. (2010) 'The Practise of Transition Management: Examples and Lessons from Four Distinct Cases', *Futures*, 42(3), p237-246.

- Luque-Ayala, A. and Marvin, S. (2015) 'Developing a Critical Understanding of Smart Urbanism?', *Urban Studies*, 52(1), p2105-2116.
- March, J.G. (1991) 'Exploration and Exploitation in Organizational Learning', *Organization Science*, 2(1), p71-87.
- McGuirk, P., Bulkeley, H. and Dowling, R. (2014) 'Practises, Programs and Projects of Urban Carbon Governance: Perspectives from the Australian City', *Geoforum*, 52(1), p137-147.
- Menny, M., Voytenko Palgan, Y. and McCormick, K. (2018) 'urban Living Labs and the Role of Users in Co-Creation', *Gaia – Ecological Perspectives on Science and Society*, 27(1), p68-77.
- Mulder, I., Velthausz, D. and Kriens, M. (2008) 'The Living Labs Harmonization Cube: Communicating Living Lab's essentials', *Electronic Journal for Virtual Organizations and Networks*, 10(1), p1-14.
- Neef, M. R., Verweij, S., Gugerell, K. and Moen, P.L.R. (2017) 'Wegwijs in Living Labs in Infrastructuur en Ruimtelijke Planning: Een Theoretische en Empirische Verkenning', Groningen: *Rijksuniversiteit Groningen*, 61p.
- Nevens, F., Frantzeskaki, N., Loorbach, D. and Gorissen, L. (2013) 'Urban Transition Labs: Co-Creating Transformative Action For Sustainable Cities', *Journal of Cleaner Production*, 50(1), p111-122.
- Nyström, A-G., Leminen, S., Westerlund, M. and Kortelainen, M. (2014) 'Actor roles and role patterns influencing innovation in living labs', *Industrial Marketing Management*, 43(3), p.483-495.
- Paroutis, S., Bennet, M. and Heracleous, L. (2014) 'A Strategic View on Smart City Technology: The Case of IBM Smarter Cities During a Recession', *Technological Forecasting and Social Change*, 89(1), p262-272.
- Puerari, E., de Koning, J.I.J.C, von Wirth, T., Karré, P.M., Mulder, I.J., and Loorbach, D.A. (2018) 'Co-Creation Dynamics in Urban Living Labs', *Sustainability*, 10(6), 1893 (p.1-18).
- Sanders, E. B.-N. and Stappers, P.J. (2008) 'Co-creation and the New Landscapes of design', *International Journal of CoCreation in Design and the Arts (CoDesign)*, 4(1), p5-18.
- Schaffers, H. and Turkama, P. (2012) 'Living Labs for Cross-Border Systemic Innovation', *Technology Innovation Management Review*, 2(9), p25-30.
- Scholl, C. and Kemp, R. (2016) 'City Labs as Vehicles for Innovation in Urban Planning Processes', *Cogitatio Urban Planning Open Access Journal (Paradigm Shifts in Urban Planning)*, 1(4), p89-102.

- Schot, J. and Geels. F.W. (2008) 'Strategic Niche Management and Sustainable Development: Towards a new research and policy agenda', *Environmental Politics*, 16(4), p584-603.
- Schuurman, D., Baccarne, B., De Marez, L., Veeckman, C. and Ballon. P. (2016) 'Living Labs as Open Innovation Systems for Knowledge Exchange: Solutions for Sustainable Innovation Development', *International Journal of Business Innovation and Research*, 10(2-3), p322-340.
- Seyfang, G. and Smith, A. (2007) 'Grassroots Innovations for Sustainable Development: Towards a New research and policy Agenda', *Environmental Politics*, 16(4), p584-603.
- Smith, A. and Raven, R. (2012) 'What is Protective Space? Reconsidering niches in transitions to sustainability', *Research Policy*, 41(6), p1025-1036.
- Ståhlbröst, A. (2012) 'A Set of Key Principles to Assess the Impact of Living Labs', *International Journal of Product Development*, 17(1-2), p60-75.
- Steen, K. and van Bueren, E. (2017) 'The Defining Characteristics of Urban Living Labs', *Technology Innovation Management Review*, 7(7), p21-33.
- Szejnwald Brown, H. and Vergragt, P.J. (2008) 'Bounded Socio-Technical Experiments as agents of systemic change: The Case of a Zero-Energy Residential Building', *Technological Forecasting and Social Change*, 75(1), p107-130.
- Veeckman, C., Schuurman, D., Leminen, S. and Westerlund, M. (2013) 'Linking Living Labs Characteristics and Their Outcomes: Towards a Conceptual Framework', *Technology Innovation management Review*, 3(12), p6-15.
- Von Wirth, T., Fuenfschilling, L., Frantzeskaki, N. and Coenen, L. (2019) 'Impacts of Urban Living Labs on Sustainability Transitions: Mechanisms and Strategies for Systematic Change Through Experimentation', *European Planning Studies*, 27(2), p229-257.
- Voytenko Palgan, Y., McCormick, K., Evans, J. and Schliwa, G. (2016) 'Urban Living Labs for Sustainability and Low Carbon Cities in Europe: Towards a research agenda', *Journal of Cleaner Production*, 123(1), p45-54.
- Westerlund, M. and Leminen, S. (2011) 'Managing the Challenges of Becoming an Open Innovation Company: Experiences from Living Labs', *Technology Innovation Management Review*, 1(1), p19-25.

Conference proceedings

Baccarne, B., Schuurman, D., Merchant, P. and De Marez, L. (2014) 'The Role of Urban Living Labs in a Smart City', *The XXV ISPIM Conference – Innovation for Sustainable Economy and Society*, Dublin, Ireland, 8-11 June.

Bergvall-Kåreborn, B., Eriksson, C.I., Ståhlbröst, A. and Svensson, J. (2009) 'A Milieu for Innovation – Defining Living Labs', In: *Proceedings of the 2nd ISPIM Innovation Symposium: Simulating Recovery – The Role of Innovation Management*, New York City, USA, 6-9 December.

Mangan, A., Rukanova, B., Henningson, S., Kipp, A., Klein, S. and Tan, Y.-H. (2009) 'Technological Innovation in Learning Settings: Power and Politics in Living Labs', *International Conference on Organizational Learning, Knowledge and Capabilities (OLKC)*, Amsterdam, Netherlands, 26-28 April.

Mulvenna, M., Bergvall-Kåreborn, B., Wallace, J., Galbraith, B. and Martin, S. (2010) 'Living Labs as Engagement Models for Innovation', *eChallenges e-2010 Conference*, Warsaw, Poland, 27-29 October.

Books

Bulkeley, H., Castán Broto, V., Hodson, M. and Marvin, S. (2010) *Cities and low carbon transitions*. 1st Edition. New York: Routledge.

Chesbrough, H.W. (2003) *Open innovation: The new imperative for creating and profiting from technology*. 1st Edition. Boston, MA: Harvard Business School Press.

Evans, J., Karvonen, A. and Raven, R. (2016) *The experimental City*. 1st Edition. London: Routledge.

Giddens, A. (1984) *The Constitution of Society*. 1st Edition. Cambridge: Polity Press in association with Basil Blackwell Ltd (Oxford).

Glaser, B. (1978) *Theoretical Sensitivity*. 1st Edition. Mill Valley, CA: Sociology in Press.

Grin, J., Rotmans, J. and Schot, J. (2010) *Transitions to sustainable development: New directions in the study of long term transformative change*. 1st Edition. London: Routledge.

Marvin, S., Bulkeley, H., Lindsay, M., McCormick, K. and Voytenko Palgan, Y. (eds.) (2018) *Urban Living Labs Experimenting With City Futures*. 1st Edition. New York: Routledge.

Miles, M.B., Huberman, A.M. and Saldana, J. (2013) *Qualitative Data Analysis*. 3rd Edition. Thousand Oaks, CA: SAGE Publications.

Punch, K.F. (2014). 'Introduction to Social Research; quantitative and qualitative approaches'. 3rd Edition. London: SAGE Publications.

Yin, R.K. (2003). *Case Study Research: Design and Methods*. 3rd Edition. London: SAGE Publications.

Book chapters

Astbury, J. and Bulkeley, H. (2018). '7. Bringing Urban Living Labs to Communities; Enabling processes of transformation' in Marvin, S., Bulkeley, H., Lindsay, M., McCormick, K. and Voytenko Palgan, Y. (eds.) *Urban Living Labs Experimenting With City Futures*. 1st Edition. New York: Routledge, pp. 106-125.

Burch, S., Graham, A. and Mitchell, C. (2018). '11. Agency, Space and Partnerships; Exploring key dimensions of urban living labs in Vancouver, Canada' in Marvin, S., Bulkeley, H., Lindsay, M., McCormick, K. and Voytenko Palgan, Y. (eds.) *Urban Living Labs Experimenting With City Futures*. 1st Edition. New York: Routledge, pp. 189-209.

Hodson, M., Evans, J. and Schliwa, G. (2018). '3. Putting Urban Experiments into Context; Integrating urban living labs and city-regional priorities' in Marvin, S., Bulkeley, H., Lindsay, M., McCormick, K. and Voytenko Palgan, Y. (eds.) *Urban Living Labs Experimenting With City Futures*. 1st Edition. New York: Routledge, pp. 37-51.

Mai, L. (2018). '12. Placing Sustainability in Communities; Emerging urban living labs in China' in Marvin, S., Bulkeley, H., Lindsay, M., McCormick, K. and Voytenko Palgan, Y. (eds.) *Urban Living Labs Experimenting With City Futures*. 1st Edition. New York: Routledge, pp. 210-230.

Trencher, G., Geissler, A. and Yamanaka, Y. (2018). '10. 15 Years and still living; The Basel Pilot Region Laboratory and Switzerland's pursuit of a 2,000-Watt Society' in Marvin, S., Bulkeley, H., Lindsay, M., McCormick, K. and Voytenko Palgan, Y. (eds.) *Urban Living Labs Experimenting With City Futures*. 1st Edition. New York: Routledge, pp. 167-188.

Van Steenbergen, F. and Frantzeskaki, N. (2018). '13. The Importance of Place for Urban Transition Experiments; Understanding the embeddedness of urban living labs' in Marvin, S., Bulkeley, H., Lindsay, M., McCormick, K. and Voytenko Palgan, Y. (eds.) *Urban Living Labs Experimenting With City Futures*. 1st Edition. New York: Routledge, pp. 231-247.

Theses and Doctoral dissertations

Blezer, S. (2017) 'the Living Lab Concept, as Intermediary Platform, for Sustainable Neighbourhood Development in the Province of Limburg, the Netherlands', BSc thesis in Built Environment, Zuyd University of Applied Sciences, Heerlen (Netherlands).

Leminen, S. (2015) 'Living Labs as Open Innovation Networks. Networks, Roles and Innovation Outcomes', PhD dissertation, Aalto University, Helsinki (Finland).

Schliwa, G.I. (2013) 'Exploring Living Labs through Transition management; Challenges and Opportunities for Sustainable Urban Transitions', MSc thesis in Environmental Management and Policy, Lund University, Lund (Sweden).

Schuurman, D. (2015) 'Bridging the gap between Open and User Innovation? Exploring the value of Living Labs as a means to structure user contribution and manage distributed innovation', PhD dissertation, Ghent University and Vrije Universiteit Brussel (VUB), Ghent and Brussel (Belgium).

Online documents

Ballon, P., Pierson, J. and Delaere, S. (2005) 'Test and Experimentation Platforms For Broadband Innovation: Examining European Practise' [Online]. Available at: <https://ssrn.com/abstract=1331557> (Accessed: May 2019).

McCormick, K. and Hartmann, C. (2017) 'Handbook: The Emerging Landscape of Urban Living Labs; Characteristics, Practises and Examples', *GUST-project* [Online]. Available at: <https://drift.eur.nl/publications/gust-handbook-urban-living-labs/> (Accessed: May 2019)

Robles, A.G., Hirvikoski, T., Schuurman, D. and Stokes, L. (2015) 'Introducing ENOLL and its Living Lab community', *European Network of Living Labs* [Online]. Available at: <https://issuu.com/enoll/docs/enoll-print> (Accessed: May 2019)

Santonen, T., Creazzo, L., Griffon, A., Bódi, Z. and Aversano, P. (2017) 'Cities as Living Labs – Increasing the impact of investment in the circular economy for sustainable cities', *European Commission* [Online]. Available at: <https://ec.europa.eu/> (Accessed: April 2019)

Scholl, C., Ablasser, G., Eriksen, M.A., Baerten, N., Blok, J., Clark, E., Cörvers, R., Domain, W., Drage, T., Essebo, M., Graham, T., Hillgren, P-A., Hoeflehner, T., Janze, A., Kemp, R., Klingsbigl, G., Köhler, W-T., de Kraker, J., Landwehr, A., Leitner, G., Nilsson, P-A., Pelin, O., Rijkens-Klomp, N., Seravalli, A., Simons, J., Vandermorsten, G., Wachtmeister, A., van Wanroij, T., Wlasak, P. and Zimmerman, F. (2017). 'Guidelines for Urban Labs', *URB@Exp project 2014-2017 JPI Urban Europe* [Online]. Available at: https://www.academia.edu/36969969/GUIDELINES_FOR_URBAN_LABS (Accessed: December 2019)

Websites

AlleCijfers (2019) *Informatie Gemeente Groningen* [Online]. Available at: <https://allecijfers.nl/gemeente/groningen/> (Accessed 11 November 2019).

Hanzehogeschool Groningen (2018) *Totaal aantal studenten stijgt licht* [Online]. Available at: <https://www.hanze.nl/nld/organisatie/overzichten/nieuws/totaal-aantal-studenten-stijgt-licht> (Accessed 11 November 2019).

JPI Urban Europe (2019) *Introduction JPI Urban Europe* [Online]. Available at: <https://jpi-urbaneurope.eu/about/intro/> (Accessed: 29 April 2019).

Rijksoverheid (2019) *Groningen en Drenthe krijgen EU-geld als eerste groene waterstofregio van Europa* [Online]. Available at: <https://www.rijksoverheid.nl/actueel/nieuws/2019/10/17/groningen-en-drenthe-krijgen-eu-geld-als-eerste-groene-waterstofregio-van-europa> (Accessed: 11 November 2019).

Rijksoverheid (2019) *Krimpgebieden en anticipeergebieden* [Online]. Available at: <https://www.rijksoverheid.nl/onderwerpen/bevolkingsdaling/krimpgebieden-en-anticipeergebieden> (Accessed: 11 November 2019).

Rijksuniversiteit Groningen (2018) *Veelgestelde vragen over internationalisering en Engelstalig onderwijs bij de RUG* [Online]. Available at: <https://www.rug.nl/news/2018/03/faqs-about-internationalization-and-english-taught-degree-programmes-at-the-ug> (Accessed: 11 November 2019).

Rijksuniversiteit Student Portal (2019) *Growth at the University of Groningen stabilizes* [Online]. Available (for RUG personal) at: <https://student.portal.rug.nl/infonet/studenten/actueel/nice-to-know/growth-at-the-university-of-groningen-stabilizes> (Accessed 11 November 2019).

Stichting Paddepoel Energiek (2019) *Wie wij zijn* [Online]. Available at: www.paddepoelenergiek.nl/wie-zij-zijn/ (Accessed: 4 October 2019)

URBACT (2019) *Welcoming International professionals and students and Internationalisation for a sustainable future* [Online]. Available at: <https://urbact.eu/welcoming-international-professionals-and-students> and <https://urbact.eu/internationalisation-sustainable-future> (Accessed: 4 October 2019).

Urban Gro Lab (2019) *Homepage* [Online]. Available at: www.urbangrolab.nl (Accessed: 4 October 2019).

Workshop(s), Brainstorm session(s), and Webinar(s)

Bondarenko, O., Schuurman, D. and De Kinderen, W. (2019) Workshop 'From Local to Global – Scaling up your Living Lab Activities to a Sustainable Living Lab Organization: Experiences from City Pulse', Open Living Lab Days 2019 Conference, Thessaloniki, Greece, September 2019.

Gualandi, E. (2019) 'Brainstorm Funding Options in ULLs', Personal Meeting, Open Living Lab Days 2019 Conference, Thessaloniki, Greece, September 2019.

Schuurman, D. (2019) '*Brainstorm Three-layer Model*', Personal Meeting, Open Living Lab Days 2019 Conference, Thessaloniki, Greece, September 2019.

Schuurman, D. (2019) '*Living labs as a service: Supporting Business Innovation through Assumptions-Based Testing*', Living Labbers webinar #5, ENoLL, Online, October 2019.

#8 Appendix

In the following few pages, the appendices are found that support the Master thesis process and content. Concerned are the interview guide and interview permission statement.

8.1 Interview guide (Blanco)

Stefano Blezer

street name

postal code Groningen

Nederland

E-mail: *e-mailadres*

Groningen, *date*.

Concern: Interview guide

Dear *Mr. / Mrs. Name*,

Below you will find a short introduction into the topic, main research question, and the research objective of the master thesis research for the master study Socio-Spatial Planning at the University of Groningen. Besides, the interview structure is described for the planned interview.

Background information

Since 2006, the birth year of the European Network of Living Labs (ENoLL), the interest increased in the concept of Urban Living Labs (ULLs), both the academic world as well as in practise. ULLs are concerned with better spatial developments of cities and the associated challenges, such as climate change or the energy transition. The concept, originally, dates back from the IT sector with predecessors dating back to the 1960s. Right now, ULLs can be considered as a collaboration form between public organization, private companies, educational institutions and citizens to shape cities.

Despite this increased interest and the experimentation and learning that it entails in practise, researchers and practitioners (people who run ULLs) do not yet agree on what this development actually means for cities. In addition, ULLs start everywhere; in neighbourhoods, at city levels, and at governments and other higher-level organisations that try to use this 'tool' to look for solutions to today's challenges. Surprisingly, research focuses primarily on the functioning of ULLs and not so much on the impact thereof. What do all these loose ULLs mean now, and how do they actually ensure that 'something' changes in the way cities develop?

It is exactly this point that the master thesis focuses on. It seeks to gain a better understanding and insight in how and what types of ULLs can contribute to transformative changes in the urban environment and society. In the research I use three types of ULLs: **organic**, **civic** and **strategic** variants. Respectively linking with the local level (street or neighbourhood), city level, and city-, regional- or (inter)national scale.

Moreover, all kinds of aspects are important regarding the creation of impact at ULLs. The specific focus in the master research is on the funding models, stakeholder roles and outcomes of ULLs. Research, namely, shows that structural changes are possible if an ULL is able to make an impact. In order to create impact, a ULL must operate on the long term. Thereto, long-term financing is needed. In addition, the results of ULLs are often intangible, such as knowledge or a concept. Learning is also one of the most important spearheads of ULLs according to the theory with which they distinguish themselves from other experimental or development possibilities. Because outcomes are not always clear to financiers, they often do provide project-based funding so that each project can be evaluated and assessed, whether the investment pays off or not. This is, however, contrary to the ideology of ULLs (learning together) and the way in which they can make an impact (that requires long term funding and operation).

Objective and research questions

The objective of the master research is **to gain a better understanding and insight in how and what types of ULLs can contribute to transformative changes in the urban environment and society by focussing on the relationship between funding, stakeholder roles and outcomes of ULLs.**

The main research question is **How can ULLs contribute to transformative changes in the urban environment and society by gaining a better understanding in the relationship between their funding, stakeholder roles and outcomes?**

The sub-research questions are:

1. What are theoretical ULLs and how does the literature describe and suggest how they should be used in today's changes in the urban environment and society?
2. What is the practical relationship between funding, stakeholder roles and outcomes in existing ULLs in the city of Groningen, and why?
3. What are the differences and similarities between theoretical and practical views on ULLs, and how does this influence its potential to contribute to transformative changes in the urban environment and society?

The interview and the information resulting from it contribute, in particular, to answering sub-question 2.

Interview structure

The interview will consist of 4 themes and has a semi-structured character. This means that before the interview, a number of questions and topics that will be discussed are fixed. During the interview there is room for follow-up questions on certain points that are considered relevant and additional explanation from the interviewee where she / he deems this necessary.

Handwritten notes and sound recording (with the written permission of the interviewee which is submitted at the start of the investigation) ensure the correct reporting of the interview.

Below you will find the questions and themes prepared so far. These will serve as a start and guidance for the interview. Between the moment of sending this interview guide and the actual interview, questions can still change, be added or be omitted.

On the next page, you will find the interview themes. If you have any questions regarding the master research or this interview, do not hesitate to contact me!

I am looking forward to meeting you in person.

Kind regards,

Stefano Blezer

Education: Master student Socio-Spatial Planning at the University of Groningen.

E-mail: *e-mailadres*

Tel: *phone number*

Interview themes

Introduction

1. Introduce yourself, the ULL you take part in (plus its origin and objective) and explain briefly what your role is within the ULL.

Theme 1: Stakeholder roles

1. Which stakeholders are involved in the ULL and what are their main activities?
2. Which stakeholders are how often involved in the ULL, and why?
3. In what way(s) does the one-off / continuous involvement of the stakeholders in the ULL influence the collaboration, commitment, trust and reciprocity in the ULL between stakeholders?

Theme 2: Financing

1. Which stakeholder(s) is / are responsible for the financing of the ULL, and in what way and what frequency do they finance it?
2. Are there stakeholders who support the ULL in an indirect non-financial way? If so, which stakeholder and in what way(s)?

Theme 3: Outcomes

1. Which outcomes did the ULL bring (Name three outcomes)?
2. Which stakeholders do benefit the most from these outcomes, and in what way?
3. Which stakeholders do benefit the least from these outcomes, and in what way?
4. What outcomes were foreseen beforehand, and which weren't, and how is it possible that the unforeseen outcomes have come about?

Theme 4: Impact

1. How are the results of the ULL shared (with stakeholders outside the ULL), and why?
2. In which way does the ULL try to create impact, and why?
3. Are there outcomes that are ultimately not addressed by any of the stakeholders? If so, what are these and why is nothing being done with this?

Extra / Closing

1. What do you see as the most important value / contribution in ULLs to transformative changes in the urban environment and society?
2. What do you see as the most important factor for ULLs to ensure long-term funding?
3. What do you see as the most important aspect in the collaboration between the different stakeholder roles?
4. Is there anything that you consider important regarding the relationship between funding, stakeholder roles and outcomes, that I need to know in the research or that I missed in the interview?
5. Is there anything that you want to ask me regarding the master thesis or the interview?

8.2 Interview permission statement (Blanco)

Stefano Blezer

street name

postal code Groningen

Nederland

E-mail: *e-mailadres*

Groningen, *date*.

Concern: Interview permission statement

Dear *Mr. / Mrs. Name*,

Thank you for participating in the interview about Urban Living Labs as part of the Master thesis for the Socio-Spatial Planning study program at the University of Groningen. The objective of the research is to gain a better understanding and insight in how and what types of ULLs can contribute to transformative changes in the urban environment and society by focussing on the relationship between funding, stakeholder roles and outcomes of ULLs.

By signing the consent form, you agree to the points below (drawn up in duplicate).

- I agree to participate in the interview and the researcher has explained the subject, the main research question and the research objective of the research.
- I understand that the interview is voluntary and that I can exit the interview or take a break at any time.
- I understand that I can choose not to answer a question at any time.
- I understand that my answers are only confidential and that my name is not mentioned or linked to the research, the results thereof and the report that follows, unless otherwise stated.
- I agree that the interview will be recorded and that a written version of the interview will be submitted to me by the researcher for verification, so that my identity cannot be derived from this and that no one, except the researchers, will have access to the sound recordings of the interview without my (interviewee) permission.
- I agree that the written version of the interview will be analysed and used in a written and digital publication of the research and that I can request a digital version from the researcher at any time. The digital version can be viewed by students and the staff of the University of Groningen.

Date:

Name + signature interviewee:

Date:

Name + signature researcher: