

# The Community Effects of Co-living

Exploring opportunities for Dutch developer-led co-living in fostering community building among residents.

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**SYNCHROON**  
ontwikkelaars

# PREFACE

Before you lies the master thesis "The community effects of co-living". It has been written to fulfill the requirements and complete the Spatial Planning Master's program at Radboud University Nijmegen. It is a culmination of six months of work that started with an explorative conversation in the brownfield urban development of Merwede and ends now, on the 14<sup>th</sup> floor of a new high-rise office building in the heart of Utrecht. Whilst looking out over the city where I started my student life in, I feel grateful for the memories I have made here. Memories that I share collectively with the many communities I've had the privilege of being part of.

Just like other students, I have experienced how urban life can be wonderful and exciting but sometimes feel hectic and anonymous. How sharing a living environment can bring people together and fosters strong social ties, but can also create friction. Therefore, I am glad that my internship organization is motivated to take up the challenge of creating attractive and compact urban residential areas that pay attention to human interaction and community feeling. I am convinced the findings of this study will help them and others to tackle this challenge. But before presenting these findings, I would like to express my gratitude to those who contributed to my journey as master student.

First, I would like to thank Synchroon for providing me the opportunity to do my research and simultaneously learn so much about area and real estate development. It was nice to work in a place where colleagues are intrinsically motivated to create places that have lasting quality and meaning. In particular, I would like to thank my internship supervisor, Maaike Peereboom, for her support and feedback. But especially for showing me that change starts with sticking your neck out and staying true to what you believe in. I really enjoyed the regular meetings we had and the wide array of topics we discussed while having them.

Second, I would like to thank my thesis supervisor Ary Samsura for guiding me throughout the thesis trajectory. I enjoyed our discussions and am grateful for the positive and constructive attitude that you brought with you. I definitely needed that sometimes and it felt that the meetings we had have been a major contribution to finding my way in this subject. I also wish to thank all of the respondents, without whose cooperation I would not have been able to conduct this analysis.

Finally, I am grateful for all the friends and family that have shown continuous support and have been there when I needed them. I consider myself a lucky man having them around. Especially my parents, Jan and José, for supporting me through and through and believing in me as I muddle my way through life. To my friends for taking my mind off and showing that life is about more than studying, and to my brother Tom who I consider one of them. And last but not least, I would like to thank Kirsten, for showing me love and support at times when it was needed most.

I hope you find this reading enjoyable and informative.

Bas Hoppenbrouwer

Utrecht, February 28, 2019

## SUMMARY

Increasing urbanization leads to more dense and compact cities. But despite living in closer proximity to each other, people feel increasingly lonely and are less connected. Networks of lighter ties are dwindling and there is less 'community building'. Young adults are found to be the most lonely generation, whilst loneliness and isolation present a great public health threat. The built environment is said to play an important role in creating new ties and fostering a social interaction. Thus, cities and urban professionals face the challenge of developing attractive, but compact urban residential areas that pay attention to human interaction and community feeling.

Urban residential developments with particular focus on sharing and community are getting increased attention. Real estate developers are designing more housing schemes with elements such as collective spaces, shared rooftops, tool libraries and more. Collaborative typologies have long been an object of research, in particular bottom-up *co-housing*. Previous studies showed that certain characteristics of resident-led co-housing promote interaction and increase neighborhood community. Based on these studies one can assume that outcomes could apply equally to developer-led co-living. But due to a different planning process, target group and collective spaces, co-living might not foster community building among residents. The aim of this study is to explore the emergence and characteristics of co-living in the Netherlands and the extent to which developer-led co-living contributes to community building among millennials in urban neighborhoods.

In the theoretical framework, the emergence and characteristics of co-housing and co-living have been further clarified. The independent variable, community building, is deconstructed into behavior and feeling components based on previous studies. Finally, a literature review on co-housing studies provides several factors of influence that affect community building. Using a qualitative research strategy and a multiple case-study the propositions of co-living effects are studied. Three residential developments in Amsterdam have been selected based on co-living criteria and through semi-structured interviews with both experts and residents data is collected. Finally, open and axial coding allowed for a comprehensive data-analysis.

Results show that the emergence of co-living developments can be explained from both the supply and the demand side. Dutch construction and tenancy law, in combination with the many prescriptions in competitive tenders that municipalities use, explain the supply side of co-living. On the demand side, the heated housing market leads to residents compromising either on location or living space. The motivation for residents to move into a development with co-living characteristics is done mostly out of necessity and not desire. However, it is found that most do enjoy the collective spaces and shared facilities.

This study has found that sharing facilities and collective use of space creates the opportunity for casual interaction and for small scale events to happen. This strengthens familiarity which, in turn, contributes to various community building components. Through a combination of a digital communication medium and social activities, people feel more engaged. This lowers the threshold to ask for favors and exchange goods and ideas. In most cases, it is not a desire for a strong community bond, but more about a certain social control and familiarity, boosted by sharing common spaces.

Next, several social and physical factors have been found to influence the use and effect of co-living on community building. Social factors are the amount of influence in management or in the organization of activities and a certain type of homogeneity in values and principles, safeguarded by a certain resident selection on stage of life and motivation. Also, the age of

the community can influence the social ties. The, on average, short or medium stay of co-living residents negatively affects community building. Another returning social factor that had a positive influence was sharing the process of moving in together.

Physical or spatial factors are mostly concerned with the amount of residents you share something with. High proximity and density can create feelings of anonymity. Clustering collective spaces can prevent this and create a certain familiarity with the neighbors you share them with. Another factor is a transition zone between private and public that is well maintained and in the right scale. That can create a feeling of 'us' and feel like a real extension of one's private space. A key factor here is a minimum quality and an engaged service manager or concierge safeguarding it. Other important factors that seem to foster community feelings and behavior are local neighborhood facilities like bars, coffee places or a gym. Also, the use and effects of collective facilities are experienced higher in summer than in winter, especially shared outdoor spaces have a strong positive effect on community building.

This first exploration of co-living as a housing typology shows it has similarities with co-housing and builds upon the scientific knowledge base by offering the perspective of a millennial target group. Target groups of co-housing and co-living differ and therefore it is hard to compare outcomes. Young urban millennials are a target group where strong neighborhood ties are not a great desire. But sharing spaces and facilities to compensate for small private space can create a familiarity with neighbors that results in social interaction and social control. Taking into account the identified factors of influence in future co-living developments can create a living environment that better fosters community behavior and feelings and leads to less social isolation and loneliness for a generation that is susceptible to it.

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# 1. INTRODUCTION

## 1.1 Background

In the field of urban planning, attention for sharing, community building and happiness is increasing (Montgomery, 2016). In part, it is a response to the modern paradox that opposite globalization and individualization there is a growing desire for security, social bonds and community (Castells, 1996). The growing urban population makes a heavy appeal on scarce space. Globally, urbanization will continue and in the Netherlands the number of households in urban areas will increase as well (PBL, 2016). The Dutch policy ambition is to try and accommodate this growth in inner-cities, which leads to more dense and compact cities (Dopper & Geuting, 2017). However, research shows that despite living in closer proximity to each other, there is less interaction among people. In contrast, people feel increasingly lonely and are less connected (Corcoran & Marshall, 2017; CBS, 2017).

In 2000, sociologist Robert Putnam already warned us that people's networks of lighter relationships had been dwindling for decades. As a result, the majority of Western urban neighborhoods showed less 'community building'. In Britain and the Netherlands, younger adults were found to be the most lonely generation (AXA, 2014; Kamphuis, 2018). Next, Kamphuis shows that three-quarters of lonely younger adults feel like it is a big taboo. This is an alarming finding, especially since research shows loneliness and social isolation may represent a greater public health hazard than obesity (American Psychological Association, 2018). Also, a strong sense of community is associated with improved well-being, increased feelings of safety and security, participation in community affairs and civic responsibility (Francis, Giles-Corti, Wood, & Knuiman, 2012). By fostering social interaction and cultivating networks of support a 'sense of community' is enhanced and social capital is build (Chaskin & Joseph, 2010; French, et al., 2014).

Most scholars agree that the direct built environment can play an important role in creating new ties between people and promoting social interaction (Strauss, 2016; Gehl, 2013; Putnam, 2007). Certain characteristics of a neighborhood or residential complex are found to promote interactions and foster a sense of community (Lund, 2003) and in turn, build social capital (Leyden, 2003). So, cities face the challenge of developing attractive, but compact urban residential areas that pay attention to human interaction and community feeling (United Nations, 2018).

Against this backdrop, many Western cities have seen the (re-)emergence of an alternative typology: 'co-housing'. It is characterized by a specific focus on sharing, collectivity and community (Tummers, 2016). Traditional co-housing is a resident-led scheme with high levels of user involvement in planning, construction and management. More recently another typology is attracting attention. One that has many similarities, but is developer-led: *co-living*. In part, co-living responds to the increasing demand for affordable, smaller urban dwellings in the Netherlands (Volkskrant, 2017).

Characterized by smaller private spaces, co-living primarily targets a group known as *millennials*. This is a group that is attracted by urban living, but has difficulty in finding suitable housing (AM, 2017). Also, it is a group that has specific housing preferences that cannot be found in more traditional housing typologies. With millennials being prone to loneliness and a growing demand for single-person households (CBS, 2018), co-living can offer a promising

alternative. One that can promote social interaction and build neighborhood community among millennials through sharing and collective spaces (Green, 2017).

## 1.2 Problem statement

Collaborative types of housing have been an object of research in a variety of fields and attention has grown since the turn of the century (Williams, 2005; Fromm, 1991; Czischke, 2017). In particular bottom-up *co-housing* practices have been studied, since they were a promising alternative to institutional housing provisions. Many residents, local administrators and scholars had high expectations for *co-housing* as representative of a new model for socially inclusive and sustainable housing, especially during the housing crisis (Tummers, 2015). However, realization seemed difficult in the Netherlands and the rest of Europe. Primarily due to lack of knowledge, organizational complexity and financial risks (Van Loon, 2013). The Dutch Ministry has reduced its target for resident-led development from 30% to 15% of the total housing production (Tummers, 2017).

Despite this, housing developments with particular focus on sharing and community are getting increased attention. A growing number of private or institutional developers design housing schemes with elements such as collective spaces, shared rooftops, communal gardens, tool libraries and more (Pop-Up City, 2018). But there are other drivers in play here, such as the pressure on the urban housing market which pushes urban dwellers to live smaller (Volkskrant, 2017). Labeled as *co-living*, this new typology aims to provide a type of communal living for a specific group of people, primarily *millennials*. Especially now, as the sharing economy gains traction, modern *co-living* is becoming a commercially attractive proposition for developers (The Guardian, 2018). In many cases, just as traditional *co-housing*, it is proposed as a response to societal demands for more socially inclusive and sustainable housing (Jarvis, Scanlon, & Fernández Arrigoitia, 2016).

However, where research has shown that certain characteristics of *co-housing* promote interaction and therefore increases community building in the neighborhood (Williams, 2005; Tummers, 2017), there is a lack of studies on whether this is the case for *co-living*. In particular when taking into account its *millennial* target group and the top-down approach. Nio (2016) states that the idea of neighborhood community goes against the growing individualistic and mobile lifestyle of particularly younger urban residents. A Dutch national survey supports this increasing hedonism and individualism in society (CBS, 2012).

Studies on resident-led *co-housing* are extensive and can provide important lessons for developer-led *co-living* (Van Bueren, 2018). Based on studies on traditional *co-housing* one can assume that outcomes apply equally for contemporary *co-living*. Nevertheless, due to differences in for example the planning process, management strategy, target group, sharing and collective use of space, *co-living* might not lead to community building among residents. Comprehensive research on this developer-led typology is missing and the relation between sharing, collective use of space and community building has only been treated to a limited extent by other scholars.

## 1.3 Scope

The scope of this empirical study is restricted to contemporary types of *co-living*, characterized by a smaller private space compensated by several shared facilities and collective spaces. Data analysis will be carried out on empirically collected data from Dutch *co-living* cases that meet the criteria that will be identified in the literature review.

In order to understand the relationship between the built environment and community building, literature from sociology and planning will be discussed. The theoretical framework of this thesis is derived from literature from mostly Western countries. The empirical data for this study is conducted in the Netherlands. Therefore, the scope of this study is limited to Dutch urban residential developments.

## 1.4 Research aim

The purpose of this study is to evaluate the emergence of co-living and its expected effects on community building among residents. Different from traditional co-housing, this contemporary typology is developer-led and mainly focused on millennials. First, understanding is sought of the characteristics of co-living and how the rise of collaborative typologies can be explained. By analyzing the extensive literature base on co-housing practices these typologies can be placed in a framework.

Next, the study attempts to gain scientific insights in how sharing facilities and collective use of space can foster community building. By linking sociology literature with planning theories this study will determine criteria for community building that can be applied in empirical research of several Dutch cases. And by combining a literature review with qualitative research this study attempts to find physical and social design principles for successful shared living environments.

Summarized this research has the following aim:

*To explore the emergence and characteristics of co-living in the Netherlands and explain the influence of sharing and collectivity on community building among residents in developer-led co-living typologies.*

## 1.5 Research questions

Based on the problem statement and research aim, the following research question has been formulated:

*To what extent can (characteristics of) developer-led co-living contribute to community building among millennials in urban neighborhoods?*

In order to thoroughly answer the main research question it has been deconstructed into the following sub questions:

- 1) *What explains the emergence of developer-led co-living and what are its characteristics?*
- 2) *What is the importance of community building and how can it be measured?*
- 3) *What is the effect of sharing facilities and collective use of space on community building in Dutch co-living developments?*
- 4) *What social and physical factors influence the effect of sharing and collectivity on community building in co-living developments?*

## 1.6 Relevance

### **Scientific relevance**

Collaborative housing typologies have been an object of research for many scholars, from various fields. But a scientific exploration of contemporary developer-led types of urban residential development is missing, especially regarding the social effects (community, happiness or well-being). Where Tummers (2017) contributed to the existing body of knowledge by drawing attention to environmental characteristics of collaborative housing, this research contributes by taking the first steps in exploring the social effects of this housing typology.

Tummers' research showed that co-housing can represent a (more) sustainable model, so it is important to gain understanding of the key success factors and bottlenecks of developer-led co-living.

Scientific debate about whether contemporary co-housing can achieve the societal goals on which it is based, is growing. Some scholars make the comparison with gated-communities and discuss the inclusivity of co-housing (Chiodelli, 2015; Ruij, 2014). The biggest question that arises is whether the more speculative character of co-living, which sets it apart from traditional co-housing (Sargisson, 2012), can still lead to desirable social effects like community-building. This research perspective is relevant because it might offer a trajectory to better develop and manage urban futures. By discovering and revealing potential directions for successful urban development it intends to achieve one of the key objectives of planning research (Healey & Hillier, 2010).

This study distinguishes itself by combining literature on co-housing, community building and urban planning. Sociology and planning scholars have paid a lot of attention to the relation between the built environment and community building and more recently, the relation to happiness. In the Netherlands, it is assumed that the built environment has an effect on the happiness and health of residents (RIVM, 2018). Literature provides several factors that seem to affect this relation, such as demography, planning process, management and design. Due to its specific focus on sharing and collectivity and its proclaimed effect on community building, co-living typologies form an interesting research topic. Empirically, the relation between co-living and community building has not yet been addressed. Therefore this research hopes to contribute to the existing knowledge base by offering a new perspective on developer-led typologies.

### **Societal relevance**

In many Dutch inner-cities, plans are being developed with smaller-than-average private spaces that private developers attempt to compensate by providing shared facilities and communal spaces. They are presented as a response to changing lifestyles, the rise of the sharing economy and the challenge of affordability of cities. Simultaneously, national and local interest in promoting healthy and happy citizens is growing (RVIM, 2018; Gemeente Utrecht, 2018). Policies are being implemented - e.g. *Healthy Urban Living* - in which facilitating social interaction is key for citizen well-being. Through spatial interventions governments try to positively influence human behavior. Here, promoting a sense of community has proved to be important (Wittebrood & Van Dijk, 2007).

Van Bueren (2018) notes that considering the amount of future developer-led co-living, learnings from resident-led co-housing can be very useful. Tummers (2017) rightly points out the risk that developer-led schemes tend to become closed off spaces, privatizing semi-public space, as happens in shopping malls. Analyzing the extensive literature on co-housing and the impact of contemporary collaborative housing is essential to understand how it contributes, or not, to urban planning goals (Tummers, 2017). Further, better understanding of how the living environment can foster a sense of community – the building block for social capital – is key if we want to create happy citizens.

Winston Churchill stated: "First we shape our buildings, and thereafter, our buildings shape us" (2018). Findings from this study can provide insights for public officials and private developers on how to stimulate social interaction and cultivate a sense of community by incorporating shared facilities and collective spaces in their plans. As a result, that might lead to a more social and sustainable living environment and a more efficient use of scarce urban space.

## 1.7 Thesis outline

This research is divided into six chapters that each contribute to the conclusions and recommendations provided in chapter seven. Most chapters start with a short introduction on the topics and structure discussed each chapter. The following chapter contains the theoretical framework that provides and relates literature in order to frame and define relevant concepts like co-living and community building in urban planning. Also, the relation between the built environment and community building is explored. This allows for making prepositions on the effects and for the creation of a conceptual model.

These prepositions on co-living effects will be empirically studied and through mixed methods the barriers and preconditions for successful implementation will be identified. In chapter 3 the methodological choices are justified and the research strategy is presented. In this chapter the criteria for case-selection are introduced and in chapter 4 these selected cases will be described in greater detail. Chapter 5 presents the results from the empirical study. Then, the results will be discussed and related to the finding from the theoretical framework. Finally, in the conclusion the research questions will be answered and recommendations for future research and praxis will be made.

## 2. THEORETICAL FRAMEWORK

In this chapter, the key concepts for answering the research question are further clarified based on existing scholarly literature. By reviewing existing theory on co-housing and neighborhood community, a relation can be made between the two different bodies of knowledge. The theoretical framework articulates assumptions on this relation which will allow for critical evaluation. First, a clear subdivision is made between resident-led and developer-led typologies. Objectives and characteristics of both typologies are described which allows for placing them in a framework.

Secondly, theories on the construct 'community building' are reviewed in order to elaborate on its importance on neighborhood level. Several community concepts and theories are treated separately and used to develop a framework for understanding the research problem. The key independent and dependent variables of this research will be identified and examined. Thirdly, literature on the relation between the built environment and community is discussed and factors that can influence the effect of the variables are identified. Finally, based on the theories, concepts and variables discussed, propositions are made and schematically presented in a conceptual framework.

### 2.1 Co-living

#### 2.1.1 CO-LIVING AS CO-HOUSING TYPOLOGY

In this thesis, a distinction is made between resident-led co-housing and developer-led co-living. In literature, the terminology on co-housing is quite inconsistent, which makes defining the term difficult. In general it is understood that co-living is a form of co-housing. Co-housing can be seen as the wide conception and contains a wide variety of initiatives occurring in this field of study. Varying from student dorms and monasteries to collective private commissioning and commune living (Tummers, 2017).

However, all co-housing projects entail a participatory development and/or a form of living together by a group of residents (Ache & Fedrowitz, 2012). Another common characteristic is that all typologies accommodate three or more unrelated people (Tummers, 2015). The 'co' is generally understood as 'collaborative', 'communal' or 'collective' (Vestbro & Horelli, 2012; Tummers, 2016). Collaboration implies there is a certain structure for (future) residents to work together in executing their project, from planning phase to operational phase. The communal aspect implies the emphasis on the fostering of a community and suggests a social connection between members. The collective element refers to the shared facilities and spaces that should be created by or for the residents (Vestbro, 2010).

Most scholars agree that co-housing must contain at least some characteristics of the elements mentioned above (Fromm, 2012; Krokfors, 2012; Tummers, 2016). However, an important distinction has to be made here. As Vestbro (2010) argues, the discussion is mainly on two dimensions: the way in which residents live together and the way in which (future) residents build and design their living environment together. This means that even though both are characteristics for co-housing, one can be present without the other. Fromm (2012) argues that there are many initiatives where the planning and building phase was collectively commissioned, without residents sharing spaces and facilities. Opposingly, there are many housing developments where facilities and spaces are shared on a daily basis, where future residents have not been instigators.

This subdivides co-housing into co-building and co-living, but it can also entail both (see Figure 1 for a schematic representation). This research specifically focuses on co-living typologies where future residents have not actively been involved in the planning and building process, but with a scheme developed by a professional party. This excludes co-housing typologies led by residents that contain some or many shared facilities. Therefore this study distinguishes two core typologies: *resident-led co-housing* and *developer-led co-living*.

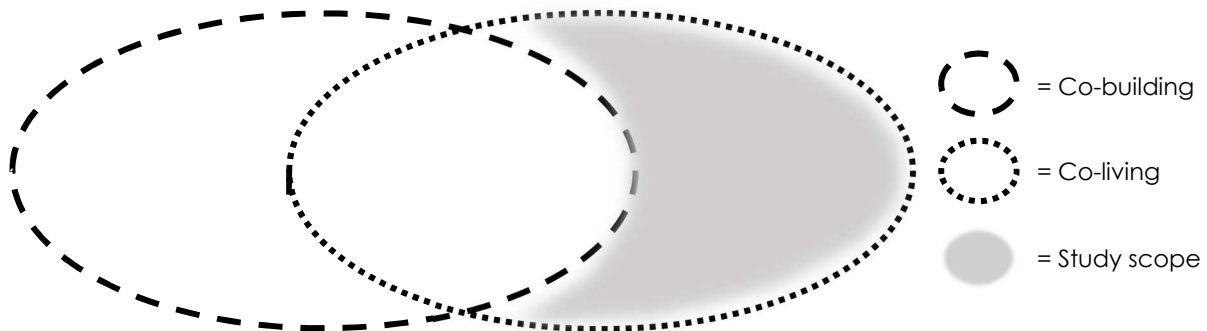


Figure 1. Co-housing distinguished in co-building and co-living (created by author)

Both housing typologies aim for an explicit focus on sharing, social interaction and fostering a sense of community (Tummers, 2017; Pop-Up City, 2018). A big difference between co-housing and co-living is that co-housing is often initiated bottom-up (Tummers, 2017) and is non-speculative (Sargisson, 2012). In contrast to co-living, which is developer-led and a product for commercial sale or rent. To better understand both typologies, the history, characteristics and critiques will be discussed. Finally, they will be placed in a housing spectrum based on particular characteristics.

## 2.1.2 RESIDENT-LED CO-HOUSING

### History

The concept of co-housing is typically distinguished in two waves and has its roots in mainland Europe. In the seventies, it emerged in particular in Scandinavian countries (Sargisson, 2012). Here, it was mainly a movement against prevailing social norms and built on egalitarian principles of sharing, equality and participation (Davis & Warring, 2016). First wave co-housing sought to restore disintegrating community values, better families, and to create 'villages' in urban context (Sargisson, 2012). Diverse co-housing typologies have been created during that period; 'Centraal Wonen' in the Netherlands, 'Kollektivehus' in Sweden and 'bofælleskaber' in Denmark (Tummers, 2017).

The second wave is more anti-radical and is looking for limited change with a focus on community within the existing status quo. Despite this, the second wave projects are a reaction to housing market issues and promote non-speculative, affordable housing, a limited eco-footprint, care for young, old and disabled, social cohesion and diversity and participation in urban development (Tummers, 2016). Tummers (2015) states that, in essence, traditional co-housing projects want to put a discourse into practice that is about diversity, solidarity and inclusion, instead of homogeneity and exclusion. She mentions examples such as the French 'Habitat Participatif'; German 'Baugruppen' and Dutch 'Collectief Particulier Opdrachtgeverschap'.

### Resident-led features & practices

Tummers (2017) concludes her study by identifying recurrent features of international co-housing initiatives, which are the following:

- Self-management, resident involvement
- Organizational unit overlaps spatial entity
- Mutualization and collaboration oriented
- Non-speculative, often looking for sustainable lifestyle
- Preferential mixed use and mixed income

Clearly, this still leaves a lot of typologies to be included in *co-housing*. But the developer-led type which is the scope of this study is not fully in line with these features. In co-living the organizational entity does not always overlap the spatial entity. Self-management or self-organization during the planning and construction phase is often missing. Also, the investor or operator has a pursuit for profit. In resident-led co-housing an important characteristic is the intention or motivation of the residents. Sargisson (2012) states that members have chosen to live in a community and share common goals and therefore are intentional communities. These particular intentions result in more social cohesion and higher social capital among residents (Vestbro, 2010).

Tummers (2017) has mapped the diverse forms of resident-led housing in the Netherlands. Based on the typologies that she identified Table 1 is created.

*Table 1. Resident-led co-housing typologies in the Netherlands (adopted from Tummers (2017))*

Typology / Dutch Terminology	Translation / Definition	Characteristics	Examples
<b>Centraal Wonen</b>	<i>Cohousing</i> Following the international co-housing model: see <a href="http://www.lvcw.nl">www.lvcw.nl</a>	First generation 1980s; community-building is the central factor. 6-8 households share kitchen and other every day; these groups cluster into larger projects with common facilities and management. Often in partnership with housing association (see: <i>Zelfbeheer</i> )	<a href="#"><u>Opaalstraat</u></a> , Nijmegen <a href="#"><u>Wandelmeent</u></a> , Hilversum
<b>Zelfbeheer</b>	<i>Self-management</i> Residents do not own the premises but form an association	Numerous projects in large cities, and in other regions for which WBGV is a partner. Mostly renovated or reused complexes	<a href="#"><u>Poortgebouw</u></a> , Rotterdam
<b>Tweede generatie co-housing</b>	<i>Second generation co-housing</i> individual units with high sustainability ambitions	Predominantly individual newly build housing around a common garden with shared facilities. Mixed-income, household type and sustainability measures	<a href="#"><u>Het Groene Dak</u></a> , Utrecht
<b>Woongroep voor ouderen</b>	<i>Community for seniors</i> Individual units with shared space and facilities	Collectively managed without structural institutional interference after building phase, but within standard rental procedures	<a href="#"><u>Wateringse Hof</u></a> , Den Haag <a href="#"><u>Woongroep</u></a> Vleuterweide
<b>Eco-dorp</b>	<i>Eco-village</i> Large scale initiatives that aim for holistic renewal: energy-transition, food-production and so on.	Movement since 1980's has gained momentum through the CPO_policies and the availability of brownfield sites such as former airports or institutions	<a href="#"><u>EVA-Lanxmeer</u></a> , Culemborg
<b>Collectief Particulier Opdrachtgever-schap</b>	<i>Collective Private Commissioning</i> Collective self-development, equivalent of <i>Baugruppe</i> (Building groups)	Predominantly individual home-ownership, often during design stage common building parts, parking, playground or such are decided and remain in co-management after building.	<a href="#"><u>Strijp R</u></a> , Eindhoven <a href="#"><u>ELTA</u></a> , Amsterdam

### 2.1.3 DEVELOPER-LED CO-LIVING

#### History

Developer-led types of housing, where smaller private space is compensated with shared facilities, are on the rise. Since it is a relatively new typology, a clear scientific definition is missing. Arguably, it stems from co-housing, since its practice is built around shared values and objectives and justifies compromises on personal freedoms. However, contemporary co-living is also considered a response to the trend that the younger generation is priced out of urban centers (Green, 2017). *Micro-living*, *shared living* and *co-living* are terms used in publications that intend to describe housing with relatively small individual space and various collective spaces (Dopper & Geuting, 2017; Pop-Up City, 2018). In this study a broad definition is used that incorporates all developer-led housing typologies that intentionally provide shared facilities and collective. Henceforth, 'co-living' is the term that will be used to describe this typology.

Some publications present it as a new 'innovative solution for urban dwelling' (Pop-Up City, 2018). Even though it is based on some of the same trends that sprouted co-housing, clearly co-living is more of a top-down response to market demands instead of a bottom-up initiative based on radical societal aims. In most cases, it is characterized by targeting a particular generation or lifestyle: *millennials* (Pop-Up City, 2018). Here, a broad definition of the term *millennial* is used, that corresponds to the definition of the Cambridge Dictionary (2018); "a person who was born in the 1980's, 1990's, or early 2000's".

#### Drivers for co-living

The boom in co-living can be explained by several housing market challenges such as the growing urbanization, rising living costs and the transformed notion of ownership. These challenges have led to apartments becoming much smaller and have forced many city dwellers to seek alternative types of housing (Wood, 2018). A distinguishing factor that separates this new typology from former models is a shift in the procurement model through which they are commissioned and built. Developers, entrepreneurs or even start-ups offering tenant-ready units are replacing community-initiated activism as the main drivers of sharing (Wood, 2018). The three main drivers for co-living, identified in publications and literature, are explained next.

#### URBANIZATION AND DENSITY

In 2050, about 68% of the human population will live in urban areas (United Nations, 2018). More and more households favor the benefits of the city over those of the countryside. Further, it seems that young people who move into the city for their career stay longer than before, they do not move back to the countryside. This has put increasing pressure on the urban housing market (Dopper & Geuting, 2017).

#### COST INCREASE

Because of this massive urbanization in many Western cities, the young generation is being increasingly priced out of urban centers and desirable locations due to the cost of living (Green, 2017). On average, in the Netherlands, forty percent of renters' income is spent on rent (VNG, 2018). This is higher than the recommended percentage by the National Institute for Family Finance Information, which is thirty three percent (Nibud, 2018). On top of this, supply cannot keep up with the growing demand for housing in the Netherlands. Because of this pressure on the Dutch urban housing market, households must do concessions: either compromise on location, or compromise on living surface. The Dutch Central Bureau of Statistics (2018) showed that small apartments (<50 sqm) are getting increased attention by urbanites.

### CHANGING DEMOGRAPHY AND LIFESTYLES

Several demographic trends, in combination with changing priorities in lifestyle shift the balance from living space to an urban location, matching the desired living identity (Dopper & Geuting, 2017). Since 2007, the amount of freelancers in the Netherlands has doubled and this trend is expected to continue (CBS, 2018). The millennial generation has a big preference for rent, partially because they do not have a permanent job and are not tied to a specific place (Nibud, 2018). Also, millennials are living alone longer, resulting in an increasing demand for single-person households (Figure 2). It is expected that in 2040, 42% of Dutch households will be a single-person household (CBS, 2018). These single-households will include many elderly, but the number of millennials that live alone is increasing too.

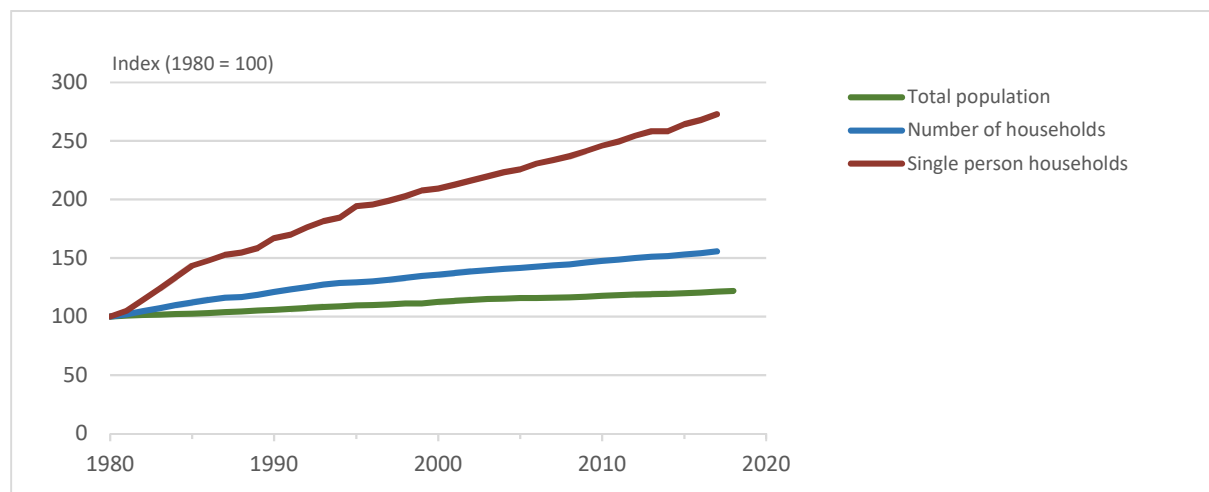


Figure 2. Total population and single-person households (CBS (2018))

The flexible and urban lifestyle of millennials implies that young, well-educated households choose experience over ownership (Morgan, 2015). Besides affordability, the convenience and community are expected to be important drivers for millennials to choose for co-living. A publication on co-living in Western Europe states that approximately fifty percent of the people choose to live there for the services and convenience where the other fifty percent prioritized "the community" (Pop-Up City, 2018).

### Developer-led features & practices

The most distinctive co-living developments are often developed by start-ups. Disruptive examples are Common, Roam, WeLive or Roomi. They responded to a market-demand and to a growing group of *digital nomads* that have an international and place-independent lifestyle (Pop-Up City, 2018). The difference between housing typologies that are also characterized by small private spaces and shared facilities is that disruptive co-living offers an all-inclusive concept with only short-stay, flexible contracts. Which makes these upcoming disruptive type of co-living another housing product that distinguishes itself from traditional housing.

However, as stated before, more traditional real estate or housing developers are now too creating schemes with shared facilities and collective spaces. They are providing more affordable housing for a group – millennials – that otherwise will not be able to find suitable space. Also, scholars signal a trend that the younger generation is more sensitive to living identity and is more attracted by the city (Dopper & Geuting, 2017). Urban environments better suit their flexible lifestyle and the size of their private living area is inferior to its location. This only increases the pressure on the housing market for this generation.

Tummers (2017) argues builders and developers have responded to the demand for alternative housing typologies with shared facilities and collective spaces. Since developer-led co-living is a relatively new concept, it is hard to identify different typologies with clear boundaries. Clearly, co-living practices vary for example in size, length of stay and to what extent things are shared. Table 2 offers several Dutch and international practices that comply to the features mentioned or are labeled in literature or publications as co-living.

*Table 2. Examples of contemporary developer-led co-living typologies (based on Pop-Up City (2018))*

Co-living development	Location(s)	Characteristics
<b><u>The Collective</u></b>	London, UK	Private developer and operator offering small fully furnished apartments on city locations. All-included rental, including events and gym membership and community manager organizing activities. Length of stay is from a couple of days to about a year.
<b><u>Roam</u></b>	Tokyo, Bali, Miami, London & more	Roam offers a network co-living spaces that offers full-service package. It has a particular focus on business nomads and the luxury end of the market. Fully furnished private rooms, including bathrooms are compensated with communal areas.
<b><u>Nest</u></b>	Copenhagen, DEN	Housing 21 entrepreneurs in individual apartments. Similar to woongroep (see Table 1) but characterized by their residents: young ambitious entrepreneurs. Private bedroom, but all other facilities are shared.
<b><u>WOON&amp;</u></b>	Amsterdam, NL	Private developer offering relatively small owner-occupied apartments. But the ground floor offers several shared functionalities. There is a host, residents application, and many facilities or things you can use, but do not want to own.
<b><u>Little Manhattan</u></b>	Amsterdam, NL	Developer-led housing scheme with 870 dwellings, focused young professionals. Owned by an investor and operated by a student housing provider it is complemented with several communal facilities.
<b><u>Change=</u></b>	Amsterdam, Utrecht, Rotterdam & more	Social housing scheme with a focus on young lower educated workers. Presented as a housing solution for a target group that are often forgotten in housing policy. A typology presented as Living as a Service. Small private spaces are complemented with communal facilities and services. But residents need to meet the selection criteria.

## 2.1.4 SOCIAL AIMS OF CO-HOUSING

Housing and planning context can vary from country to country, but the intentions and ideology of inhabitants of co-housing are remarkably similar. Tummers (2015) stated that most cases of co-housing emerged from a certain ideal and can be a practical solution for spatial challenges in many European cities. Challenges such as declining social cohesion, an aging population, lack of local identity, resilient local economy, energy transition and participation in urban development. Empirical studies report that co-housing developments produce active and diverse communities that can enhance social interaction and combat loneliness, isolation and disconnection (Jarvis, 2011; Krokfors, 2012; Vestbro & Horelli, 2012). In 2016, scholars summed up the following recognized benefits of co-housing (Jarvis, Scanlon, & Fernández Arrigoitia, 2016):

- 1) New social practices, technical processes and collective learning can reduce energy costs and improve housing performance;
- 2) Because common household appliances and functions are shared, co-housing is a more affordable cost of living, in terms of food, utilities, goods and services;
- 3) It increases the social and physical resilience of residents and wider communities through the provision of shared facilities
- 4) Enhanced sense of place, increased self-awareness and sharing community knowledge.

Ideally, these benefits are achieved in developer-led co-living too, but thus far no research has been conducted to confirm this. It is generally claimed that by sharing the process of collaboration and self-organization in resident-led co-housing social connections become tighter (Ache & Fedrowitz, 2012). Even if there is no ambition to pursue an intentional community, stronger relations can be achieved. This would mean that only the process of designing, building and managing the project is responsible for desired social outcomes. In co-living, residents generally do not know other members in advance. These projects must thrive from other aspects, based on living together (Groeneveld, 2018). But in general, it is assumed that also co-living is able to decrease modern societal urban issues, such as alienation and social isolation and fosters social cohesion (Tummers, 2016; Vestbro, 2010).

### 2.1.5 CO-HOUSING SPECTRUM

Based on the typologies identified in Table 1 and Table 2, a co-housing spectrum can be created in which typologies are placed based on the expected length of stay and the development process. This shows there is an overlap in some typologies, confirming the unclear boundary between co-housing and co-living. In general, co-living is characterized by its more flexible and short-term stay and its top-down, developer-led process.

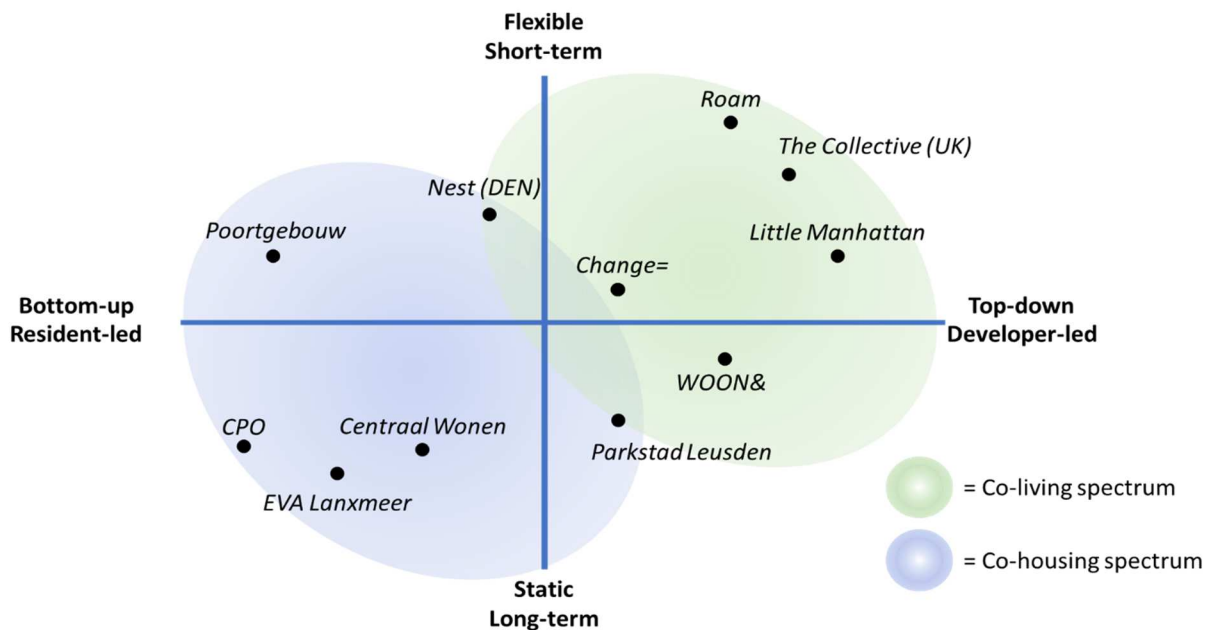


Figure 3. Framework for co-housing typologies on length of stay and type of process (created by author)

### 2.1.6 WHAT IS BEING SHARED?

The opportunity for sharing facilities and spaces in co-housing and co-living is regarded as one of the most important qualities. It provides cost-reductions and can enhance social interaction (Williams, 2005). There is no regulation on what should be shared or collectively owned in co-housing and co-living projects. But despite every project being unique, two themes are generally found on what is being shared. The first is making desired (luxurious) services or spaces that are too expensive for an individual, collective. The second is making spaces that are undesired to have in a personal living space, such as guest rooms and event rooms, collective.

Based on the literature and information from websites of existing co-living developments, Table 3 provides an overview of what is being shared in co-housing and co-living schemes. It differentiates in planning process and management, collective spaces and facilities, and in services and activities.

Table 3. Overview of shared features in co-housing and co-living (created by author)

Feature	Co-housing	Co-living
<b>Planning process &amp; Management</b>	Design process Building phase Financial Risk Homeowner's association	Co-creation Community manager Condo-board Co-op
<b>Collective spaces &amp; Facilities</b>	Communal garden Common house Laundry-facilities Living Room Kitchen	Living room / guest room Work / study room Communal garden Laundry service Tool library Gym/fitness Kitchen Swimming pool Rooftop terrace
<b>Services &amp; Activities</b>	Self-organization Maintenance	Concierge Dry-cleaning Cleaners / House keeping Moving service Digital platform Daycare service Activity manager

### 2.1.7 CO-LIVING CRITICISM AND GATED COMMUNITIES

Even though contemporary co-living offers a promising alternative housing model, its positive effects are still disputed. Both in science as in society, co-living finds its critics. The most common criticism on developer-led co-living is pointed out by Tummers (2017, p254):

*"They tend to become closed-off spaces, privatizing semi-public space, comparable to shopping malls, in addition becoming financially inaccessible."*

Co-housing typologies are compared to gated communities by Chiodelli (2015) who argues they share characteristics. Others highlight negative aspects such as that the common spaces that are privately used or controlled can withhold access for neighboring residents. Ruiu (2014, p324), on the other hand, states that in co-housing "safety is in knowing your neighbor, and not in walls and barriers". At the same time, some Dutch co-housing communities had a safety system for entering (Bouma & Voorbij, 2009) and it can be expected that with co-living this is the case too.

Despite this, there are organized activities, meetings and services within cohousing communities which often are "public" and potentially accessible to people who do not belong to the community (Ruiu, 2014). The primary aim is interaction, whereas gated communities are focused on protection (Groeneveld, 2018). Furthermore, it is understood that certain co-living facilities cannot be realized without the wider neighborhood, such as more commercial facilities like bars, café's and daycare facilities (Tummers, 2015). Features such as these promote the interaction amongst both residents and the neighborhood and are a positive asset for the project (Fromm, 2012).

## 2.2 Community Building

### 2.2.1 DEFINITION

Gusfield (1975) distinguishes between two major uses of the term community. Firstly, it concerns the territorial and geographical notion of community – neighborhood, town or city. The second is 'relational', without reference to location. Similarly, Chaskin & Joseph (2010) distinguish the spatial unit and the social unit. The two usages are not considered to be mutually exclusive. Nevertheless, the previous paragraph showed that both co-living and co-housing aim to foster the local community. Therefore, this research focuses in particular on geographical or spatial communities; neighborhoods.

McMillan and Chavis (1986) have described a 'sense of community' as a feeling that members have of belonging and being important to one another and share a belief that members' needs will be met by the commitment to be together. As a concept it seeks to capture the collective value of the processes and attachments that exist between people and their social milieu (Nasar & Julian, 1995). Chaskin and Joseph (2010) argue that community, amongst other definitions, can be seen as symbolic unit of identity and belonging and as context for the developments of social norms, social networks and social capital. Concerning neighborhood effects, community is invoked as a unit of belonging and action that can be mobilized to effect change. Change in which the resources, skills, priorities, and participation of community members can be drawn on to inform, shape, and contribute to solutions to social problems. And as efforts to improve neighborhood life as it is affected by both material circumstances and social dynamics (Chaskin & Joseph, 2010).

### 2.2.2 IMPORTANCE OF COMMUNITY BUILDING

Even though defining what is and builds community is difficult, in general it is agreed upon it is something important and worth striving for. Mackay (2010) argued that although trends in globalization, communication and mobility have challenged many traditional notions of 'local community', the corollary is that still people are said to be increasingly looking for local belonging and identity in a modern and changeable world. In the face of globalization and individualization, there still is a growing desire for security, social bonds and local community (Castells, 1996). Still, studies show that despite millennials being considered an extremely well connected generation, they are feeling increasingly lonely (AXA, 2014). On top of that, scholars found that for millennials identified as lonely the chances of facing mental health problems doubled and their chances of unemployment increased by 38% (Matthews, et al., 2018).

These alarming findings show the importance of fostering community on a neighborhood context. Because a sense of community is not just seen as a 'societal nicety'. It has been linked to a range of community level outcomes, including neighborhood attachments, community involvement and participation and improved coping skills (French, et al., 2014). Local roots, community ties, and strong emotional bonds with one's home place have been described as important sources of well-being (Gustafson, 2001).

Thus, urban planners have an important task in identifying and creating the conditions that foster and strengthen a sense of community within residential neighborhoods. Since the late 1980's 'community building' approaches have been applied to address poverty and revitalize neighborhoods (Chaskin & Joseph, 2010). Partly for this reason, in the Netherlands, national and local policy is written to tackle loneliness and prevent social isolation (Rijksoverheid, 2018; Gemeente Amsterdam, 2018). Next to programs from the ministry of Social Affairs, response

comes more and more from urban planning branches and focuses on the relation between the built environment and community building.

The basic principles behind efforts of 'community building' are fostering social interaction and networks of support among community members, build social capital and enhance a 'sense of community' (Chaskin & Joseph, 2010; French, et al., 2014). This shows 'building community' is complex and consists of several components that are seen as contributing factors.

## 2.2.3 COMPONENTS OF COMMUNITY BUILDING

Components that keep appearing in literature and policy on what neighborhoods should cultivate are: social cohesion and social capital; social interaction; place attachment; and sense of community (Williams, 2005; Tummers, 2015; Sanders, 2014). In many cases these components are considered to be related or mutually reinforcing.

### *Social cohesion and social capital*

Putnam (2000) makes the relation between social cohesion and social capital, which is defined as social networks and trust. Most consider social capital to be a building block or a consequence of social cohesion (Berger-Schmitt, 2002; Côté & Healy, 2001). Definitions for cohesion include various levels of participation that generate community: social (informal social relations), civic (in organizations) and political participation (in the sphere of the state) (Schmeets & Te Riele, 2014). Due to the neighborhood aspect, this study focuses on the informal social relations.

A definition of the Dutch Central Bureau of Statistics (CBS, 2015) is: 'networks together with shared norms, values and understandings that facilitate cooperation within or among groups.' This definition shows that it is about ties of people within and between communities, respectively *bonding* and *bridging* (Putnam, 2000).

### *Social interaction*

Having social interaction and maintaining social contacts is an important indicator for social participation and essential in the framework of social cohesion (Te Riele & Roest, 2009). There is no doubt that social contacts improve social cohesion and positively contribute to several societal aspects, like safety, livability and democracy (Putnam, 1995; CBS, 2015). People need social interaction, they want to be part of a group, share experiences and be able to ask for help or support (Argyle, 2001; Mars & Smeets, 2011). Williams (2005) further states that social interactions provide residents living in a community with knowledge about their fellow residents and social structure. This in turn helps to build trust between residents as well as common rules and norms (Pretty & Ward, 2001).

A previous study by Weijss-Perrée, Van der Berg, Arentze, & Kemperman (2017) also showed that the number of social interactions is positively related to social satisfaction. Although social relationships with neighbors are usually regarded as weak relations, findings suggest that these 'weak ties' are important. They can contribute to more familiarity, more place attachment and feelings of safety. Thereby providing a bridge to stronger social relations (Vermeij, 2008). In addition, it is recognized that people discuss important matters with weak ties and can feel supported by them (Small, 2013; Cramm, Van Dijk, & Nieboer, 2012). Thus, social interactions within the neighborhood is considered to encourage the growth of social capital.

### *Place attachment*

Research into place attachment suggests that sharing the symbolic or emotional meanings of a place with others is one of the foundations of community (Sanders, 2014). People have a need to emotionally bind with places (Altman & Low, 1992) and people (Weiss, 1991). Van

Zoest (2006) distinguishes 'place dependence' and 'place identity'. With place dependence people bind with others to a place due to the activities that are connected with it. It concerns a certain practical bond; getting together in the same bar, regularly socializing with neighbors, getting together at the petting zoo (Sanders, 2014). In place identity people create an emotional tie with a place, because it is connected to the own identity or related to personal values (Korpela, 1989; Sanders, 2014). Examples are a statue, church square or an old tree (Van Zoest, 2006).

An important notion here is that the value and place attachment of a place increases in time. Residents only value something after a while or start associating the place with stability and continuity and attach value to that (Van Zoest, 2006). The flexible and short-stay characteristics of co-living, identified in the previous paragraph, might limit the place attachment. Human geographers, environmental psychologists, and community sociologists have often regarded place attachment as good and mobility as potentially bad. Previous studies have mostly associated mobility with unrootedness and social disintegration (Gustafson, 2001).

However, Gustafson (2013) states that long-time residents may have a more traditional or passive attachment, whereas mobile residents may have a more active, reflected attachment, expressed in a deliberate choice of place. He makes the distinction between 'places as roots' and 'places as routes'. Place as roots represents a traditional understanding of attachment to a home place, based upon long-time residence, strong community bonds, and local knowledge. The conception of place as routes suggests that places may also be important to less rooted, more mobile persons. In that case, places may be meaningful as expressions of a person's individual trajectory and identity, by representing personal development, personal achievement, and personal choice rather than roots and continuity.

### **Sense of community**

As a concept, 'sense of community' is more psychological and relates to the extent to which people feel they are part of a social community. This can be experienced in the context of a local neighborhood (Nasar & Julian, 1995). Research by McMillan and Chavis (1986) provides four factors that are relevant here:

1. Participation (feeling as a part of and being integrated in a social community)
2. Influence within that community
3. Integration and being able to fulfill one's own needs in the community
4. Having a shared emotional connection with other members of the community

The extent into which people feel attached to a place or have a sense of community varies (Van Zoest, 2006). Relph and Charles (1976) distinguished existential 'insiders' and 'outsiders'. Insiders are people to whom the place has a symbolic-emotional value and who often have a more than superficial knowledge about a place and experience a strong sense of community. Contrary, existential outsiders are people with a more superficial connection to their social and physical environment.

## **2.2.4 COMMUNITY CRITERIA**

In conclusion, scientific literature showed that multiple components - social capital, social cohesion, social interaction, place attachment and sense of community - contribute to community building in greater or lesser extent. It is still disputed to what extent they have a correlating or causal relation, but most scholars agree they are mutually reinforcing. Consequently, based on these identified components it is possible to establish criteria that can be perceived and will have a positive effect on community building.

Previous studies into community building components often used surveys or questionnaires with statements or questions that allow quantitative analysis. For each construct - social cohesion, social capital, place attachment and sense of community – these quantitative studies have been analyzed. Their surveys and questionnaires use parameters that can be used to identify variables. The quantitative studies and the research constructs have been selected based on their particular focus on the neighborhood scale. Table 4 shows the authors of the studies and the measured constructs.

*Table 4. Overview of studies on community building and studied construct*

<b>Author</b>	<b>Construct</b>
Maass et al. (2016)	'Neighborhoods Social Capital'
Weijis-Perée, van den Berg, Arentze & Kemperman (2017)	'Self-Perceived Social Cohesion'
Gemeente Amsterdam (2017)	'Social Cohesion'
Weijis-Perée, van den Berg, Arentze & Kemperman (2017)	'Place attachment'
French, et al. (2014)	'Sense of Community'

The different questionnaires that are used to measure these constructs show several similarities between the various statements and questions. This confirms the mutually reinforcing characteristics of the community components. An assessment of these questionnaires and surveys (see Appendix III) showed that in general they can be divided into variables that concern community *feelings* and variables that concern community *behavior*. This subdivision in behavior and feelings allows for further deconstruction into qualitatively measurable community criteria.

### **Behavior**

Variables that concern behavior can be attributed to all constructs. It is about the amount of contacts, visits or small-talks with neighbors. About participation in, or organization of, neighborhood events. Next, it is about borrowing things and exchanging favors with neighbors, about involving people to get things done or taking care of somebody's house when they are away. In other words, it is about social interaction, social activities and social engagement.

### **Feelings**

Most of the statements in the quantitative studies are about feelings. This shows that community, to a great extent, is something subjective or personal. The statements concern the extent to which people feel a bond with the neighborhood, identify with neighbors and feel part of a community. Also about feelings of mutual support, trust and the expectation of people willing to help each other out in case of an emergency. Next, it concerns the extent to which they are satisfied with their living environment and the people they share it with. In summary, about a sense of community, solidarity and satisfaction.

## 2.3 The Built Environment and Community Building

### 2.3.1 URBAN PLANNING AND COMMUNITY BUILDING

Previous paragraphs already indicated that there is a relation between the built environment and community building. This confirms the important role of architects and urban planners in society. Even in the field of public health attention for the built environment is growing. Dutch researchers found that the direct living environment has a big impact on people's health and well-being (Huber & Staps, 2016). However, attention to the human scale in urban planning is not new. One of the earliest movements that is built around the idea that the built environment affects people's feelings and behavior is called New Urbanism (van Baars, 2017). One of the key aims of this movement is to cultivate social cohesion by neighborhood design (LeGates & Stout, 2011).

The New Urbanist movement was inspired by the European city in the 17<sup>th</sup> and 18<sup>th</sup> century (Jabareen, 2006). In that time, cities were less anonymous and massive and urban dwellers could easily get to know each other. Short distances allowed for more social interaction, rich and poor lived together and all this was considered favorable for human health and the environment (Wheeler, 2002). Architect Jan Gehl (2013) stated that cities then were better suited for the human scale than modern cities. Strong social bonds, more social interaction and community were a consequence. Another source of inspiration is the urban sociologist Jane Jacobs, author of the book *Death and Life of Great American Cities* (Jacobs, 1961). She advocates lively streets, sidewalks, parks and plinths, walkability of neighborhoods, mostly as a response to the negative consequence of *urban sprawl* and suburbanization. Putnam's theory (2000) on the individualization of American society was seen as an opportunity by many urban planners or architects to introduce alternative models with more focus on the human scale.

#### *New Urbanism and co-living principles*

The co-living typology, which is partly based on principles of cohousing, exhibits many of the characteristics of New Urbanism in terms of both objectives and design strategies (Torres-Antonini, 2001). Both strive for social objectives like building community, encouraging interaction and creating social connectedness, convivial spaces and diversity of experiences. Also their environmental objectives show similarities; reducing car use, reducing consumption and creating dense and space-efficient urban developments (Williams, 2005). Design strategies are also similar, because both are based on social design principles. This means that they aim for higher densities, mixed use and the creation of convivial public spaces and pedestrian-friendly environments. Torres-Antonini (2001) states that both approaches contain a specific prescription for design that enhances community. Here, attention to the collective characteristics of the neighborhood is important.

### 2.3.2 THE COLLECTIVE DOMAIN OF THE NEIGHBORHOOD

The collective domain of the neighborhood is a socio-spatial space in which codes of conduct apply that deviate from those in the private and public domain (Mayol, 1998). In this domain, people face an inescapable commonality. But the role of the neighborhood in people's daily lives has declined (Nio, 2016). Nio states that due to increased mobility and new communication technologies people are less dependent on their neighborhood and neighbors. Spatially, the wider orientation of residents leads to a declining importance of local communities as social framework.

However, in the neighborhood one cannot avoid living together with others and therefore a right balance between proximity and distance is key to protect private life (Nio, 2016). Not too close, not too far away, so that people do not suffer from each other, but neither lose the

benefits of good neighborhood relations (Mayol, 2010). This continuous provision of proximity and distance results in an always present potential conflict (Reijndorp, 2015). In his research, Nio (2016) specifically focusses on suburban living, which is characterized by values like privacy, stability and security and norms like social distance and avoidance. This is slightly in contrast with values and drivers that were identified in co-housing and co-living literature.

But both in inner-cities and in suburbs the neighborhood has functional and social importance (Nio, 2016). First, functional in relation to the daily activities of residents. In particular children, elderly and disabled people are focused strongly on the functional side of their direct living environment. Second, the social importance of the neighborhood can be analyzed by concepts like 'weak ties' (Weijss-Perrée, Van der Berg, Arentze, & Kemperman, 2017). Functional contacts can vary from borrowing tools to taking care of plants and pets during holidays (Vermeij, 2008). These practical relations or 'weak ties' contribute to a sense of security and belonging in the neighborhood (Ruiu, 2016).

### 2.3.3 FACTORS OF INFLUENCE

Based on New Urbanism literature and studies on community effects in co-housing several factors can be identified that influence the effect of community building. William's (2005) distinguishes social and physical factors and claims that both affect the amount of community building, in particular in co-housing projects. This is in line with other existing literature that finds that both physical and social characteristics of the living environment can influence the social network of individuals (Weijss-Perrée, Van der Berg, Arentze, & Kemperman, 2017). Social factors include formal aspects like the organizational policies and structures (e.g. decision-making processes and organization of activities) and informal social factors like resident build-up and demography. Physical factors comprise both spatial and design factors. Due to these differences, physical and social factors will be discussed separately.

#### 2.3.4 PHYSICAL FACTORS

##### *Proximity*

Social interaction is said to be encouraged by functional and physical proximity (Gehl, 1987) and it greatly influences patterns of socializing (Homans, 1968). But with regard to density, previous studies show mixed results (Weijss-Perrée, Van der Berg, Arentze, & Kemperman, 2017). According to some, higher densities increases face-to-face and spontaneous interactions between local residents (Delmelle, Haslauer, & Prinz, 2013). In contrast, other findings showed that a higher density negatively affects the number and quality of social interactions. It is assumed this is because in less dense areas, people probably have more need to interact with neighbors, because of the low supply of facilities in the area (Brueckner & Largey, 2008). At extreme high densities residents can feel they have less control over their social environment and are inclined to withdraw from the community, which can result in less social cohesion. This relation between physical proximity and functional relationships is found to be further influenced by social factors such as social similarity, or even homogeneity (Abu-Gazze, 1999; Williams, 2005).

##### *Semi-private space*

One instrument that limits anonymity is the use of buffer-zones between private and public space, also called semi-private space. Regarding this, gardens, veranda's or lobbies are found to be important in terms of social interaction. Communal outdoor spaces can be included in a variety of spaces within the development and provide residents with opportunities for social encounter and help them build networks (Kuo, Sullivan, Levine Coley, & Brunson, 1998). Semi-private spaces can protect residents from overexposure to the community, which may lead to

withdrawal and less community building (Williams, 2005). They can be used as spaces for social events and provide residents with an area in which to express themselves and their lifestyles (Abu-Gazze, 1999).

Concerning semi-private space, Van der Lugt (2017) focusses on the entrance of a building and calls these transition zones. Hertzberger (1991) describes the entrance of a building as the key element to connect areas of different status. Essential for the enhancement of social interaction is the careful design of the transition zone of buildings, the area in-between the dwelling and the street or public space. The transition zone ensures the gradual transition from a private domain (the dwelling) to the public domain (e.g. the street). It is crucial for creating public familiarity in a neighborhood. Public familiarity is, quite similar to social cohesion, the ability to recognize neighbors and being able to estimate their life style (Blokland, 2009). This means less or no transition zones in a neighborhood or complex results in less social contact between the residents.

### **Safety**

Buffer zones also increase the potential for surveillance, which in turn is seen as key to higher levels of social interaction. Williams (2005) states that resident's ability to see and hear others using public spaces outside of their home increases feelings of safety. And people who feel safe in their communities are more likely to spend time outside their homes, interacting with others, thus safety greatly influences sense of community (Laurie & Miller, 2012). This relates to what Jacobs (1961) calls *eyes on the street*. For example houses that are close to the street in a way that they can easily see the street. Communal areas that can be seen from various homes or angles can enable better surveillance and thus encourage social interaction and cohesion.

### **Quality and location of communal space**

Indoor and outdoor communal spaces provide excellent opportunity for social interaction and can cultivate social cohesion. They need to be of good quality and suitable for their use, but flexible at the same time (Abu-Gazze, 1999). Poor maintenance of communal facilities can reduce usage and social interaction. Poor hygiene and broken equipment have a negative effect on residents (Williams, 2005). And besides quality of the shared communal spaces, studies have found that aesthetics matter. The design and architecture of a neighborhood can influence residents' sense of community (The Happy City, 2018). Studies suggest that by designing visual complexity, more people are attracted and social interactions are promoted (Lund, 2002). Thus, the assumption is that architects and urban designers can foster uniqueness and support people's sense of belonging and attachment to a place.

Regarding the allocation of the communal spaces it is assumed that, since they are key activity sites, they should be places on shared pathways within residential areas to maximize interaction potential (McCamant & Durrett, 1994; Williams, 2005). This also relates to visibility and surveillance. A neighborhood designed around a main street or a central place shows a higher amount of social cohesion according to Pendola and Gen (2008). And even though proximity is said to promote social interaction, multi-story buildings do seem to reduce this in terms of short and spontaneous stationary activities (barbeques, communal gardens, eating outside private units or sporting activities). For residents in upper floors this is supposed to be because 'it is too bothersome to come down and go into public areas to join' (Abu-Gazze, 1999).

### **Community size and sharing threshold**

Next, the size of a community or the number of residents in a living environment also greatly influences social interactions (Fromm, 1991; Williams, 2005). Overall, it is claimed that in larger

communities, there are fewer social interactions. Mostly because residents are unknown to each other, as are their values and norms. Anonymity will result in residents being less inclined to interact socially within their home environment and will choose to interact with known contacts (workplace, school, club) (Williams, 2005).

Fromm's (1991) study shows that the number of residents that can potentially use communal spaces will also influence actual use. In most multi-family housing settings, residents report feeling less crowded and a greater connection with neighbors when semi-private common spaces are shared by no more than 12 adults and their children (Kuo, Sullivan, Levine Coley, & Brunson, 1998). The smaller a community, the greater its intensity and the more residents are willing to use shared facilities and participate in communal activities. Clustering is mentioned in literature as a solution to tackle anonymity and increase interaction, as happens in co-housing. Dividing large residential developments into smaller clusters of households can reduce perceived density and feelings of crowdedness (McCamant & Durrett, 1994). The ideal community size is assumed to be higher in housing models that include collective facilities and structures for sharing (The Happy City, 2018).

### **Dwelling size**

Co-housing literature suggests that less private space does encourage social interaction (Fromm, 1991; Williams, 2005). Because in smaller dwellings, residents are more inclined to spend time outside their unit. And if the locality provides them with social spaces and facilities in co-housing then the potential for interaction increases. If these spaces are missing, there will be no increase in socializing in the immediate community but residents seek that outside the neighborhood. Williams (2005) does find in her research that smaller private space only increases interaction if it is combined with limited private facilities in the dwelling (laundry, kitchen, dining).

## **2.3.5 SOCIAL FACTORS**

Socioeconomic and demographic factors are not taken into account in this study, but literature shows these could explain differences. For example, it is assumed that people with a higher income have a greater range of resources and therefore probably have more access to social contacts outside of the neighborhood and thus fewer neighborhood-based contacts (Moore, et al., 2011). Also, home ownership is found to positively influence the engagement and interacting with neighbors (Guest, Cover, Matsueda, & Kubrin, 2006).

### **Participation in planning process**

Research shows that when members of the public are given the opportunity to express their thoughts regarding a new development, it has a positive impact on the way they perceive and experience this new place (Soney & Elgersma, 2007). Public participation in the planning processes strengthens social relationships and grows trust among and between participants, governments and developers (Abelson & Gauvin, 2006). In designing for community building, the interaction between initiators and architect(s) becomes all the more important. When future residents are involved in the design process, there is 'more acceptance' (Meltzer, 2000) or 'less conflict' (Williams, 2005) once the building is inhabited. Of course, this does not apply exclusively for co-housing; urban planning scholars have demonstrated for decades that including user-groups leads to more adequate design proposals (Healey, 2003).

### **Residents participation in management & activities**

Influence in the decision-making process creates ownership and is generally understood to increase community building (Fromm, 1991). In co-housing, Williams (2005) confirms that the exclusion of residents in management and activities can reduce interaction and create

conflict. But in general, participation in shaping the living environment, fosters a sense of empowerment and connection (Hassen & Kaufman, 2016). Providing opportunities and places for meetings and recreation strengthens residents' sense of belonging. Williams (2005) does note here that it can go both ways. Involvement in decision-making can bring residents together, build trust and ensure people feel more empowered. These are bases for social capital and community building. However, her research also shows that it can create conflict or 'meeting fatigue' which will reduce social interaction and a sense of community on the long term.

Sometimes, in contemporary shared living schemes a 'community manager' or 'social concierge' is appointed to facilitate shared activities. In full-service co-living this is provided based on the motivation that people don't just set out to 'build social capital' (The Happy City, 2018). In order to get people to work, play and create together, which strengthens people's sense of belonging, community managers actively involve residents. This resident involvement in fun or meaningful activities can form and deepen relationships.

### **Homogeneity**

Some literature suggest that heterogeneity in neighborhoods leads to less social cohesion (Putnam, 2007). Bolt and Torrence's (2005) study shows that striving for social cohesion is not a good motive for housing differentiation. In neighborhoods where social cohesion increased (Zuilen in Utrecht, GWL-terrein in Amsterdam) this was caused by homogeneity of the residents. They assume that socio-cultural heterogeneity can lead to 'peaceful coexistence' or 'living apart together'. The scale in co-living is different and besides that homogeneity can be about more than socio-cultural characteristics.

This is confirmed by Abascal and Baldassarri (2015) that claim it is not merely diversity or heterogeneity that influence social cohesion. However, Williams (2005) concludes that a certain homogeneity is important for fostering community building. She states that homogeneity in terms of residents attitudes and values is important in cultivating social cohesion, but variety in terms of affluence and household type actually increases social interaction in cohousing communities. A greater diversity of residents ensures greater diversity in terms of the resources that each resident has to offer other residents.

### **Selection of residents**

In many co-housing developments, the homogeneity of residents in terms of their values is ensured through self-selection (Groeneveld, 2018). Based on the proclaimed importance of homogeneity as the basis of community building several co-living developments use a resident selection procedure. Some focus on a particular field of work and select based on their qualities and skillset. Others select based on their motivation to live in a shared environment. Of course, most developments are marketed for a certain target group such as digital nomads or expats. In that case, the price and average length of stay creates a form of exclusivity which also serves as a selection.

### **Age of community**

Co-housing literature suggests that younger communities have more conflict and less social interaction. In co-housing projects organizational immaturity reduces potential for social interaction (Williams, 2005). This relates to the recognition that common memories and feelings about the neighborhood increases attachment to a place (Cramm, Van Dijk, & Nieboer, 2012; Weijss-Perrée, Van der Berg, Arentze, & Kemperman, 2017). Logically, the length of residence is of importance. People who live for a longer time in the neighborhood probably have more time and desire to bond with other local residents.

## 2.4 Conceptual Framework

Based on the discussed theories on co-living, community building and the synthesis between the built environment and community, a conceptual framework has been created (Figure 4). This framework reflects the presumed relations that follow from the literature review. The core concepts are displayed in the boxes and connected to each other by arrows, that visualize a presumed causal influence. At its core, this model shows the relation between the independent variable co-living and the dependent variable community building. Under developer-led co-living three cases are shown that are expected to have different characteristics and will be discussed further in the next chapter. Based on literature, community building is further subdivided in feelings and behavior that both have different components. Finally, the social and physical factors, resulting from previous research, are expected to influence the effect of co-living on community building.

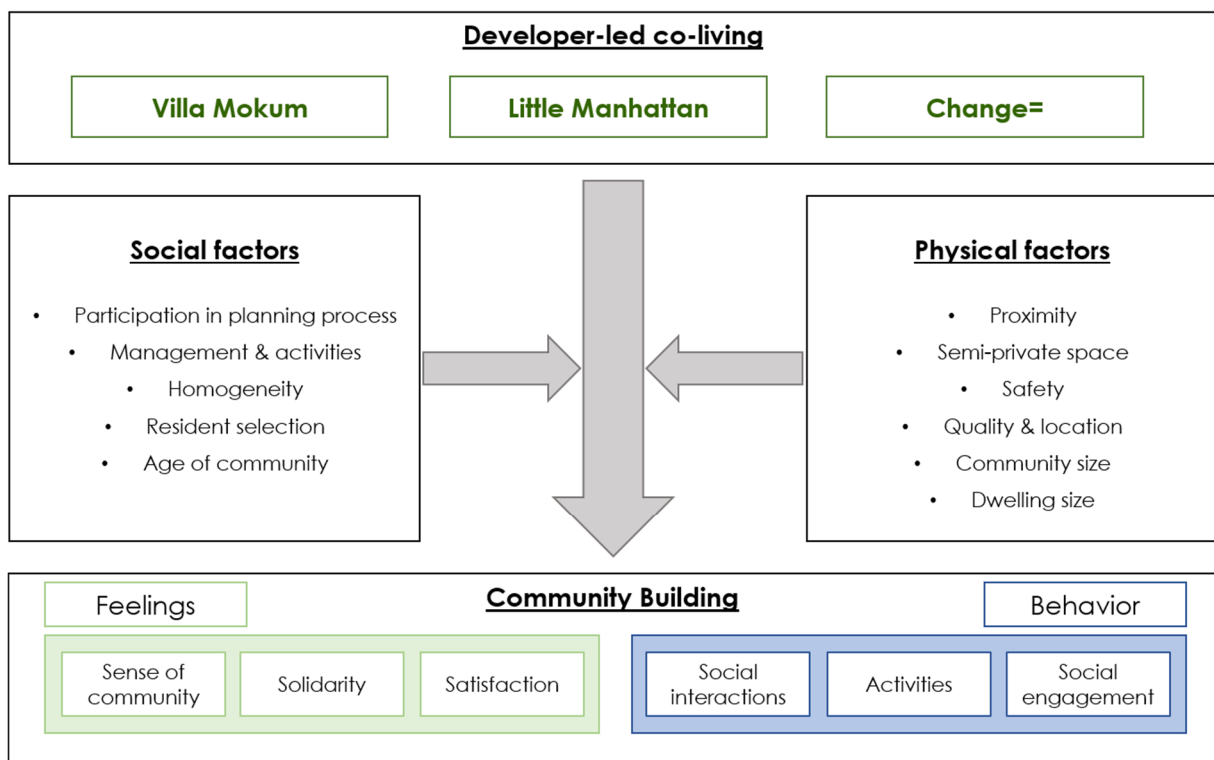


Figure 4. Conceptual Framework (created by author)

### 3. METHODOLOGY

This chapter explains all the methodological choices that are made in this study. First, the research strategy is discussed and then the research design is described. The approach for case-selection and the sampling of respondents is discussed and it is explained how the data will be collected and analyzed. The last part of this chapter discusses the choices in light of the reliability and validity of the research.

#### 3.1 Qualitative research strategy

From the literature review derives the notion that the observed reality, the effects of collaborative housing on community building, can be interpreted in different ways between participants. This calls for a constructivist ontological framework, often called interpretivism (Bryman, 2012). This means that the inherent meaning of social phenomena is created by each observer or group and therefore one can never presume that what is observed is interpreted in the same way by all participants (Östlund & Kidd, 2011). This research philosophy, together with the nature of the research question leads to a research strategy with a qualitative nature. This has to do with the explanatory perspective and the holistic approach that concerns community building. It concerns a combination of social and physical variables that contribute to community building.

This holistic approach fits qualitative research, which also has a holistic nature. It is characterized by a wide and open perspective on the field of research. Potential disadvantages of a qualitative study are subjectivity and personal interpretation, even though the aim is to limit these as much as possible. This research attempts to study the relation between community building and the built environment. It will identify possible dependent variables (e.g. social cohesion) and independent variables (e.g. semi-private space) and evaluate the possible connection. That way this study can be used to formulate propositions and build hypotheses. The statistic relations can be studied quantitatively in further research. In this way qualitative and quantitative research can supplement each other (Flyvberg, 2006). Especially considering the specific contextual circumstances that envelope *co-living* typologies, opting for qualitative research and framing the context are important. Silverman (2011) calls this *contextual sensitivity* and by mapping respondents' context specific thoughts and behavior can be clarified.

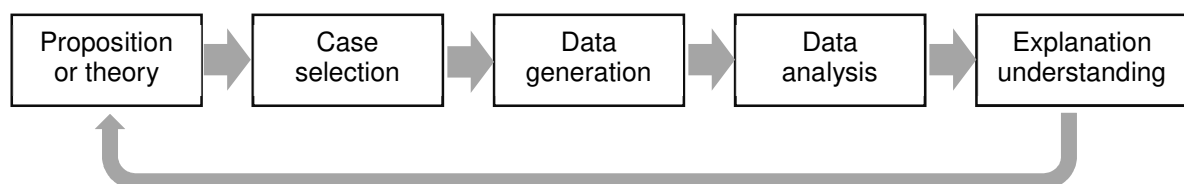


Figure 5. Deductive Research Approach (Mason, 1996)

This study conducts research based on a deductive approach (Figure 5). Pre-existing research can form clearly formulated propositions (Saunders, Lewis, & Thornhill, 2009). First, theoretical literature is reviewed and serves as input for constructing a conceptual framework (Figure 4). This model is made before entering the 'field of study' and visually displays the relations between concepts. Such as the proposition that co-living characteristics have an effect on community building. Next, it serves as a tool to add structure to the interviews, surveys and analysis (Doorewaard, Kil, & van de Ven, 2015). Due to the topic of research - co-living - being relatively new, theory was not predominant during empirical research. Space had to be left open for new insights that have not been discussed in the literature review. Results have been

shaped based on a mix of theoretical and empirical insights, as is prescribed for qualitative research (Baarda, Goede, & Teunissen, 1996).

During research, several practical implications have to be considered in making methodological choices (Bryman, 2012). Time will be a factor of importance since gathering data is time-consuming and this study has particular deadlines. Next, because of the chosen cases and the cost for travel data gathering has to be effective and efficient. Possible considerations will present itself in the future and these have to be made by balancing scientific and practical motivations. Research in social science is always finding middle ground between the ideal and the feasible (Bryman, 2012).

## 3.2 Research design

### 3.2.1 MULTIPLE CASE STUDY

A neighborhood or community is a research entity that is used more often in case study research (Bryman, 2012). In this research three cases are used to test propositions based on the literature and generate new theories on the effect of shared living environments on community building. By opting for multiple cases instead of a single case study the results will be substantiated better. Possible differences can be evaluated and possibly explained. A case study fits the qualitative research design due to its ability to study a particular setting that can be described extensively. The selected cases will be described in more detail in chapter 4.

### 3.2.2 SAMPLING OF CASES

The three cases that have been selected - Villa Mokum and Little Manhattan and Change= - have been chosen based on *typical case sampling* (Bryman, 2012). They have been purposively selected due to their particular characteristics and settings. In the literature review the characteristics of co-living developments have been identified. It has to be noted that due to the broad definition of co-living it is impossible to select cases that match all characteristics. They contain a specific set of social and design principles that can be interpreted in various ways. The purposive sample has been made based on the following criteria:

#### GEOGRAPHY

This study focuses on the urban environment and therefore all cases should be located in cities. Next, even though co-living is a global phenomenon this study restricts itself to focus on Dutch developments. As a typology it is relatively new and not many cases can be identified that match all criteria. Most cases can be found in the city of Amsterdam and in order to limit differences in planning context this study only selects cases in this city.

#### MINIMAL MATURITY

Developer-led co-living is a relatively new phenomenon in Dutch urban planning. Many developments are still in the design or planning phase or have just recently been completed. In order to study the effect of sharing on community building it is important that the particular cases are in use for a minimum amount of time. The criterion this study uses is that the development has to have been completed at least one year before conducting the empirical research. This allows residents to have substantial experiences in sharing and community building and will result in more valuable findings.

#### SHARED SPACE AND COMMUNITY FOCUS

Another criterion is that the case sample should have smaller than average private units that are complemented with shared spaces and facilities. Furthermore, the selected cases should have an intentional focus on community. This can be in a lesser or greater extent. The physical

and social design of the development should have a purposive focus on fostering social interaction. Based on the online and offline publications and descriptions of the cases a selection based upon these criteria can be made.

#### TARGET GROUP

Cases should have an explicit focus on millennials. After all, this is the most common target group of this contemporary form of collective housing. Millennials are defined as people born between 1980 and the early 2000's. Some urban co-living developments focus explicitly on elderly or disabled people. These are omitted in the study in order to better compare and evaluate the results from the cases. Also student housing is intentionally kept out of the sample, because this is a target group with different characteristics and preferences. Based on the information on websites and the type of dwellings cases can be selected on this criterion.

#### TYPE OF OWNERSHIP

Preferably, the cases selected vary in type of ownership. Literature suggests that there might be slight differences in community building in various housing types. For that reason the cases that are selected should differ in type of ownership. This can be social rent, private rent or a combination of private rent and owner-occupied housing. At this moment, full owner-occupied residential developments with shared facilities are unknown and can therefore not be selected as a case.

### 3.2.3 SAMPLING OF RESPONDENTS

Two type of respondents will be sampled. One for further understanding of co-living as a typology and its intended objectives. And one for exploring the experienced relation between co-living characteristics and community building. For the first goal, experts will be selected that are knowledgeable regarding the co-living project. Such as experts involved in the design, development or management of the cases. For the second, samples will be selected from the residents of the co-living cases.

#### Experts

In selecting respondents for the expert-interviews it is important to get a *broad variation* of cases (Miles & Huberman, 1994). This means that interviewees should be selected that have different connections with the developments. Experts should be knowledgeable regarding the subject and can be:

*Architects* – Information on the physical design principles of the communal spaces and the theories or experience with urban developments and fostering social interaction.

*Real estate developers* – Knowledge on the possible added value of sharing facilities. The arguments behind developing the facilities and spaces that are shared and the (planning) constraints that form barriers for successful sharing practices.

*Real estate investor/operator* – Generally, the real estate operator will have applied a program of requirements to decide on the facilities, services and spaces that will be shared in the housing scheme. Also, as owner of the complex the investor will have the financial risk.

Benefits of these specialists is the long term experience they have with the project and thus are able to offer a complete overview. A disadvantage is that they are not always an independent actor in the development. Since they all have personal interests with regard to the effect of shared spaces and facilities. Also, experts can be evaluating their own work and can therefore be biased. One option to counter this is to collect data from as much actors involved in order to compare and relate responses and compensate for biases.

### Residents

In sampling the resident-respondents it is important to generate a sample within each case that exemplifies the population under consideration (Bryman, 2012). During the sampling, the researcher will be dependent on the altruism of the residents of the selected co-living developments. Because of the research method – interviews – the data has to be gathered on location. In order to obtain a sample of respondents that is representative a couple of factors are important:

- 1) Not all residents are at home during the day (most convenient time for data collection for researcher) and this could lead to respondents that are unrepresentative.
- 2) Residents are less inclined to participate in an interview in evenings.
- 3) Focus on the socioeconomical and demographic factors of respondents. Even though this is not an explicit focus of this research the background of respondents is important in finding out about community building effects. Literature shows many differences in sociodemographic factors, such as gender, age, education and income.

## 3.3 Research method

### 3.3.1 DATA-COLLECTION

#### Interviews

As mentioned in chapter one, the aim of this research is partly *descriptive*, but mainly *explanatory*. The methods used during the descriptive phase of characterizing co-living typologies are a literature review and document analysis. In explaining and assessing the effects of co-living and shared spaces on community building other methods have to be applied. Based on the chosen qualitative research strategy the best method to complement the information from the literature review are interviews. As paragraph 3.2 showed, two types of participants are sampled because they can offer different insights. Consequently, this calls for data-collection through two different type of interviews.

Several types of interviews can be distinguished, such as structured interviews, semi-structured interviews or focus groups (Verschuren & Doorewaard, 2007). In this study, two different types of face-to-face interviews will be used for the two different respondents: unstructured interviews for experts and semi-structured interviews for residents. Contrary to structured interviews, semi-structured interviews have the advantage that they offer the opportunity to the researcher to be flexible and ask additional in depth questions during the course of the conversation. That way, all major questions that are of interest in the research can be asked in the same way in each interview. But the order may vary, and the interviewer is free to prompt and to probe for further details (Farthing, 2016). With unstructured interviews flexibility is equally important. But a benefit of unstructured interviews is that the list of topics for discussion can evolve from one interview to the next (Farthing, 2016).

#### Expert interviews

The function of the interviews with the experts is mainly to gain more understanding in the characteristics and intended effects of co-living projects. It therefore adds to the descriptive and explorative part of this research. Considering the explorative objectives for these interviews an unstructured type of interview is chosen. Through expert interviews the intended objectives can be identified and later tested during resident interviews. To do this, instead of a standard questionnaire, a topic list will be used for each interview. That offers flexibility and space to discuss topics that have not been addressed in the literature review.

In Appendix I the topic list for the expert interviews can be found. It is based on the characteristics and insights from the theoretical framework and the conceptual model. This topic list serves as input for asking relevant questions and provides direction for conducting each interview. Since insights from interviews might raise new questions or create new issues that can be relevant for the next interview, the expert interviews output may serve as input for the next interview.

### **Resident interviews and operationalization**

In order to determine the presence or extent of community building in a living environment the residents should be interviewed. In order to improve the reliability and validity of the interview, each interview will be conducted in a similar structure. The design of the interview is aimed at obtaining generalizable and comparable data about residents' experience on community building. Based on the identified components in paragraph 2.2 the abstract concept of 'community building' can be operationalized. In Appendix III an overview is provided that displays all statements or questions that are used in previous studies to measure the various constructs that contribute to community building on neighborhood level.

Based on this overview a distinction is made in components that have to do with *feelings* and components that concern *behavior*. Table 5 shows which components contribute to either feelings or behavior and in turn, community building. This table is used in creating the semi-structured interviews that can be found in Appendix II.

*Table 5. Community building components and related questions, subdivided in feelings and behavior*

	<b>Components</b>	<b>Questions</b>
<b>Feelings</b>	Sense of community	Is there a strong sense of community here Do you feel you belong to this neighborhood and the people Do you feel at home with the people that live here Do you feel a bond with neighbors
	Solidarity	Do you think neighbors will help you in an emergency Do you think of yourself as similar to people who live here Is there a lot of solidarity in your neighborhood
	Satisfaction	Do you feel safe in this neighborhood Do people like living here Are you happy with the demography of this neighborhood
<b>Behavior</b>	Social interaction	Do you have a lot of contact with direct neighbors Do you regularly stop and talk with people in your neighborhood Do you visit neighbors' homes
	Social activities	Have you collaborated with others to organize activities in the neighborhood Would you be willing to collaborate with others to improve your neighborhood' Are there a lot of neighborhood activities
	Social engagement	Do people treat each other nicely Do you borrow things and exchange favors with neighbors Is it easy to engage people to get things done Is there somebody who can take care of your house if you are away

Next, it is important to relate the responses on statements and questions to the shared facilities or communal spaces. Thus, to what extent does sharing lead to feelings or behavior that cultivate community building. By leaving room in the semi-structured interview to follow-up on

possible answers on community building the interviewee can link this to the characteristics of their co-living environment. That way the relation, or absence of a relation, can be detected.

### Methodological framework

Figure 6 provides an overview of the methods applied and shows where specific data will be retrieved. The two types of respondents – experts and residents – will provide different insights regarding the research topics and the selected cases. Even though there are similarities on the potential type of data retrieved, the level and perspective contrast. The figure shows that through expert interviews data on the typology in general and insights on design choices can be obtained. They provide less data on the actually experienced components of community building, but provide the motivations and expectations. Through resident interviews the experiences with components of community building can be obtained, together with the interpretations of effects of social and physical co-living characteristics. This will provide a wide range of data that allows for substantiated statements on the realized effects of co-living on community building.

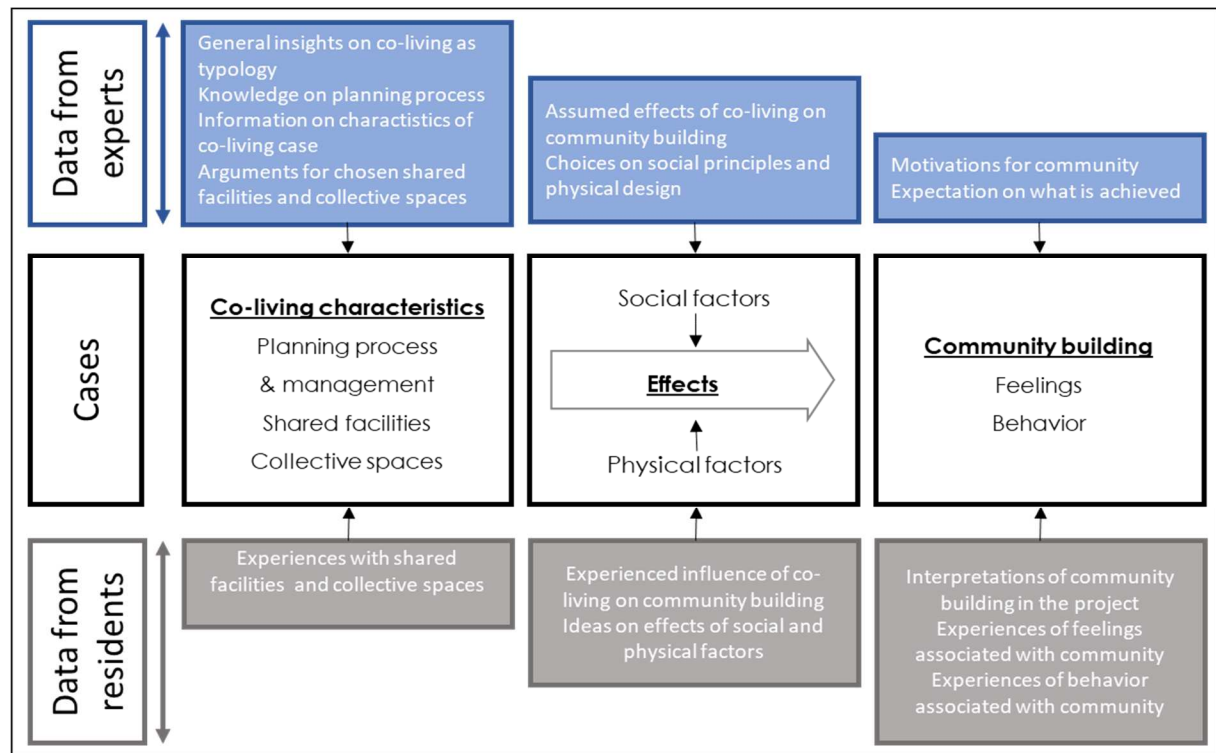


Figure 6. Overview of type of data retrieved through research methods (created by author)

### 3.3.2 DATA-ANALYSIS

The literature review and interviews are the main source of information in this study. In order to process the data, the conducted interviews will be recorded and transcribed. The transcriptions can be found in the special transcripts appendix. Then, a qualitative data-analysis tool, the program ATLAS.ti, will be used to analyze the transcripts. The aim of this analysis is to order the data into themes, which allows for a more structured presentation of results.

Data will be assigned to a theme in order to find a repeated pattern of meaning (Braun & Clarke, 2006). Then, the data will be coded in several steps. The transcripts from interviews with experts will be discussed separately from interviews with residents. First, open coding will take place in which certain labels will be attached to certain parts of text. The topics and structure of the conceptual model are taken into account during the process of coding. Then axial

coding will take place. Codes will be compared and similar codes will be placed in an overarching 'family'. The code families and individual codes for the experts can be found in Appendix IV and the code list for residents can be found in Appendix V.

## 3.4 Validity and reliability

### **Internal validity**

In this particular research, the expected complexity of the factors involved in community building is high. In addition to this study's factors of interest, shared facilities and collective spaces, there may well be other factors which may make interpretation more difficult. For example, the experienced feelings and behavior of residents in co-living environments are likely to vary with age. That is why controlling the research situation based upon particular criteria, in this case millennials as target group, increases the internal validity.

Furthermore, because of the many variables involved in neighborhood community building and the difficulty of measuring the impact of separate variables, a qualitative strategy is chosen over a quantitative design. Data from the interviews can only provide evidence for the existence of a relation, not on the strength. Also, in analyzing the data and discussing results, statements about effects of co-living on community building should be taken carefully, for correlation does not mean causation.

### **External validity**

The external validity of this research determines the degree of transferability of the methods. Qualitative research is usually less externally valid than quantitative research. In this study, using a semi-structured interview with clear topic allows for a certain amount of structure in the data-collection (Farthing, 2016). Also, using several units of analysis, three cases and multiple respondents can improve the external validity. As a result, the likelihood that results can be generalized towards other similar Dutch contexts increases.

### **Reliability**

Qualitative case study research is often criticized for being less reliable than quantitative research methods (Fischer & Jelsing, 2007). Therefore, this study uses an extensive and substantiated operationalization of the theoretical concepts in order to safeguard the reliability, which is essential in qualitative research (Cresswell, 2013). When reliability is at issue, this concerns the uniformity of the data collection and interview responses (Farthing, 2016). Hence, by using the same structure for each interview, a higher consistency will be achieved. And finally, by recording, transcribing and coding all interviews, the reproducibility of the research is increased.

## 4. CASE DESCRIPTION

This chapter describes the selected cases in more detail. For each case some information on planning, surrounding area and characteristics are provided. All cases are located in areas that the municipality of Amsterdam has designated as important, responding to the high demand for housing in the city (Gemeente Amsterdam, 2016). Figure 7 provides a map with the locations of each case and the chapter is concluded with Table 6, that offers an overview with information and characteristics of the three cases in Amsterdam.

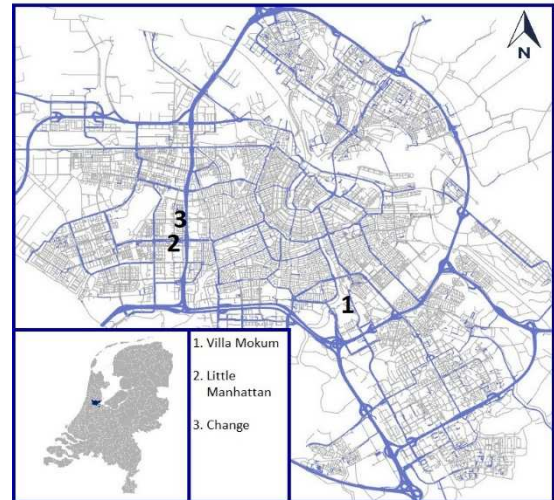


Figure 7. Locations of cases in Amsterdam (created by author)

### 4.1 Villa Mokum

Villa Mokum is part of the urban regeneration of 'Amstelkwartier' and was completed in 2015. The surrounding area is still under development. Amstelkwartier is a mixed use development with both commercial, but mainly residential developments. The area contains a variety of typologies, such as DIY lots, social housing blocks, private sector rental and high-end apartments. For the municipality of Amsterdam, this area is an important expansion location to meet the high demand for housing in the city. It has a good public transport connection due to the metro station Spaklerweg.



Figure 8. Photo of Villa Mokum (AM (2018))

Villa Mokum is developed by the Dutch real estate developer AM, who were able to start construction in the middle of the economic crisis – 2012 – due to a partnership with institutional investor Syntrus Achmea. They invested in 279 dwellings to let out to students. The other 348 dwellings are owner occupied and occupied by both students and starters. Kampman Architects designed the scheme and implemented several communal spaces, inside and outside the building, that should be an extension of the private dwellings. On the ground floor several commercial spaces are located, amongst others a small supermarket. In 2016 it won the New Building Award of Amsterdam.

## 4.2 Little Manhattan

Little Manhattan is part of the urban regeneration of the Lelylaan station area in Amsterdam West. This formerly isolated infrastructure interchange is transformed into a lively living and working destination. Since 2016, the transformation of the area started and in several years it will contain about 1500 houses and more than 10.000 m<sup>2</sup> of commercial space. It will become a mixed-use area with different dwelling types serving a wide range of citizens. The first realization of this transformation was the completion of the Little Manhattan project in 2017.



Figure 9. Photo of Little Manhattan (Studioninedots (2018))

Little Manhattan accommodates 869 apartments for students and young professionals. It is developed and exploited by developing investor IC Netherlands, who are specialized in developing housing for students and starters. The architect for Little Manhattan is Studioninedots. The development consists of two living concepts for students and for young professionals. Both are considered millennials, but targeted differently. The concept for young professionals consist of nine 'living rooms' that are managed by a 'residential manager'. These spaces can be used for movies, events or as library. Each resident will have access to their particular living area and all residents can access the shared entrance space. The four commercial spaces in the building are filled with cafés and restaurants, open to the public.

## 4.3 Change=

Change= is located in the renewal area 'Overtoomse Veld' in the west of Amsterdam. Corporations, real estate parties and the municipality work together on the transformation of this former monotone residential area into a lively urban mixed use area. The municipality is upgrading the public spaces in Overtoomse Veld. Also, next to private sector housing, several schemes for social housing have been completed or are currently being developed. The Change= project is one of these housing projects that targets lower-class residents.



Figure 10. Photo of Change= (Change= (2018))

Change= is the name of the new developer that initiated the project. The complex in Amsterdam Nieuw-West is the first realized project, but others are in development. The projects targets a group of working young adults, predominantly lower-educated. A group that is often forgotten in urban housing developments. The aim was to develop affordable housing with a societal goal. The concept of Change= goes further than housing alone. It is based on 'living as a service', which combines housing, working, living, and learning and has building community in its core. The smaller private spaces are complemented with several shared services and communal spaces, such as a laundry room, communal courtyard and co-working spaces.

Table 6. Overview of case characteristics (created by author)

	<b>Case 1. Villa Mokum</b>	<b>Case 2. Little Manhattan</b>	<b>Case 3. Change=</b>
<b>Location</b>	Amstelkwartier, Amsterdam	Slotervaart, Amsterdam	Overtoomseveld, Amsterdam
<b>Completed</b>	Q1 2015	Q3 2017	Q1 2017
<b>Developer</b>	AM	IC Netherlands	Change=
<b>Architect</b>	Kampman Architecten	Studioninedots	OZ Architects
<b>Owner / Operator</b>	Syntrus Achmea	IC Netherlands	Orange Capital Partners
<b>Tenure</b>	348 owner-occupied 279 rental	Rental	Social rental
<b>Number of dwellings</b>	627 apartments	872 apartments	498 apartments
<b>Range private space sqm</b>	28 - 33 m2	22 - 41 m2	28,2 m2
<b>Resident profile</b>	Students, Young Urban Professionals	Students & Young Urban Professionals	Millennials; 60% lower educated, 40% well educated
<b>Household types</b>	Single and two-person households	Single households	Single households
<b>Average length of residence</b>	Medium stay	Short to medium stay	Short to medium stay
<b>Types of shared spaces</b>	Rooftop terrace, Communal garden, Loggia's	Living rooms, Library, Meeting rooms, Theater room, Outside terrace	Living rooms, Communal garden, Working spaces, Laundry room

## 5. RESULTS

The presentation of the results is structured based on the conceptual model. First, experts' and residents' responses on the emergence and characteristics of co-living are addressed. Next, the expectations of experts and the experience of residents on components of community building are discussed. Feelings and behavior will be discussed separately. Then, the extent to which social and physical factors influence the use and effect of co-living will be treated. Also, unexpected outcomes and factors that have not been found in the literature review are presented. In this chapter, references are made to the interview transcripts (see special appendix). Interviewees are quoted anonymously, experts with their role and number, residents with their case abbreviation and number, as seen in Table 7 and 8.

Table 7. Overview of resident interviews

Resident	Case	Date
VM1	Villa Mokum	13-12-2018
VM2	Villa Mokum	4-1-2019
VM3	Villa Mokum	4-1-2019
LM1	Little Manhattan	3-1-2019
LM2	Little Manhattan	4-1-2019
LM3	Little Manhattan	4-1-2019
CH1	Change=	10-1-2019
CH2	Change=	20-1-2019
CH3	Change=	20-1-2019

Table 8. Overview of expert interviews

Expert	Case	Date
Architect 1	Villa Mokum	5-12-2018
Architect 2	Little Manhattan	10-12-2018
Architect 3	Change=	14-12-2018
Developer 1	Villa Mokum	10-12-2018
Investor 1	Villa Mokum	3-1-2019

### 5.1 The emergence and characteristics of co-living

The emergence of co-living typologies developed by private real estate developers is attributed to various aspects by experts. All experts confirmed that this developer-led typology is relatively new. In general, the emergence is explained by arguments relating to both the supply and the demand side of housing in the Netherlands, particularly in Amsterdam. Drivers from both sides will be discussed in this paragraph. Also, the co-living characteristics of the studied cases and will be discussed. From both an expert and a resident point-of-view.

#### 5.1.1 SUPPLY SIDE OF CO-LIVING

The interviews with case-experts revealed that the institutional context has a big influence on the emergence of these type of developments. Construction law, the rental system and municipal planning procedures have been mentioned by several experts. Mostly, the emergence is connected to the heated housing market in Amsterdam and its ambition for urban densification in order to answer to the high demand for housing. The municipality is responding to this high housing demand by promoting the development of affordable and middle segment housing. For real estate developers in a heated housing market, the only way to provide affordable and middle segment housing is by developing smaller dwellings.

In the Netherlands, construction law (Art. 4.35 lid 2 Bouwbesluit 2012) prescribes certain requirements for developing residential housing. Concerning smaller housing (<50 sqm) it prescribes that it is not required to provide private outdoor space, such as a balcony or a garden. But it obliges the developer to compensate with communal outdoor space. You have to offer an alternative. Often, developers and architects use this as a motive to focus on the collective elements of residential developments. Next, for Villa Mokum and Little Manhattan the architect and developer stated that the design is largely based on the Dutch rental system.

This system has a scoring system at its core which is used by developers to find the most efficient and financially feasible design. One developer mentioned the initial challenge he faced:

*"How small can we make a dwelling and still keep it in the private rental sector?"*  
(Developer 1)

He also pointed out that exemplary co-living developments such as *The Student Hotel* or *Zoku* are 'not born out of luxury, but out of misery' (Developer 1). In these types of co-living, you are not allowed to live more than eleven months. This is due to Dutch legislation which prescribes that as soon as you live somewhere twelve months it is considered a regular home and the owner cannot easily evict you. Moreover, it is not zoned as residential use, but as commercial use. The extent to which collective elements are incorporated in the scheme largely relies on the interest of the buyer. In most cases this is the investor and he will have the financial risk of letting out the dwellings. But despite this risk, experts acknowledge that mixed buildings, with shared functions and common spaces are getting more support from buyers lately.

A planning instrument that is mentioned a couple of times as explanation for the emergence of developments with co-living characteristics is the municipal tender. It is common for the municipality of Amsterdam to hold a competition based on a tender in order to find a private developer for land they own. The interviewed investor points out that the municipality prescribes requirements for tender proposals, such as minimum land bid, but also things like integration with the neighborhood, incorporating the sharing economy and attention to community building. In order to win, developers and architects must design schemes based on these requirements. This leads to many designs with co-living elements.

*"But if the ultimate buyer thinks it is too expensive with those elements, they won't invest in co-living characteristics, because they have the financial risk."* (Investor 1)

### 5.1.2 DEMAND SIDE OF CO-LIVING

In general, experts assume that more co-living typologies will be developed in the future. Before, most developments with shared facilities were either really high-end and luxurious or were student housing developments. The studied cases clearly did not have a high-end or student target group. This was validated by the characteristics of the interviewed residents. They considered themselves as *starters in the housing market* and claimed to have different preferences regarding facilities compared to students. But choosing to live in a smaller house is considered to be done mainly out of necessity and not out of desire. Regarding affordability, investors and developers do question the willingness of residents to pay for the 'extra' shared services and facilities:

*"Surely it can offer more comfort or quality, but it is still a question of financial feasibility."*  
(Investor 1)

The developer mentions the issue of offering shared service based on pay-per-use versus including it in the service costs. He assumes that there is a demand for shared facilities, but residents are only willing to pay for things they use. However, in most cases investors or operators include these costs in the service costs. Because pay-per-use will bring too much uncertainty and financial risk for the investor. According to investors, they are more willing to provide shared services that compensate for lacking facilities. An example is offering car-sharing facilities as compensation for little parking possibility.

None of the residents mentioned that the shared facilities or common rooms were a motivation to move in. Several even explicitly mentioned they moved in because they did not want to

share things. Largely, because most of the residents had negative experiences with student housing where they had to share a lot. But primarily, most residents simply needed a house.

*"Shared facilities are nice extras, but I mainly wanted a place for my own."* (LM1)

One resident states that, as a starter in the Amsterdam housing market, you generally do not have the luxury of choosing where and how to live. But other respondents emphasized the expected benefits of being able to share common spaces with neighbors. Especially compared to living in a traditional studio or apartment building. Only one resident particularly mentioned the community as the reason to move in, but recognized that this was not the cases for many others.

### 5.1.3 CHARACTERISTICS AND EXPERIENCE

In all three cases, the architects pointed out that the schemes had high ambitions on sharing and collectivity in the beginning. But due to financial considerations during the development process of the cases these ambitions were lowered. All developments have private dwellings and have a residential land use. Everybody has their own kitchen and bathroom and the opportunity to have a personal washing machine. The amount of collective spaces and types of shared facilities vary in each case and are therefore experienced differently.

#### Villa Mokum



Figure 11. Communal courtyard and shared loggia's in Villa Mokum (AM)

Even though initial designs for Villa Mokum included various shared spaces such as sports facilities, only the shared loggia's and a large common courtyard were realized (Figure 11). A landscape architect has designed this courtyard and even placed loungers for residents to relax on. Due to the courtyard being privately owned it can be closed off by large gates. However, the gates are always open, which gives it a more open and accessible character, according to the developer.

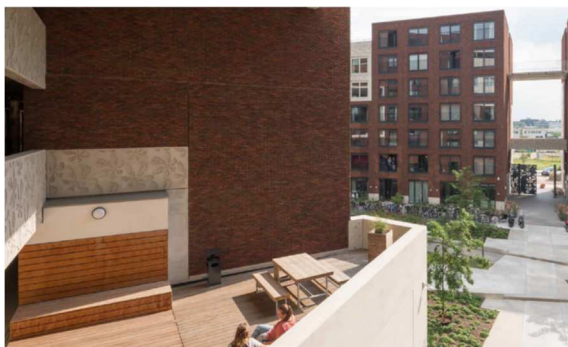


Figure 12. Shared loggia Villa Mokum (AM, 2019)

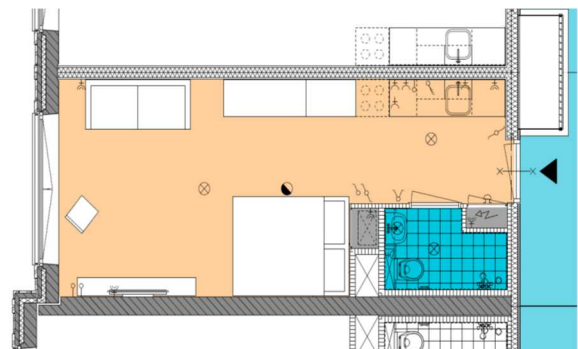


Figure 13. Floor plan Villa Mokum (AM, 2019)

Also, Villa Mokum has loggia's or terraces that are evenly spread across the plan (Figure 12). Per two floors residents share a spacious loggia that has robust furniture and a sturdy design. The experts state that the main reason for a robust design is that it cannot easily be damaged. Finally, a laundry facility was set up at the request of the residents.

Residents pointed out that it took a while before people really started making use of the shared spaces. But especially in summer they are used quite often. The loggia's are experienced as great spaces for barbecues, dinner parties or inviting friends over for birthdays. Particularly as a compensation for the absence of a private balcony. But unlike in summers, residents experience that during winter nothing is shared and less interaction takes place. Also, even though Villa Mokum's architect considers the shared bicycle parking and the mailbox-room as collective spaces, this is not experienced as such by residents.

### Little Manhattan



Figure 14. Bar in plinth of Little Manhattan (Fizz, 2019)

In Little Manhattan, every floor has a different type of communal space, such as a cinema room, co-working space, living room or gym. Most of these spaces have quality furniture and include facilities like a printer or TV. The whole building also shares one communal terrace. All spaces have to be opened with a key fob, so only residents can open them. Each floor has about twenty to thirty dwellings and the common room is allocated next to the staircase. There is a resident manager who is responsible for administration, but who also organizes events. Residents mention regular events that vary from sporting lessons and yoga to wine tastings. Some are organized by residents, but most by this resident manager.

*"The complex could have less shared facilities since only twenty people are active in the community."* (LM3)



Figure 165. Shared living room (Author)



Figure 16. Floor plan Little Manhattan (Fizz, 2019)

The experience of interviewees is that the amount of residents that make good use of these spaces and facilities is relatively low. Especially compared to shortly after the first residents moved in. During that period the common rooms were used more frequently. But in general the experience is that the common rooms are not used well. This is attributed mainly to the busy lifestyle of residents. According to one respondent, especially Dutch natives hardly use the shared and common facilities. However, the shared outdoor terrace is mentioned as a successful shared space and is said to fulfill a need for many residents.

*"In summer it is really crowded and a perfect alternative for a public park."* (LM1)

### Change=



Figure 17. Collective courtyard Change= (Change=, 2019)

In Change=, the ground floor courtyard is spacious and all shared facilities are located next to it. The architect stated that it is designed in a way that everybody passes the common rooms while returning home. Hence, everybody has the opportunity to meet each other and strengthen the feeling of collectivity (Architect 3). He also pointed out that clusters have intentionally been excluded in the design because of the expectation that this would create stronger and weaker clusters. The architect assumed that this would compromise the collective feeling. Just like Villa Mokum, Change= has a well-designed fence. The intention was to create a relation with the neighborhood by leaving the fence open. But it is closed fulltime, supposedly due to security purposes and the complex being located in a 'difficult' neighborhood.



Figure 18. Laundry room Change= (NUL20, 2019)

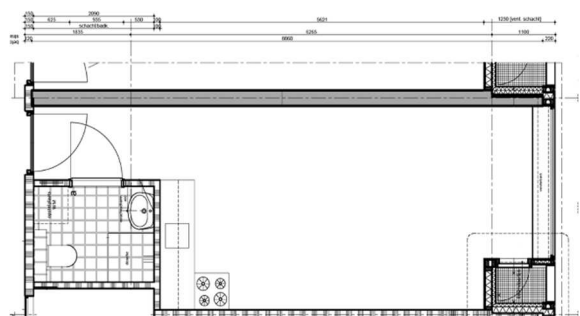


Figure 19. Floor plan Change= (Change=, 2019)

The architect claims that ideally Change= should have places you go to first, before going to your private home. None of the residents mentioned they really did this. Only when they had to pick up a mail delivery close to the building's management room. They experienced that others often had some small talk there. The interviewees further pointed out that the big entrance hall gets occasionally used by others as a place to sit and relax or do some work. In

their experience this does not happen really often. The shared laundry room is used more regularly, but that room has more functional value. Also, residents state that many activities were promised or supposed to be organized by the building's management. But this has not happened very often in their opinion. Only in spring and summer the outside courtyard was used more frequently. For instance as a place to relax or to organize small parties.

## 5.2 Community building effects

This paragraph presents the experience of residents with components of community building. It follows subdivision of community building as presented in the conceptual model. In 5.2.1, community behavior concerns social interaction, social activities and social engagement. Then, in 5.2.2, sense of community, solidarity and satisfaction are discussed as part of community feelings. Finally, a summarizing table with key findings is provided.

### 5.2.1 COMMUNITY BEHAVIOR

#### *Social Interaction*

The residents of Villa Mokum confirm the architect's assumption that the loggia's create opportunities for interaction. Interviewees mention that sharing the loggia's lowered the threshold to knock on someone's door. They got in touch with neighbors they would not have met without the loggia's. However, the amount of social interaction can depend on the floor one lives on. Because not all loggia's were used frequently. But especially with good weather a lot of interaction happened on the well-located loggia's. A nicety that is acknowledged by all residents. Through events, small-scale or big scale, people become first-name familiar. This allows for more casual interactions to happen. Interaction also occurs at places like the hallway, the lift or at the mailboxes. But the familiarity gets strengthened in and around the common areas. The inner courtyard was not mentioned by the residents as a place where a lot of interaction occurred, even though the architect expected it to be a place for interaction with the neighborhood.

In Little Manhattan, residents said to have regular interaction with neighbors. 'Neighbors' are understood as all people living in the building and not merely the people living directly next to you. This regular social interaction is attributed to living with peers, but also to the opportunity to meet people in and around the common spaces, just like in Villa Mokum. However, personality is key, according to residents of all cases. Some people are simply considered to be more social than others.

*"If I walk past there, I always make some chitchat, but my neighbor would never do that."*  
(LM1)

For small talk and meeting each other the entrance of Little Manhattan is found to be key. However, all residents agree that events and activities allowed for the most interaction to happen. It made them familiar with one another and it gave them the feeling that they are part of something. One resident indicated that until the bar in the plinth opened lots of social interaction and activity took place in the common areas in the building. There was a small group who was interested in these activities and for many it was a perfect way to get to know one another. The experience was that activities and interaction only took place in the common rooms. Because according to interviewees, visiting other neighbors' homes did not really happen.

In Change=, the building management team has tried to foster social interaction and get people to know each other by organizing a few events. Apparently, these were not really experienced as effective. Eventually, a WhatsApp group was created via which residents can keep in touch with each other. But in general the residents of Change= were less positive about the social interaction compared to the other two cases. Most did know their neighbors but rarely saw them. One mentioned it was more pleasantries than really bonding. Two of the residents stated that compared to their student residencies, this was nothing like community interaction.

*"Everybody is busy with their own stuff and has their own life." (CH3)*

None of them really visited their neighbors and even in the laundry rooms the experience was that people do not really interact. They did mention that this could be their personality. The interviewees did acknowledge that others have more interaction, because the courtyard and entrance hall does allow for interaction. Especially during summer people sit outside and chitchat. One resident (CH2) assumed that if you attract people that not only come here for financial reasons, and they intend to be more open, then the sharing and interaction would happen more.

### **Social Activities**

In all studied cases, it was the experience of residents that not many people are willing to organize large neighborhood activities. In Villa Mokum, only one interviewee sometimes did, but the response was always disappointing. The way to engage and involve others in activities was to use the Facebook group that was created by the residents. In order to reach a more select group of residents smaller WhatsApp groups were used. This is something that came back in other cases too. Many events for the entire building were organized by residents in the beginning, using the Facebook group as communication medium. Later, other events were planned for smaller groups. Only, that was mainly for people who had already got to know each other. Nonetheless, these spontaneous summer dinners or drinks did have a low threshold to join.

In Little Manhattan, also several activities were organized, especially in the beginning. And these were not only big organized events, but also small, impulsive meet-ups. One of the residents argued that current activities do no longer fit the residents' needs and therefore no one shows up. However, she does feel they are valuable because:

*"People I have met at similar events in the beginning have become very good friends." (LM3)*

Two of the interviewees from Little Manhattan would be willing to organize neighborhood activities. Only as long as it is clear that there is a need for that activity. But the general experience is that residents do not feel the desire or need to initiate or organize something themselves. Partially due to disappointing response on events in the past. In Change=, residents share the feeling that the response is low.

*"People are not really enthusiastic about the activities and therefore nobody wants to put in effort. It feels like there is no need." (CH1)*

At the same time, the experience in Change= is also that initial social interaction takes place at events organized in the startup phase of the building. There have been attempts to start regular drinks, but this did not really take off. Apparently this happened in a bar in the plinth of the building, but the bar is now closed. These events were organized by the operator. The management of Change= did put in effort to set up a resident committee that organized activities. This committee organized some drinks and an ice skating trip to the Museumplein. But only the respondent who lived in Change= since the beginning participated in these events, the two others interviewed did not.

### **Social Engagement**

All interviewed residents had the experience that people feel comfortable enough to address others on their behavior. Residents borrow and exchange goods and favors from each other. A resident of Villa Mokum (VM1) points out that Facebook is the medium to do this, which eventually leads to social interactions. In their experience, engagement is about getting

people involved or asking for minor tasks. Even though a select group is using it most, the expectation is that the majority of Villa Mokum is making use of the Facebook group. Others too stated that the threshold for asking favors is quite low. It felt easy to engage people. Especially within the sub groups for each floor. The feeling of social control is high because of it. Everybody seems to know one another in Villa Mokum, but the assumption is that this familiarity will be harder to reach for new residents.

Also in Little Manhattan and Change=, digital communication is used mostly to engage others. In both co-living cases it was used to ask for small favors and minor tasks, such as watering the plants or feeding the fish when on holiday. Through WhatsApp groups people felt a low threshold to lend out stuff and ask for help. One resident of Little Manhattan even provided an example of somebody who had a medical emergency and posted it on the WhatsApp group and some random person came to help out. The resident pointed out that this is the kind of connection that makes him feel a part of something.

Even though many of the residents feel it is easy to engage others through digital platforms, some mention that it only works with people you have already met before. Either in the common rooms or during events. One resident of Change= that moved in later, argued that she would ask someone of her own personal network for these small favors. Whereas another stated that she would ask a neighbor she had met during organized drinks in the first year she moved in.

## 5.2.2 COMMUNITY FEELINGS

### *Sense of community*

In Villa Mokum and Little Manhattan, residents indicate to feel quite at home with the people that lived in their building. It was highlighted that especially through Facebook everybody kind of looks out for one another. A form of social control that feels secure and results in residents bonding. It was not experienced as a strong community feeling with the entire building. More with smaller subgroups that were created naturally. So there is some sort of sense of community amongst residents that have been engaged in small and big scale events.

*"It should not be exaggerated, but it is there." (VM3)*

However, it is argued by some that to have real sense of community you should know each other better. The fact that a lot of expats live in Little Manhattan is considered as positive because they are interested in social activities. On the other hand, they might not have a long term intention to stay and consequently bond with neighbors. In Change=, residents pointed out they did not really experience what they thought was a real 'sense of community'. This was attributed to the high number of people living there and the common rooms not being used that often.

*"Mostly I just come home, nobody is using these common spaces, and therefore I just go to my studio." (CH1)*

Some of the residents in the studied cases explicitly mentioned that they do not really feel the need to have a strong sense of community. But when asked about the difference between summer and winter, residents of all cases stated that during summer this sense of community was higher. In Change=, people use the central courtyard more and there is said to be a more vibrant atmosphere. For residents, this gave a feeling of social connection, even if you did not have time to participate.

### **Solidarity**

In Villa Mokum, all interviewees feel that residents take account of others. When neighbors organize parties, residents feel able to address each other. Residents indicate that they feel safe amongst the many different neighbors and social control is considered high. One resident provided an example of locking herself out of her apartment and that there are always people willing to help out, even in the middle of the night. In Change=, interviewees did not mention or discuss feelings of solidarity.

*"I feel really happy with the people that live here and would not give a second thought in asking for help." (LM1)*

But in Little Manhattan, residents felt able to identify with neighbors, particularly based on them being peers and kind of in the same life stage. They all stated to feel high levels of solidarity. This was mainly because they did not feel shy to ask others for help and expect the same from others. Thus, even though ages of residents vary in Little Manhattan, most residents experience solidarity.

### **Satisfaction**

In all three co-living cases, the general feeling was that residents were satisfied with their living environment. In Little Manhattan and Villa Mokum, people were more positive about the shared facilities and co-living characteristics. The expectation was that living there is satisfactory until you get children, because then it is too small. In Change=, there have been some complaints about the property management and nuisance from the individual studio's. On the other hand it is argued that due to the presence of a property manager matters do not get out of hand.

In all studied developments the residents felt quite safe. Only two female respondents in Little Manhattan mentioned that they did not always feel safe in the surrounding neighborhood. nevertheless, good physical security through digital keys on different floors generally resulted in higher satisfaction. But feelings of safety can be achieved through more than physical security. In Villa Mokum and Little Manhattan, knowing other people in the building also created social control. It gave the feeling others can help you out in case of an emergency.

### 5.2.3 SUMMARY OF COMMUNITY BUILDING EFFECTS

Table 8 provides an overview of the outcomes on each community building component.

Table 7. Overview of key findings on community building effects

	Components	Key findings
<b>Behavior</b>	Social interaction	<ul style="list-style-type: none"> <li>• Especially common outdoor spaces provide opportunity for interaction</li> <li>• Becoming familiar allows for more casual interaction to happen</li> <li>• No one really visits their neighbors</li> <li>• Personality is important, not everyone wants lots of interaction</li> </ul>
	Social activities	<ul style="list-style-type: none"> <li>• In beginning activities are important in getting to know each other</li> <li>• Little initiation to organize big scale events</li> <li>• Low response limits residents from organizing activities themselves</li> <li>• Resident committees have been used successfully</li> </ul>
	Social engagement	<ul style="list-style-type: none"> <li>• Lots of borrowing goods and exchanging favors</li> <li>• Digital platform helps to create low threshold for engagement</li> <li>• Easier to engage people you have met in common rooms or at events</li> <li>• Moving in later, makes it harder</li> </ul>
<b>Feelings</b>	Sense of community	<ul style="list-style-type: none"> <li>• Community is with sub groups and not all residents</li> <li>• Stronger sense of community among people who join (small) events</li> <li>• Assumption there is no need for strong 'sense of community'</li> <li>• Expats have high interest in activities, less in strong bonding</li> </ul>
	Solidarity	<ul style="list-style-type: none"> <li>• Residents are able to identify with neighbors</li> <li>• Ability to ask others for help and expect the same from them</li> <li>• Feeling able to address each other on behavior</li> </ul>
	Satisfaction	<ul style="list-style-type: none"> <li>• Satisfied with living environment until a certain life stage</li> <li>• Safety is found in physical security</li> <li>• Satisfaction and social control is higher by becoming familiar</li> </ul>

## 5.3 The influence of social and physical factors on use and effect of co-living

In this paragraph, the experiences of residents with factors of influence that have been identified in the literature review will be discussed. Social and physical factors have been distinguished. First, experiences regarding social factors are presented, followed by physical factors. The factors 'proximity' and 'safety' are separately presented in the conceptual framework, but have been merged into one factor because of the similarities in residents' experience. Finally, factors that have not been included in the conceptual framework are presented.

### 5.3.1 SOCIAL FACTORS

#### *Participation in planning process*

In none of the developments residents were involved in the planning process. Experts do mention that market research has been conducted to find out about possible preferences of the expected target group. In Change=, the developer has done more extensive research and supposedly held interviews with the samples from the target group to identify successful design elements.

The expectation of residents is that involvement in the planning process could definitely have helped to increase interaction and connection they have with the place and neighbors. On the other hand it is assumed that the same people that are active now would be participating in the planning process. One architect stated that the scale is too big for planning participation. He states that maybe by decreasing the scale you could create a more effective and efficient participation process.

#### *Influence in management and activities*

Little Manhattan and Change= have a resident or service manager and Villa Mokum has a homeowners association. In Villa Mokum, it is acknowledged that often the home owner is not the resident. The dwelling is bought by a parent and inhabited by their son or daughter. This is said to limit resident's responsibility over their own living environment. Villa Mokum does have a concierge, who is argued to be important for the use of common spaces. Finally, defining house rules is considered important. Based upon these residents are able to address each other.

*"The question 'who runs or decides on what' is important." (Architect 3)*

In Change=, the person who decides on what is mainly the service manager. The common rooms are his responsibility, but some residents experience this as quite strict and 'police-like'. However, interviewees of all cases mentioned house rules and a service manager or concierge as important. As resident you should be able to address that person quite easily and by doing so having influence in management. Based on experience with various resident managers, one interviewee stated:

*"A nice interplay between residents and the resident manager is perfect. Helping each other out in fostering community by organizing small and big events." (LM1)*

Successful and effective activities are said to be organized by residents themselves. Then, real social interaction and bonding takes place. Facebook and WhatsApp are mentioned as the mediums to communicate and influence management and activities. It is also said to be essential that the managers of a building truly respond to resident's needs. One possibility that

was mentioned to do this was taking surveys. In general, for the interviewees, it was important to have the feeling that the operator listens to his or her residents. So, it is mainly about the feeling or knowing that if you have an idea or complaint you can go to somebody and know it will be taken care of. That as a resident your voice is at least considered.

### **Homogeneity**

The importance of homogeneity is found most in having the same values. It is recognized that a certain homogeneity is important in order for residents to be able to address one another. Here, homogeneity is about being somewhat in the same stage of life and having similar principles. If those principles are too far apart it is difficult for residents to share common rooms and facilities in a positive way.

*"In order to create a sense of community, and you can find it in the word, you need a common denominator and it should not only be living. I can imagine it depends on the characteristics of the people that are living here." (CH2)*

People in the same life stage will sooner have the same interests. They will easier participate in events together, which stimulates interaction, engagement and activities.

*"It's important norms and values are close, and when age is closer too, chances are, values are closer too." (LM2)*

But despite both being considered *millennials*, students and starters are very different target groups. They care about their environment differently and use it in another way. In many interviews this topic came up.

Regarding homogeneity, one architect mentioned the importance of scale. Mixing socio-cultural groups – or heterogeneity – on a neighborhood scale is more politically desirable. But according to one expert, clustering homogeneity on a lower level can be important in reaching more effective community building (Architect 2). However, the investor stated that it can be difficult to provide homogeneity in new rental developments, because "40-year old's want to live in the city too" (Investor 1). Only in a heated housing market, operators have the luxury of applying a resident selection.

In Little Manhattan, the expats are mentioned as a group that do contribute in some way to the community building. Because they do not have a personal network here, they will try and find one in their local living environment sooner. Also, they have things in common with other expats. Too much homogeneity is considered undesirable by some residents. Especially regarding occupations and background. The risk is that you talk about the same topics all the time and cannot get new ideas. Having a mix in background is therefore considered to be better.

### **Resident selection**

Because it is owner-occupied housing, resident selection cannot be applied in Villa Mokum. In Change=, a certain form is applied. They conduct intake interviews with future residents. One architect states:

*"Selection is a way to activate a certain bandwidth, on like-mindedness, reasonableness and being able to address one another on their behavior." (Architect 3)*

Selection is said to happen in order to prevent people moving in who would form a risk for the functioning of the building. In Little Manhattan, the resident manager is said to recently focus more on people's motivation. Partially based on the assumption that a certain homogeneity

stimulates community building. They try to select future residents who enjoy meeting new people and are willing to contribute to the community.

*"People who only sleep here and do not contribute don't help in that." (LM1)*

However, 'cherry-picking' is considered a luxury by the investor. They would prefer to develop residential buildings where potentially everyone could live. Despite this, residents do acknowledge that selecting on age is wise in order to better foster community. Also, most residents like the fact that generally residents work full-time. Because only then you are able to afford living in the development. All in all, most residents agree that mixing backgrounds is good to some extent and that homogeneity should be found in values.

### **Age of a community**

In general, residents indicate that they think that residents who live somewhere longer feel more connected with the place and their neighbors. However, the expectation is that people only stay approximately four to five years before moving out of the co-living cases. Thus, the co-living is mainly rental and medium-stay is expected to negatively affect community building. It is assumed that when there is more ownership, people have more feelings of responsibility about how the neighborhood is doing. This is confirmed by one resident, who states:

*"For me, and some others, this is a temporary residency. I'm not planning on staying here, so there is no use in fostering the community." (CH2)*

Only Villa Mokum includes owner-occupied housing, but many of the apartments are considered more of an investment purchase than one with the intention to live there long-term. Other experts and residents also recognize that people have less responsibility over their living environment with rental housing. Some respondents do explicitly mention that Villa Mokum is part of a greater area development. Perhaps when that development is largely realized the long-term perspective will be better and resident's connection and identity with the place is stronger.

In Little Manhattan, residents feel the as if the community feeling that was there in the beginning is gone. Smaller groups are still finding each other. But the bigger settings where residents went outside of their home out of curiosity do not take place anymore. Interviewees also mention that the high turnover rate makes it hard to engage new people in these smaller communities.

## **5.3.2 PHYSICAL FACTORS**

### **Proximity and eyes on the street**

Regarding the density and proximity of one's living environment, the experts mentioned the risk of anonymity. In Villa Mokum, all residents stated that the inner courtyard, in combination with the high density, gave them this feeling of anonymity.

*"In the courtyard you have no idea who is looking at you, there are 300 windows looking down on you, which makes it anonymous. But if I'm on one of the loggia's, people can see you too, but they are more familiar." (VM2)*

The ambition of Villa Mokum's architect to prevent high density and risk anonymity by dividing the complex into clusters with their own shared loggia seems to have had an effect. Change= is not subdivided in clusters and there residents indicate that it can feel more anonymous.

*"Nothing is shared with the floor and in the courtyard there is a lack of privacy." (CH3)*

This also relates to safety and 'eyes on the street'. Being able to see and hear each other gives a more secure feeling. However, this can go two ways according to residents. Too many eyes can make you feel watched, which can be scary and risks feelings of alienation. At the same time it is recognized that hearing and seeing what happens outside their dwelling and on other floors can make residents feel comfortable. Generally, this has to do with a the scale not being too big. However, for the investor scale is important too. Because if the scale is too low, it is not financially feasible to offer shared services or spaces.

### **Semi-private space**

All architects recognize that a good transition between the private and public domain can influence the effect on community building components. Little Manhattan's architect states that he had preferred to add another layer between both domains.

*"Now, you have the individual apartment and spaces the whole building can use. No layer in between that." (Architect 2)*

Another architect pointed out that the aim should be to generate a shared responsibility about the collective spaces and create the ability to address others about their behavior in it. For this to happen, the borders of this semi-private domain have to be very clear. It should feel like it is communal and as resident you should behave in it according to common norms and values. It is assumed that when shared with too many, semi-private spaces can already feel too public. For residents, the feeling of responsibility over semi-private space is mixed. Some do feel a responsibility and others do not.

*"I have the idea that we feel the loggia's are 1/500th ours, which ensures they are kept sort of clean." (VM1)*

*"And outside, that is not mine, other people clean that up. I think everybody feels that way." (VM2)*

Also in Little Manhattan the feeling prevails that it is quite personal whether someone feels responsible for the semi-private spaces. Many people experience it as not theirs. Then again, some residents would clean up if others make a mess of the spaces, because they do feel it is 'theirs'. In Change=, residents do experience the effect of semi-private space. In some occasions it even triggers a feeling of collectivity.

*"It is well designed and because it is not that easy to come in, due to keys, it feels a bit as 'ours'." (CH1)*

Here, again the notion of scale is mentioned. Big open spaces you share with a lot of people can feel more like an outside public space or café, not providing the feeling it is 'ours'. Another resident stated that the size of the entrance reminds him more of a hotel reception instead of an extension of your own private space. It does have quality, which is considered positive, but because it is shared with so many, it feels anonymous for residents.

### **Quality of communal spaces**

Regarding quality, the interview-data shows this concerns the general quality of the spaces and furniture, but mainly the maintenance of the communal spaces. The developer states that it is very important that communal spaces do not look messy, especially for the investor. Next, he assumes that:

*"When shared spaces are everybody's, they're nobody's too. So you need someone who cleans up every day and gets paid." (Developer 1)*

This relates to the lack of responsibility for semi-private spaces. Therefore most experts acknowledge that it is important that communal spaces and their furniture are robust and hard to break. The expectation is that in that way resident involvement is better. In many cases, the service manager or concierge is indeed much appreciated by residents.

*"He creates a certain calm, and makes sure it doesn't look messy but looks decent. That makes people have a more positive view of the common spaces." (VM3)*

Also in Little Manhattan, the resident manager is recognized as crucial for residents to make more use of common rooms, even though it should not be his task to clean it up. Little Manhattan's common rooms are pretty well furnished. Residents state that a good quality is necessary for effective use. The experience is that common rooms that do not have this, are not or only little used.

### **Location of communal spaces**

Residents mention that the location of common spaces, especially of outside areas, are a key indicator for its use. In Villa Mokum, the loggia's that are allocated better, mostly in relation to the sun, are used more often. And not only this, residents also confirmed that people that lived closer to a nicer loggia, used it more than others. As a result, they have more chance of meeting others and having social interaction. Of course, there is a personality aspect here, because still not everybody will frequently use common spaces. Whilst others would use common rooms on other floors more easily. In many cases, it was an issue of security versus centrality.

*"Common spaces should not be hidden in the building, but located at the entrance." (Architect 1)*

Another architect supported that common spaces should be allocated at places where everybody has to pass by or through. Motivated by the assumption that being able to see each other is essential for creating social control. In Little Manhattan, where collected spaces are spread out in the building, this gets confirmed. Residents argue that if you do not really walk past the spaces, you won't use it easily.

*"There were people who only a year later found out that there is a shared gym room, simply because they never walked past it." (LM1)*

In Change=, residents experienced the spaciouly set-up entrance as a place with a lot of people moving in and out. This did not make it feel 'warm'. So, despite its central location and everybody walking past or through it, the common space does not foster interaction and bonding as much. One resident points out that common areas further away from the central hallways could be a solution. That might feel more like an extension of one's personal room and would be closer to it. She states that if a common facility is too far away, residents will generally use it less likely.

*"Still you won't use a shared space if you live further away, even though it is pretty close to each other." (LM3)*

### **Community size**

The data shows that there is a maximum of people that residents can share something with and still feel like they share it with neighbors. When you share spaces with too many people, you do not feel any responsibility or ownership over it. The architect of Little Manhattan

acknowledges that the massiveness of the complex can limit feelings of security because you cannot know everybody you share the spaces with.

*"It is impossible to have 'community' with so many people. Naturally smaller groups will form."*  
(LM3)

The experience is that sharing with less people leads to more bonding and social interaction. But when that is the case you are really dependent on your neighbors. Whilst in bigger groups you can first see and find out who has the same interests. One resident of Villa Mokum indicates that the clustered loggia's feel more familiar because mostly you know the faces of the people you share it with. One architect does mention that clustering could lead to stronger and weaker clusters. As a result this could have a cruel effect on the people living in the building. However, a high number of residents can have a cruel effect too. A resident of Little Manhattan provides an example of the dynamics in the WhatsApp group of the building which shows a feeling of anonymity:

*"People discuss and take sides, just as they would argue in the comment section on YouTube."*  
(LM2)

### **Dwelling size**

The expectation of the developer of Villa Mokum is that in smaller dwellings people are forced to go out to use the more spacious common rooms. However, the size of the dwelling not seem to influence this. Only one resident of Change= indicated that she really felt the need to use common rooms due to the small size of her apartment. The small space felt oppressive to her. But because the common rooms lacked a certain homely feeling she did not really used them much. In general, residents do not feel that because their dwelling is smaller than average, they want to make more use of shared spaces. All residents stated that they purposefully chose their own place, and therefore do not really miss things. The interviewees had no experience with other residents using common spaces as party room when inviting more people over. However, they can imagine that when you are inviting family or friends over it can be very useful.

The architect of Little Manhattan assumes that sharing facilities everybody needs, such as laundry rooms, always work better than things like shared living rooms, that are considered an extra. Also residents pointed out a couple of times that if certain core facilities would be missing in the dwelling, then they would have to use common rooms and interact more. So it is expected that limited functionalities in private dwellings do increase usage of shared services.

*"Because if you have everything at home, why go outside?"* (Developer 1)

The common spaces that are used most are the loggia's and the outdoor common spaces, which are clearly spaces that are missing in the private dwellings.

### **5.3.3 OTHER FACTORS**

During the interviews, several factors came up that were not discussed in the literature review. Since residents experienced them as influential for the amount of community building they are discussed here. First, the status of the larger area development the case was located in. Second the online community and then personal differences. Next the influence of seasonality and the process of moving in together and finally the willingness to invest time and energy.

### **(Un)finished area development**

Some residents did mention the wider ongoing area development as a factor that limited real neighborhood connections from happening. Both Villa Mokum and Little Manhattan are part of a larger area development. This created the feeling that the neighborhood was still a little 'unfinished'. When more facilities, such as bars or restaurants, will settle in the neighborhood, the expectation is that feelings of identification and a sense of community might increase. One resident of Little Manhattan stated that the new bar in the plinth of Little Manhattan did have that effect. Residents started using it as 'their' local bar. This shows the effect of functionalities that are open for anyone. Arguably a local gym, coffeeshop or restaurant can have the same effect.

### **Online community**

Every resident mentioned an online medium as key for feeling a connection with other neighbors. Either a Facebook-page or a WhatsApp group to get in touch with each other. Often these platforms were created by residents, but sometimes they were set up by the operator or resident manager. They are being used for all kinds of things, such as trading furniture, promoting events, discussing housing related topics and lending out stuff.

*"If you need something, you just put it on the Facebook-page. People share a lot." (VM1)*

In all studied developments, residents stated that daily, or at least weekly, neighbors place updates on the online platforms. All events or activities are being organized and promoted through the online mediums. In short, in responding what is essential for people to feel engaged to each other, many pointed out this online community.

### **Seasonality**

In all cases, residents referred to the big difference in community feelings and behavior between different seasons. Because none of the apartments have private outdoor space, especially during summer residents feel the need to go outside their building. But sometimes they wish to stay in their own living area, instead of going to a public park. In Villa Mokum, all residents indicated that during spring and summer the shared balconies were buzzing and almost always full with people socializing. Contrary to what the respondents experience during winter:

*"In winter it simply is not there, but everybody is used to that by now." (VM2)*

Also in Little Manhattan, residents pointed out that in summer the shared outdoor spaces gave a lot of opportunity for fostering community building. It was argued to be the perfect place to get to know people. Correspondingly, social interaction in Change= was experienced way less in winter than in summer.

### **Start-up phase**

Another returning factor that was mentioned by residents for having a community feeling was the period just after moving in. Residents who lived in their complex since its completion experienced more community building than residents who did not. During the phase just after completion, people were excited to move into a new building. They organized parties to get to know each other. Moreover, residents argued that you need each other more for various things, such as lending out tools or help lifting heavy furniture. And by becoming familiar, residents more easily become friends, which makes them feel more connected to their neighborhood and neighbors.

*"As far as community goes, it should be a homogeneous group moving in at the same time, then you get a close group of people." (VM2)*

But within this big group that moves in together, everybody started to find sub-groups with similar interests. When that has happened the desire to meet up with the full group of residents decreases. Then, 'that community feeling is gone' (LM1). It is even assumed by residents that it would be harder for people who move in now, to mingle and join in. There are less opportunities to meet fellow residents in a more superficial way. And residents who live in the building for some time have already found neighbors that share interests with. Hence, they do not feel the need to interact with newcomers. The need to meet neighbors decreases when you already got to know a few people. A resident of Change= who lived there since the beginning emphasizes this:

*"At the start, you had events because people wanted to get to know each other, but now, this community is as good as gone." (CH1)*

### **Investment and energy**

The interviews also showed that when aiming for strong community building, both residents and operators should be willing to invest in it. Residents argue that investors should do more than only providing collective spaces. If you want to offer a service, you should invest in it, some residents and experts highlight. The experience is that just having these collective spaces is not enough. They would remain empty if there was no event happening. The investor does question the benefits, because it is considered as an extra and costs money.

*"If you want to keep the community ongoing and offer it as a service, you should really invest energy in it, more than a resident manager, almost like event management." (LM3)*

At the same time, when asked if residents were prepared to organize something themselves most said they were not. And the ones who had done so were mostly disappointed by the number of neighbors who participated. At the same time, a lot of the community building happening in Little Manhattan was attributed to a small group of organizers. These residents organized events bottom-up. Thus, the positive effect of events and activities is acknowledged by all, but almost none are willing to invest the time and energy necessary.

An opportunity to overcome this, according to residents, would be to form a resident committee that is in close contact with the resident manager or the operator. This way the community members themselves are involved in organizing social activities for their own community. This might still be difficult to realize with large community sizes, because residents will always have divergent interests. Nevertheless, the principle is that stronger community building is fostered when community members are organizing social activities bottom-up, compared to when resident managers are doing this top-down.

### 5.3.4 SUMMARY OF FACTORS OF INFLUENCE

Table 8. Overview of key findings on social and physical factors of influence

	Factor of Influence	Key findings
Social	Participation in planning process	<ul style="list-style-type: none"> <li>No planning process participation</li> <li>Participation would increase interaction and attachment</li> <li>Scale is considered too big for strong participation process</li> </ul>
	Influence in management & activities	<ul style="list-style-type: none"> <li>Being close to the resident / property manager</li> <li>Successful and effective activities are organized bottom-up</li> <li>Important to feel heard and that needs are met somehow</li> </ul>
	Homogeneity	<ul style="list-style-type: none"> <li>Homogeneity is found in same values, same life stage helps</li> <li>Scale is important, mixing on neighborhood level, but clustering in smaller scales</li> <li>Too much homogeneity is undesirable</li> </ul>
	Resident selection	<ul style="list-style-type: none"> <li>Selection can help to safeguard certain homogeneity</li> <li>Cherry-picking is considered a luxury for investors</li> </ul>
	Age of community	<ul style="list-style-type: none"> <li>High turnover negatively affects community building</li> <li>Owners expected to have feelings of responsibility</li> </ul>
Physical	Proximity & eyes on the street	<ul style="list-style-type: none"> <li>High proximity risks anonymity</li> <li>Prevent too many eyes on the street</li> <li>Big scale is key for feasibility of shared facilities</li> </ul>
	Semi-private space	<ul style="list-style-type: none"> <li>Another layer could function as transition zone</li> <li>Mixed feelings on responsibility over semi-private space</li> <li>Too big can already feel public and anonymous</li> </ul>
	Quality of communal spaces	<ul style="list-style-type: none"> <li>Furniture should be of high quality and robust</li> <li>Maintenance of common spaces is important for effective use</li> <li>Service manager or concierge is essential</li> </ul>
	Location of communal spaces	<ul style="list-style-type: none"> <li>Use of common space increases if resident's dwelling is closer</li> <li>Allocation at places that residents pass by or through</li> <li>Security versus centrality</li> </ul>
	Community size	<ul style="list-style-type: none"> <li>There is a maximum of people to share with and still feel like neighbors</li> <li>Clustering risks creating strong and weak clusters</li> <li>Smaller community size would lead to more bonding and interaction</li> </ul>
	Dwelling size	<ul style="list-style-type: none"> <li>Size of dwelling is not important</li> <li>Residents purposefully choose private dwelling</li> <li>limited functionalities in dwellings promotes use of shared services</li> </ul>
Other	(Un)finished area development	<ul style="list-style-type: none"> <li>More neighborhood facilities could increase place attachment</li> <li>Residents can identify with local gym, coffeeshop or bar</li> </ul>
	Online community	<ul style="list-style-type: none"> <li>Online platform can connect people functionally and mentally</li> <li>Key indicator of community for residents</li> <li>Used for borrowing things and exchanging favors</li> </ul>
	Seasonality	<ul style="list-style-type: none"> <li>In spring and summer higher levels of community building</li> <li>Outside areas provide many opportunities for social interaction</li> </ul>
	Start-up phase	<ul style="list-style-type: none"> <li>Moving in together fosters bonding and community</li> <li>Newcomers have difficulty in joining the existing community</li> </ul>
	Investment and energy	<ul style="list-style-type: none"> <li>Fostering community requires energy and investment</li> <li>Collective spaces would remain empty if nothing happened</li> <li>Millennials are less and less willing to invest in their own community</li> </ul>

## 6. DISCUSSION

In this chapter, the findings will be interpreted and their significance will be discussed in light of what was already known from literature. It will comment on whether or not the results were expected based on previous research and explain findings that were unexpected. Compared to the co-housing theory upon which this study is based, the results show several similarities, but also many differences. The chapter is closed with a summarizing paragraph in which it is argued how answering the main research question serves further theory building.

### 6.1 Developer-led co-living in light of co-housing theories

The literature review showed – and empirical results confirmed – that developer-led co-living is in many ways different from resident-led co-housing. This study is mainly based on community theories and previous research on co-housing. Williams (2005), Tummers (2017) and others have shown that co-housing can promote social interaction and increases community building in the neighborhood. The core proposition was that due to differences in for example planning process, management strategy and target group, the community outcomes of co-living would be different from co-housing.

#### *Framing co-living*

Some literature states that co-living stems from co-housing, since its residents also make compromises on personal freedoms. But this was not apparent in the studied cases. Perhaps depending on one's idea of personal freedoms, but except for outdoor space, no personal freedoms are compromised. Vestbro and Horelli (2012) stated the 'co' in co-living is generally understood as collaborative, communal and collective. The selected cases only show elements of collectivity (shared facilities and spaces). The results do not show real signs of collaboratively (structures for working together) and only very little of the communal aspect (emphasis on fostering community).

As stated in the literature, the enormous diversity in co-living typologies and definitions makes it difficult to frame. Some developments are simply marketed as 'shared' or 'co' living, but do not fit the criteria that were set out based on literature. Especially because no essential facilities are collectively used. It depends on how you interpret Ache and Fedrowitz's (2012) definition of co-housing typologies. They argue that all projects entail a participatory development process and/or a form of living together by a group of residents. This participatory development criteria is clearly not met in developer-led co-living. But what is considered to be living together? Many residents mentioned that they intentionally did not want to live together and share facilities. This contrasts the intentional community that co-housing residents often form. Possibly, developers, architects and investors can integrate more collaborative and communal elements, which might change community outcomes of future co-living developments.

#### *Drivers for co-living*

One publication stated that approximately fifty percent of co-living residents chose to move in because of the service and convenience, where the other fifty percent prioritized 'the community' (Pop-Up City, 2018). Based on the results of this research these percentages are put in doubt. The motivation of residents for moving in was often a desire for an own place. Nevertheless, many did acknowledge that the common rooms were nice extra's, but not necessarily for community purposes. This corresponds with Nio's (2016) argument that the individualistic and mobile lifestyle of millennials would limit their needs for neighborhood

community. Based on this, the explanation for the emergence of co-living derives more from the supply side than from the demand side.

### **Variety in developer-led co-living**

It can be expected that there is a big difference in community intentions between the different types of co-living. In the selected cases, residents approximately live three to five years. The assumption is that in more distinctive types of co-living, such as Zoku or Roam, the motivation and intention to foster community is higher. In many cases, those developments only offer short stay residency which results in a type of crossover between a hotel and a temporary apartment. These distinctive co-living typologies claim to offer a full living experience and provide many services. In turn, this leads to a higher price and arguably a high-income target group, including more expats. Presumably, they do not want the impersonal or colder atmosphere of a regular hotel, but are not able to move into more permanent accommodation. The studied cases have different characteristics, even though many expats live in them as well. Compared to the distinctive, flexible typologies, this study's co-living cases are found more in the middle of the co-housing spectrum (Figure 3). This might explain the assumed difference in community outcomes.

## **6.2 Explanation of community building outcomes**

### **Interpretation of community**

When discussing the community building outcomes, the interpretation of community by experts and residents has to be mentioned. Their notions of community and collectivity varied. Architects understand it more in a spatial sense. They mentioned the quality, the visual complexity and the identity of a building or place. Most residents mentioned being able to address others, social control and having events organized that neighbors can join. Simply seeing everybody together making use of (semi-)public spaces and getting to know each other was interpreted as community building. This understanding of residents corresponds strongly with the identified behavioral components of community building, while the understanding of architects is more associated with feelings. Assumingly, this can be explained because it is easier for residents to mention actions and activities during interviews instead of feelings or emotions.

### **Differences in community outcome**

Just as there are different intentions between long-term native residents and short-stay expats, there is a difference in the intentions between the target group of co-living and of co-housing. This difference can explain the variance in outcomes. Resident-led co-housing is characterized by the motivation of residents. Members choose to live in a community and share common goals. Therefore, they are intentional communities (Sargisson, 2012). These particular intentions result in more social cohesion and higher social capital (Vestbro, 2010). Results clearly show that this intention is lacking among the millennial respondents in the studied co-living cases. Therefore, community building outcomes are expected to be lower compared to the co-housing cases.

The community outcomes also varied across the selected cases. The data clearly showed that residents experienced less community building components in Change= than in the other cases. This was mainly attributed by the interviewees to the large number of residents and the lack of clustered facilities. This might explain the difference, but another possible explanation is the more mixed group of residents living in Change=. A certain homogeneity in values and life styles was found to be an important influential factor for community building. According to residents, this was quite low in Change=, especially compared to the other cases.

Another issue that came up regarding the variance in community outcomes were personal differences. When asked if they felt a need for more 'community building', many respondents answered with something like 'No, but that is just how I am'. This corresponds to Nio's (2016) argument about the increasingly individualistic lifestyle of urban millennials. One interviewee particularly mentioned that cultural factors might be in play. Compared to Mediterranean cultures, Dutch people are not that open to and bonding with their own neighborhood. So, native residents might lack motivation to foster community building in their neighborhood.

### **Community behavior**

The three behavioral components of community – social interaction, social activities and social engagement – were more or less found in all cases. According to literature, especially social interaction is positively related to social satisfaction and social cohesion (Weijss-Perrée, Van der Berg, Arentze, & Kemperman, 2017). Scholars acknowledge that social interaction can lead to stronger social structures and helps to build trust, common rules and norms (Williams, 2005). Results have confirmed that experiencing social interaction is often the key starting point for better connection and community building among residents. The shared facilities and collective spaces provide opportunities for this interaction to occur.

Even though residents do experience a lot of social interaction, they rarely have neighbors over as guests in their house. Which is considered an indicator for social interaction in some quantitative studies. They do have regular small-talk, exchange favors, borrow things and engage others in activities. These social contacts can be defined as 'weak ties' and are found to be key for community building by other scholars (Argyle, 2001; Putnam, 1995; Vermeij, 2008). However, some of those studies have been conducted in times when digital media were not that common. Digitalization has created opportunities for connection like no other. But social interaction back then could have been more personal, or 'real-time', than what is considered social interaction now. If this notion of social interaction has slightly changed over time, this might explain different outcomes from previous studies.

### **Community feelings**

In literature it was stated that social connections among residents in co-housing are tighter because residents share the planning process. In the selected cases, this collaborative planning process did not occur. But the results indicate that sharing other processes did trigger these social connections or community feelings. In particular sharing the process of moving in together seemed to strengthen social ties. Presumably, it is not only the collaborative planning process that leads to community building. All processes that residents share and that impact their living environment can foster community building. Furthermore, results show that none of the interviewees had a desire for a really strong sense of community. They did want to feel a stronger familiarity with their neighbors. It is doubtful whether the urban and mobile target group of co-living strives for a type of community associated with nostalgia and localism.

Regarding sense of community, Relph and Charles (1976) already distinguished existential 'insiders' and 'outsiders'. Insiders are people with strong sense of community and to whom the place has a symbolic-emotional value. Contrary, outsiders have a more superficial connection with their social and physical environment. Most of the residents of co-living typologies would be considered outsiders. The high turnover rate in co-living creates an environment where nobody can really become an insider. Urban millennials are more mobile and have a different attachment to a place than co-housing residents.

Place attachment is subdivided by Van Zoest (2006) into place dependence and place identity. Dependency being a more practical bond and identity being a stronger emotional

bond. Based on the results, place dependency is expected to be higher in co-living. Particularly compared to co-housing. The notion is made by scholars that place identity might increase in time, although there were no signs that this happened. However, residents did expect that when more bars, café's or restaurants would settle in the surrounding neighborhood this would increase their feelings of connection with the neighborhood.

Often, social science scholars regarded place attachment as good and mobility as potentially bad. Local roots and strong community ties were described as sources of well-being, whereas mobility has been associated with rootedness and disintegration. But Gustafson (2013) argued that mobile immigrants, that are found in co-living, have a more active, reflected attachment to a place. In this light he distinguishes 'places as roots' and 'places as routes'. Perhaps co-living developments function more as 'places as routes'. By doing so they are meaningful as an expression of the individual trajectory and identity of the mobile millennials that use them.

## 6.3 Interpretation of the influence of physical and social factors

### **The built environment and community building**

The relation between the built environment and community building was discussed mainly on the neighborhood level, due to the available literature. New Urbanism was mentioned as an urban planning movement that incorporates certain community building principles. The discussed literature showed that there is a relation between the physical environment and the amount of community building. The strength of this relation or effect is difficult to define, but the results of this study confirm its existence.

Researchers of traditional co-housing also identified factors can influence this relation. They apply on the neighborhood level. The dynamics of co-living typologies often take place on an even lower level. Generally it concerns only one complex, so it is more about architecture. Despite this, results show that the factors identified in co-housing literature are applicable for co-living too. The results show that both physical and social characteristics can influence the social networks of residents. Trying to find the human scale is key to foster social bonds.

### **Physical factors**

Nio (2016) already stated that for people the role of the neighborhood has declined in recent years. He particularly studied suburbia and found that a right balance between proximity and distance is key. Presumably, suburban residents are characterized by other values than residents of dense urban areas. Besides that, the generally higher in urban areas than in the suburbs. It is therefore no surprise that the result indicate that for co-living developments this balance might be found more towards proximity.

In line with this, Jacobs (1961) mentioned that it is important that communal areas can be seen from different angles. She calls this 'eyes on the street' and claims it allows for better surveillance and encourages social interaction and cohesion. The results confirm this in some cases, but show there is a big risk of 'too many eyes'. Inner courtyards with many windows looking down on it are not experienced as pleasant shared places to relax and interact in. Arguably the target group plays a role here. This surveillance might be important for families in safeguarding social control and safety for their children. But the millennial target group of co-living might attach more value to a certain privacy.

Experts assumed that the aesthetics and visual complexity of a complex would have an effect on community building. This corresponded to Lund's (2002) findings, but was not strongly

experienced by residents. This might be explained by the fact that the effect of visual complexity or aesthetics is quite abstract and subjective. But regarding the general importance of quality, and especially maintenance, the results strongly confirm what is found in literature. Poor maintenance and broken equipment reduces the usage of communal spaces and therefore reduce the opportunities for positive effects to take place.

Williams (2005) claimed that if the size of a community increased, the amount of social interactions decreased. Residents will be unknown to each other, just like their values and norms. In turn, this results in anonymity. The data-analysis confirmed this feeling of anonymity among residents. Both experts and residents suggested that clustering could be a solution for this. In Change=, the community size was higher than the other cases and clustering did not happen. Community building was found to be less compared to the other studied cases. At the same time it has to be understood that for certain shared facilities to be financially feasible, a critical mass is necessary for an investor.

Contrary to Fromm's (1991) findings, the results show that in co-living the lack of private facilities is more important than the small size of dwellings in encouraging social interaction. Particularly the lack of private outdoor space is found to have a strong effect. Residents purposefully chose to have their own space, so they take smaller private space for granted. Again, this confirms the importance of providing facilities within the co-living complex - or even neighborhood - that are lacking in the private spaces. If these are not provided residents will seek and find them outside their neighborhood. This explains why the communal outside spaces in Little Manhattan are so popular and why residents in Villa Mokum keep hoping for a nice bar or café to settle in the area.

### **Social factors**

In co-housing, self-management plays a more important role than in co-living. It was found that in order to foster stronger social ties, co-housing residents should have a certain influence in management. Results show this applies similarly for co-living. Still, the interviewees confirm the argument that 'people do not just set out to build social capital' (The Happy City, 2018). This study finds that the community manager or service manager is of great importance to get people to work, play and create together. In turn, this strengthen community ties. But this puts a strong responsibility on the community manager, who is generally not only there to actively involve residents. He or she will also be paid through service costs. This raises the question whether all residents are willing to pay for this. Based on the lack of community intention of many, it can be assumed that this is not the case.

Furthermore, results show that in order for community effects to take off, a certain homogeneity in type of residents is necessary. This is not directly about socio-cultural homogeneity, but about having the same attitude and values. Even though it can be argued that in many cases socio-cultural homogeneity equals homogeneity in attitudes and values. The discussion on social cohesion versus heterogeneity or inclusive neighborhoods is left out of this study. Mainly because this discussion is more relevant on a higher scale than one complex. Thus, same as William's (2005) conclusion, this study shows that homogeneity in terms of values is important in fostering community building. Nevertheless, a certain variety in residents backgrounds and occupations can improve social ties by offering fresh ideas, perspectives and insights.

In co-housing, the self-selection of residents is said to ensure a certain homogeneity. The results show that in rental co-living typologies this homogeneity is safeguarded by selecting on particular criteria, such as age and income. On top of this, resident managers of two of the co-living cases asked for motivations of future residents. By doing this they hoped to residents that

are willing to invest in the community. Even though this 'cherry-picking' is considered a luxury by investors, it clearly can contribute to creating the right social conditions for stronger social cohesion and social interaction.

### Other factors

The results also showed that more factors are in play than the ones mentioned in the literature. Nio (2016) argued that due to new communication technologies people are less dependent on their neighborhood and direct neighbors. Nevertheless, this study showed that these technologies can also be of great importance in bringing people together. Even though digitalization provides opportunities to connect to weak ties without being dependent on the neighborhood, it also offers a lower threshold for asking favors and exchanging ideas with direct neighbors. Urban professionals should start acknowledging that we live in a digitalized world. Finding new ways in how to use these technologies in a way they bring urban dwellers closer to each other and create meaningful contacts and interactions can be crucial for successful urban development.

Another finding was that in spring and summer co-living residents experience more community building behavior and feelings. Arguably, this is the case for other residential typologies too. Since people generally are more outdoors during these seasons. But it was found in this study that their willingness to invest in social activities is higher in summer too. At the same time residents' willingness to invest time and energy in their community was low. Despite a desire for familiarity and social activities, rarely co-living residents are willing to invest in this themselves.

In a time where people do not even have time to read a full news article, but only read the caption, can you expect people to invest in their neighbors? Millennials are considered more footloose than previous generations and are used to instant gratification. Nowadays, millennials might be more willing to pay for 'community' with money. This can also explain the rise of the disruptive – but expensive – new co-living typologies. Wealthy residents paying extra for community feelings, or employers investing in a healthy, social environment for their temporary footloose employees. But when the rest of this generation does not have the money, nor the willingness to invest time and energy in neighborhood community, can we expect urban professionals to provide this for them affordably? This question will remain unanswered for now. But both millennials and co-living developers should try to better understand the societal and financial benefits of achieving stronger community building. That way co-living might just meet the high expectations that some urban scholars and professionals have set for this new residential typology.

## 6.4 Summary of discussion

In summary, the discussion shows that developer-led co-living is a typology that stands out from what has been studied by scholars before. By placing it in a co-housing framework based on criteria such as length of stay and planning process the typology got a clearer definition. The research has made the initial steps in studying this collective housing model that is based on a private initiative by a commercial developer. The assumption whether or not this difference in planning process leads to different community building outcomes than its resident-led counterpart has been made legitimately.

It serves further theory building by showing that resident dynamics in co-living are different from those in co-housing. Co-living communities are not intentional and residents do not make compromises on personal freedoms. But the qualitative research strategy did provide proof for a relation between the characteristics of developer-led co-living and community building

among its millennial residents. It makes a contribution to theory by showing that co-living characteristics do provide the opportunity for components of community building to occur. It also showed that the notion of community building might be interpreted differently by millennials. A feeling of familiarity is found to be more important than a strong sense of community.

## 7. CONCLUSION

This final chapter provides the answers to this study's research questions. Next, the theoretical and methodological limitations of the research are discussed. Finally, partly based on the limitations, recommendations are provided. Both for further research, as for public or private bodies that develop, design, allow or manage co-living typologies in urban areas.

### 7.1 Conclusion

The goal of this study was to explore the emerging co-living typology and in what way its characteristics can affect community building among residents. In order to achieve this goal the following research question was used: *'To what extent can (characteristics of) developer-led co-living contribute to community building among millennials in urban neighborhoods?'* This question was deconstructed into four sub questions that will be answered one by one before concluding the paragraph by answering the main research question.

#### *1. What explains the emergence of developer-led co-living and what are its characteristics?*

In literature, the emergence of co-living is explained by several drivers. Growing urbanization and density resulting in cost increase and heated housing markets. Which pushes residents to compromise on either location or living surface. The growing number of single-person households together with changing lifestyles lead to millennials choosing for more centrality over more dwelling surface. Additionally to these drivers, this study has found that the rise of developer-led co-living can be explained mostly through factors on the supply side.

Dutch construction law requires developers to provide collective outdoor space as compensation for not having private outdoor space in developments with small apartments (<50sqm). Next, the scoring system in Dutch tenancy law pushes developers to design super-efficient residential complexes with smaller dwellings. And finally, competitive tenders from the municipality of Amsterdam prescribe certain sharing economy or community building requirements.

On the demand side however, this research showed that the majority of residents chose to move in out of necessity and not desire. Shared facilities and common spaces are seen as a nice extra, but most do not want to share essential facilities. Still, many enjoyed the various co-living characteristics, which varied in the selected cases. All have a resident manager or concierge who's responsibilities vary. All developments have shared laundry facilities and one or more common outdoor spaces. They can also have other shared spaces like a gym, living rooms, co-working spaces, cinema rooms or small libraries. Another returning feature are the big and small scale activities organized by and for residents. Finally, all had a digital medium via which they communicated.

#### *2. What is the importance of community building and how can it be measured?*

Millennials are an increasingly lonely generation and have less local community focus. But in a neighborhood context, community is not just a societal nicety. Having local social interaction and maintaining social contacts is essential for strengthening social cohesion. People need social interaction. They want to be part of a group, share experiences and be able to ask for support when needed. And although social relationships with neighbors are usually regarded as weak ties, they do contribute to more familiarity and attachment to a place.

Several components have been identified that can show the amount of community building. Based on an analysis of community constructs from previous quantitative research different components have been distinguished and subdivided in community feelings and community behavior. Social interaction, social activities and social engagement are regarded as behavior that contributes to community building. A sense of community, solidarity and a general satisfaction are considered community feeling components.

### *3. What is the effect of sharing facilities and collective use of space on community building in Dutch co-living developments?*

This study has found that sharing facilities and collective use of space creates the opportunity for casual interactions to happen and small and big scale events to take place. Through this, familiarity is strengthened which contributes to various community building components. By having these social activities, in combination with a digital medium, residents are more engaged with others. The threshold to ask for favors or exchange goods and ideas is lower. This also stimulates the feeling of being part of something and a certain solidarity towards fellow residents. In many cases, it is not about really strong community bonds with all fellow residents. It is about a certain social control that is boosted by sharing common spaces and results in the feeling others can help you out when in need.

### *4. What social and physical factors influence the effect of sharing and collectivity on community building in co-living developments?*

The literature review, in combination with the empirical research, identified several social and physical factors that can influence the use and effect of co-living features on these community building components. One social factor is a certain influence for residents in management and in the organization of activities. An online medium or platform can be key for staying connected and engaged with the management and with other neighbors. Also, homogeneity in values and principles is found to positively affect the sense of community in a co-living environment. This can be safeguarded by a type of resident selection using criteria on stage of life and motivation. Finally, regarding the age of a community it is found that the short to medium stay (3 to 5 years) character of co-living negatively affects community building. Renters feel less responsible about their living environment than owners and a higher turnover makes it harder to engage new residents in existing communities.

A well maintained transition zone between the private and the public domain is an important physical factor of influence. In the right scale it can feel like an extension of one's private living area and trigger feelings of collectivity. To achieve an effective use of the collective spaces and facilities, a minimum quality is necessary. A service manager or concierge that maintains the spaces is found to be essential to stimulate resident involvement in the common rooms. But not only the quality of spaces is important, also the location is key. Collective spaces located on places people pass by or through increase chances for interaction. On the other hand, spacious common entrances with lots of movement risk creating a feeling of alienation and decrease social interaction and bonding.

Many of the physical factors relate to proximity, or the amount of neighbors you share something with. Sharing spaces with too many people can create feelings of anonymity. The studied co-living developments had a certain massiveness that limited feelings of security among residents. Clustering common spaces in the building is a possible solution to prevent this. Sharing with less people leads to more bonding and interaction. Also, it is found that it is not the smaller dwelling size that pushes co-living residents to share collective spaces, but the

lack of private facilities in the dwellings. Moreover, in spring and summer the use and effect of common spaces is stronger. Therefore, the most used spaces in co-living are the outside loggia's and collective terraces.

*To what extent can (characteristics of) developer-led co-living contribute to community building among millennials in urban neighborhoods?*

The results show that some characteristics of developer led co-living can create the opportunity for millennial residents to experience community behavior and community feelings. By providing shared facilities and common spaces to compensate for the small dwelling areas, private developers and architects can design the physical conditions for neighbors to become more familiar. The familiarity that is created by sharing these spaces leads to many of the building blocks that contribute to community. Most importantly, it offers more opportunities for social interaction to occur. And the number of interactions is positively related to many of the other community components. The community effects created are mutually reinforcing.

However, this study has also found that including co-living elements in residential developments does not directly build community. By only paying attention to the physical environment, community building components will be limitedly achieved. Much is dependent on formal and informal social factors. Besides that, it is impossible to have a strong sense of community with all residents in a co-living development. Smaller groups will form naturally based on having the same interests and values or living on the same floor. Developers and operators of co-living developments can respond to that.

Still, personal differences play a role in the extent to which community building happens. Not everybody is looking for strong local ties and social connections. Especially the millennial target group of co-living is known for a more individualistic lifestyle. Compared to the intentional communities in co-housing, they are less willing to invest time and energy in their community. They experience places as routes instead of roots and this changes the community dynamics. Despite this, it is important for millennials to feel at home, to connect and to interact with neighbors. Feelings of loneliness decrease when feelings of solidarity increase. All in all, it can be concluded that developer-led co-living is a promising urban housing typology and is able to contribute to building community among millennials.

## 7.2 Limitations

It is beyond the scope of this study to measure the strength of the relation between certain co-living characteristics and community building effects. This study showed that in the selected cases residents experienced that some elements of community building had a connection with sharing spaces and facilities. Therefore this study only provides evidence for the existence of a relation.

The reader should bear in mind that a selection bias was in play during the data-collection and the sampling of residents. As expected, the researcher was dependent on the altruism of residents. Finding interviewees has proven to be more difficult than expected. Perhaps due to the winter season and less residents being outside and approachable during the period of data collection. Or perhaps due to the closed-off character of some co-living developments. Residents were selected mainly on their willingness to participate and consequently through a referral sampling technique. As a result, randomization is not achieved and this weakens the representativity of the sample population.

However, the choice for in-depth, semi-structured interviews did offer the opportunity to be flexible and ask additional questions. This in line with the explanatory character of the study. The depth and expected length of the interviews did increase the threshold for residents to participate, which resulted in a relatively small, but qualitative, sample. Here, it has to be acknowledged that residents who are willing to participate might naturally be more open and social. They could have shown relatively stronger community building and this might have jeopardized the reliability of the results. But the results do not show signs this happened and since the focus of this study is only on exploring the relation between the dependent and independent variables, this limitation is expected not to impact conclusions.

Further, the study is unable to encompass the entire sociological construct of community building. The literature review has shown it consists of many elements and is interpreted differently by scholars. This research tried to use an holistic understanding of community building during interviews. Considering that even researchers have difficulty in finding a clearer definition or a measuring instrument for 'community', surely the interpretation of residents is subjective. Even though this study's operationalization has deconstructed the construct into clearer components. It is expected that residents can respond differently on questions, based on their personal, subjective interpretation of elements of community. For example, some resident might have a sense of solidarity sooner than others.

## 7.3 Recommendations

### **Recommendations for future research**

This study offers a first exploration into the relation between co-living and community building. It contributes to the existing scientific knowledge base on co-housing by offering the perspective from the millennial target group of co-living. Results show many similarities with co-housing studies, but also provide many new insights that call for further research. Co-living as a research topic is relatively new, so theory was not predominant. Based on the limitations of this research, recommendations for future research concern mainly further quantitative study into the identified relations, additional exploration of the factors of influence and using a different scope.

In the methodology it was already assumed that this study can be used to formulate stronger propositions and build hypotheses. Results provide evidence for a relation between sharing spaces and facilities in a residential complex and aspects of community building among residents. It does not measure the strength of this relationship and whether or not it is a causal one. Based on the findings from this study, quantitative research could provide more statistical data that will give insight in the effects of co-living. The literature review also showed that the socioeconomical and demographic background of residents might be important for community building effects. Future study could focus on differences between owners and renters or primary inhabitants and newcomers.

Another interesting research direction would be a further exploration of the social and physical factors that have been identified. The scientific and societal discussion on the effect of the built environment on people's happiness, well-being and health is gaining more attention. Many of the identified factors of influence can be quantitatively studied. In a quantitative analysis, for example through surveys, the relation between homogeneity and sense of community, or dwelling size and solidarity can be studied. Here, more accurate quantitative criteria for community components can be used, but literature provides plenty.

The literature review and case descriptions have shown that co-living developments come in many shapes and sizes. Dwelling characteristics, types of shared facilities and collective spaces vary. Where this study has shown that the allocation of these spaces within a complex plays a role, future research could provide more insight on this variable. Also, this study cannot make sound statements on whether there is substantially more community building in co-living typologies than in residential typologies that lack these collective spaces. To prove its value, a comparable case study might be useful. That could provide valuable design input for tomorrow's urban planners, architects and developers.

Finally, using another research scope can provide relevant scientific outcomes to explore the relation between neighborhood characteristics and community building even further. This research limited the scope to large-scale developer-led co-living with millennial residents. But these are not the only typologies that have co-living characteristics. In the Netherlands, there are more residential typologies that have many single-households, high levels of loneliness, but also shared facilities and common rooms. A similar study in elderly homes can be an interesting starting point in finding out if social and physical design principles for community building apply equally.

### **Recommendations for praxis**

In a time where urbanization and densification go hand in hand with increasing loneliness and disconnection, efficient and effective solution are needed. This study concluded that under certain conditions high density residential developments can boost both community behavior and community building amongst residents. Especially in heated housing markets such as in Amsterdam, developing well thought out co-living typologies is crucial. This can be an effective way to foster human connection, whilst responding to the high housing demand. Thus, urban professionals and designers should continue developing typologies that contain effective and efficient co-living characteristics.

However, urban space is scarce and therefore of high value. This study also showed that only physically facilitating collective or shared spaces will not simply add community value. So when designing future co-living developments, different factors should be taken into account. One of the biggest risks that limits community building components is that the high number of residents creates feelings of anonymity. A big, open, spacious and well-designed courtyard or entrance does not always feel like a semi-private space. It can even feel more like a hotel lobby. To some extent, smart clustering of common spaces can be a solution to this to prevent anonymity.

Further, when developing future micro-living developments, developers should be taken into account that it is not the small dwelling size that pushes people to use common facilities. They are pulled by quality facilities that are lacking in their private dwelling. This is often private outdoor space. Not surprisingly, results have shown that common outdoor areas are also the most used and the most effective in community building. An often heard statement is that sometimes it is better to do one thing well than ten things poorly. Sometimes the feasibility of a development is in risk and choices have to be made. Then it is recommended to focus on developing quality outdoor spaces, while taking anonymity, clustering and location into account. Also, keep in mind the seasonal differences in order to limit big community differences between summer and winter.

Further, where the 'co' is generally understood as collaboration, communal and collective, results show that urban professionals and developers focus mostly on the collective part. Whilst this study concludes that the success of these shared spaces is for a big part dependent on

the social factors. A combination of bottom-up and top-down organized events can help to foster engagement. An approachable and motivated resident manager and a few residents willing to invest energy can do a lot of good to a co-living complex. It can be questioned how big the role of the architect and developer is here.

However, the operator or investor can play a part in facilitating the social structures necessary to build stronger communities. Even when taking the position of the investor and their financial interests into account, there are benefits in more connected and happier renters. Satisfied renters tend to stay longer, which results in less mutation costs. And this study provided some low hanging fruits for operators to explore. Such as offering an inclusive online communication medium to facilitate resident connection, finding an active resident manager that not only serves as concierge, setting up a committee of residents and initiating yearly returning activities.

Finally, it should be clear that you can cannot create a strong sense of community with all residents and not everybody has a desire for strong neighborhood community. Naturally, people will find peers that share interests and have the same values. Especially in developments that are short to medium stay it will results in a different type of attachment. Places as routes instead of places as roots. But it is important to acknowledge this. Possibly an online, local community platform can be a solution to better foster community ties for a mobile target group. By facilitating this in co-living developments you can accommodate a physical and social structure where residents are able to find the communities they fit in best. Hopefully, this results in strong, but also many weak community ties. In turn, this leads to more connection and less loneliness among residents in the great variety of future co-living typologies.

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## APPENDIX I – TOPIC LIST – EXPERTS

Research objectives of expert interviews:

- To better understand the characteristics of these co-living developments
- To understand the choices made in the development/design of the co-living projects
- To understand the role of community building in co-living
- To explore the social and physical design principles applied in the project
- To explore the expected or observed impacts on community building

### (A) Introduction

- Ask approval for recording the interview
- Introduction of researcher and research

*"I'm studying urban residential developments where smaller private spaces are compensated with shared facilities and collective spaces and its influence on community building. I study several cases, including this one. I conduct interviews with several stakeholders like the architect, developer and investor to better understand the characteristics and effects of this housing typology.*

*The study has a particular focus and time is limited, so it might happen that I can interrupt you in order to change the conversation topic. Hopefully you can understand this."*

- Introduction of interviewee

*"Can you introduce yourself and explain your role in the development/project?"*

### (B) Co-living characteristics

What are characteristics of this project? What makes it different from other developments?

What is being shared or what is communal or collective?

- Planning process
- Management and activities
- Facilities and services
- Spaces

What are barriers or challenges in realizing these shared characteristics?

### (C) Community building

WHAT: What do you understand with 'community (building)'

WHY: Why aim for it? What is the use or the benefit?

Feeling: Belonging / Satisfaction / Loneliness

Behavior: Interaction – Activities - Engagement

HOW: How do you achieve it? Can you describe how 'community building' got a role in this project? What is your responsibility as developer/architect/investor?

What shared facilities / collective spaces contribute most to the 'community'?

**(D) Social and physical design principles**

What factors influence the success of community building through sharing and collective facilities? (interaction / engagement / activities / belonging / satisfaction)

Social factors:

- Participation in planning process or influence in decision-making
- Management of activities
- Homogeneity
- Resident selection
- Age of community and length of stay
- Tenant type (owners/renters)

Physical (design/spatial) factors:

- Proximity (physical and mental) – not too dense
- Semi-private space – transition zones between private and public space
- Safety – visibility / eyes on the street
- Quality and location of communal spaces – maintenance
- Size of community – sharing threshold per facility
- Dwelling size – smaller is more sharing, lack of functions

Other:

Are there other factors involved that can influence the success of co-living?

**(E) Conclusion**

- Possible summary of important statements/answers
- Ask if there are still things the respondent likes to say
- Thank the respondent for his/her time and contribution
- Ask whether the respondent would like to be mentioned anonymously in the thesis

## APPENDIX II – INTERVIEW GUIDE – RESIDENTS

### *Research and interview aim*

Aim of the research: *"To explore the system, network and dynamics of contemporary collaborative housing typologies – co-living – in the Netherlands, and the effects on community building in the neighborhood. Also, it wants to explore opportunities for cultivating a sense of community through sharing and collectivity."*

Aim of the interview: *To gain insights in residents experience and interpretations on community building and on the relation with and motives and effects of co-living characteristics.*

### *Structure of interview*

The interview is semi-structured, which means the same order of questions does not have to be used in each interview. It does have a certain structure characterized with phases of questions.

Phase 1: Co-living characteristics exploration

Exploring the interpretation and meaning of the resident on the characteristics of the co-living environment. To what extent do they make use of shared facilities or communal spaces.

Phase 2: Community building

In what way do respondents experience community building in the their neighborhood. Differentiated in feelings and behavior.

Phase 3: Relations

Focus on the experienced relation between the things discussed in phase 1 and 2. Key is to relate contributing factors of community building to co-living characteristics. This can happen in two ways, depending on the course of the interview. This means the order of phase 1 and 2 can be changed.

- 1) A respondent experiences any of the dependent variables → question in what way an independent variable influences this. *Example: respondent often talks with his/her direct neighbors → question whether this happens a lot in communal spaces.*
- 2) A respondent speaks of experiences with independent variables → question in what way this effects a dependent variable. *Example: respondent says he/she makes weekly use of the shared living room → question if that influences community building.*

Phase 4: Contributing factors

Based on the social and physical factors identified in the literature question whether they recognize these influential factors. And leave room for other factors of importance.

## Interview questions

### Introduction of the interviewee

- 1) Do you have a problem with me recording this interview?
- 2) How long do you live here?
- 3) Why did you choose for this neighborhood/building?
- 4) Do you like living here?

### Phase 1: Co-living

- 1) What are the shared facilities that are available here?
- 2) Do you make use of them?
  - a. What facilities?
  - b. Why (not)?
- 3) Do you use the common rooms / spaces?
  - a. What common spaces?
  - b. Why (not)?
- 4) What are your experiences with the shared facilities and common spaces?
- 5) Do you think your neighbors make use of the common spaces and facilities?

### Phase 2: Community building

#### Behavior

- 6) Social interaction
  - a. How would you describe contact with neighbors?
  - b. How often do you speak to neighbors? And with how many?
  - c. On where or on what occasions?
  - d. Do you often visit neighbors' houses?
- 7) Activities
  - a. Are there activities in the neighborhood that you join or even organize?
  - b. Would you be willing to organize activities?
- 8) Social Engagement
  - a. Do you borrow things or exchange favors with neighbors?
  - b. Is it easy to engage people to get things done?
  - c. Is there somebody who can take care of your house if you're away?

#### Feelings

- 9) Sense of community
  - a. Do you feel at home with the people that live here?
  - b. Do you feel a bond with neighbors or the neighborhood?
  - c. Is there a strong sense of community here?
- 10) Solidarity
  - a. Can you identify yourself with neighbors?
  - b. Do you think neighbors would help you in an emergency? (emotional or functional)
  - c. Is there a lot of solidarity in your neighborhood?
- 11) Satisfaction

- a. Do you feel safe in the neighborhood?
- b. Do you feel people like living here?
- c. Are you happy with the type of people that live here?

### Phase 3: Relations

- 12) Do you think your neighborhoods affects the amount of community building?
- 13) Do you think there is more community behavior here through the shared facilities and collective spaces?
  - a. Do people organize or join more activities?
  - b. Do they engage more with neighbors?
  - c. Do they contact/visit/speak to more neighbors?
- 14) Do you see there is more community feeling here because of the shared facilities and collective spaces?
  - a. Are people more satisfied because of it?
  - b. Do you think there is a better bond between people?
  - c. Is there more solidarity through sharing facilities?
- 15) If so, which co-living characteristics influence components of community most?

### Phase 4: Contributing factors

- 16) What are factors that you think influence the effect of co-living on community building?
- 17) What do you think of the following social factors:
  - a. Participation in planning/design process
  - b. Management and activities
  - c. Homogeneity
  - d. Resident selection
  - e. The age of the community
- 18) What do you think of the following physical factors:
  - a. Proximity (privacy/density)
  - b. Semi-private space
  - c. Quality and location of the shared spaces
  - d. Size of the community
  - e. Dwelling size
- 19) Are there other factors you think are important?
- 20) What is your experience with the community in relation to the wider neighborhood?

### Conclusion

- 21) I would like to end this interview, are there any other things you would like to say?
- 22) Thank you for your time.

## APPENDIX III – OVERVIEW COMMUNITY BUILDING STUDIES AND MEASURED CONSTRUCTS

Study/author	Construct	Aspects	Statements/questions	B/F
Maass et al., (2016)	Neighborhood Social Capital	Sense of community	I feel a strong belonging with the people that live here	F
		Place attachment	If I move from here, I will long back to this place	F
		Sense of community	We have a strong sense of community here	F
		Social engagement	When something needs to be done, it is easy to engage people around here	B
		Social engagement	There is always someone taking initiative to do necessary tasks	B
		Satisfaction	I feel safe in my neighborhood	F
		Satisfaction	Generally, people like living here	F
Weijs-Perée, van den Berg, Arentze & Kemperman (2017)	Place attachment	Place attachment	I feel that this neighborhood is a part of me	F
		Satisfaction	This neighborhood is the best place for what I like to do	F
		Place attachment	No other neighborhood can compare to this neighborhood	F
		Place attachment	This neighborhood is very special to me	F
		Place attachment	I identify strongly with this neighborhood	F
		Satisfaction	I get more satisfaction out of being in this neighborhood than in another neighborhood	F
		Place attachment	I am very attached to this neighborhood	F
		Place attachment	Doing what I do in this neighborhood is more important to me than doing it in any other place	F
		Place attachment	Being in this neighborhood says a lot about who I am	F
		Place attachment	I wouldn't substitute any other area for doing the type of things I do in this neighborhood	F
		Satisfaction	This neighborhood means a lot to me	F
		Place attachment	The things I do in this neighborhood I would enjoy doing just as much at a similar neighborhood	F
Weijs-Perée, van den Berg, Arentze & Kemperman (2017)	Self-Perceived Social Cohesion	social interaction	How often, in the past six months, did you have a chat with someone from the neighborhood	B
		Social engagement	If you are away from home, is there someone in your neighborhood who looks after your house, for example to make sure that there is no forced entry or give the plants some water?	B
		Social interaction	If something important happens in the neighborhood or with a neighbor, is there someone in your neighborhood who will make you aware of it?	B
		Sense of community	Do you feel involved with the people who live in your neighborhood?	F
		Solidarity	If there is a sad moment or a sad event in your life, are there local residents who help and support you?	F
		Social activities	Are there sometimes any neighborhood parties, barbecues or other activities in the neighborhood, for which the whole neighborhood is invited?	B
		Social activities	Have you in the past year collaborated with other local residents to organize something in the neighborhood, for example, to organize a neighborhood party or activity, or to make a neighborhood newspaper [IF YES] How often have you met in the past year with these local residents?	B

Gemeente Amsterdam (2017)	Social Cohesion	Social interaction	People in this neighborhood barely know each other	<b>B</b>
		Social engagement	People in this neighborhood treat each other all right	<b>B</b>
		Solidarity	I live in a nice neighborhood with a lot of solidarity	<b>F</b>
		Sense of community	I feel at home with the people who live in this neighborhood	<b>F</b>
		Social interaction	I have a lot of contact with my direct neighbors	<b>B</b>
		Satisfaction	I'm happy with the demography of this neighborhood	<b>F</b>
French, et al., (2014)	Sense of Community	Satisfaction	Overall, I am very attracted to living in this neighborhood	<b>F</b>
		Sense of community	I feel like I belong to this neighborhood	<b>F</b>
		Social interaction	I visit with my neighbors in their homes	<b>B</b>
		Satisfaction	The friendships and associations I have made with other people in my neighborhood mean a lot to me	<b>F</b>
		Solidarity	If the people in my neighborhood were planning something, I'd think of it as something we were doing rather than they were doing	<b>F</b>
		Social engagement	If I needed advice about something, I could go to someone in my neighborhood	<b>B</b>
		Solidarity	I think I agree with most people in my neighborhood about what is important in life	<b>F</b>
		Solidarity	I believe my neighbors would help me in an emergency	<b>F</b>
		Solidarity	I feel loyal to the people in my neighborhood	<b>F</b>
		Social engagement	I borrow things and exchange favors with my neighbors	<b>B</b>
		Social activities	I would be willing to work together with others on something to improve my neighborhood	<b>B</b>
		Solidarity	I like to think of myself as similar to the people who live in this neighborhood	<b>F</b>
		Social interaction	I rarely have neighbors over to my house to visit (reverse coded)	<b>B</b>
		Place attachment	I feel that there is a bond between me and other people in this neighborhood	<b>F</b>
		Social interaction	I regularly stop and talk with people in my neighborhood	<b>B</b>
		Sense of community	Living in this neighborhood gives me a sense of community	<b>F</b>

## APPENDIX IV – CODE LIST - EXPERTS

Code Families	Codes
Co-living	Introduction
	Case characteristics
	Closed of space
	Co-living
	Collective spaces
	Demand for sharing
	High ambitions & barriers
	Rental system - Construction law
	Shared facilities
	Smaller living
Community Building	Expectation
	Social interaction (Behavior)
	Activities (Behavior)
	Social engagement (Behavior)
	Sense of community (Feelings)
	Solidarity (Feelings)
	Satisfaction (Feelings)
	Social control
	Relation with neighborhood
	Community building
Physical Factors	Architecture - Aesthetics
	Community size
	Dwelling size
	Plinth
	Proximity
	Quality and location of collective spaces
	Semi-private space
Social Factors	Age of community
	Communication medium
	Homogeneity
	Influence in management
	Participation in planning process
	Resident Selection
	Target group
Discussion	Comfort versus community
	Financial aspect
	Exclusivity
	Scale
	Tender

## APPENDIX V – CODE LIST - RESIDENTS

Code Families	Codes
Co-living	Co-living characteristics
	Effect of co-living
	Motivation
	Use of shared spaces
Community Building - Behavior	Interpretation of community
	Social activities
	Social engagement
	Social interaction
Community Building - Feelings	Satisfaction
	Sense of community
	Solidarity
	social control
Physical Factors	Community size
	Dwelling size
	Location of communal spaces
	Proximity - Anonymity
	Quality of communal spaces
	Safety - Eyes on the street
	Semi-private space
Social Factors	Age of a community
	Influence in management & activities
	Homogeneity
	Organizing activities
	Participation in planning
	Resident selection
	Online community
Discussion	Area in development
	Other factors
	Personal Differences
	Seasonal
	Start-up phase community

