



CHALMERS
UNIVERSITY OF TECHNOLOGY

Reaching Social Sustainability in Residential Architecture

An Investigation of Coliving Communities,
the Housing Sector, and their Contributions to
Social Sustainability

Master's Thesis in Design and Construction Project Management

ANNA SUNDELIN

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Division of Construction Management
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Department of Architecture and Civil Engineering

Division of Construction Management

Chalmers University of Technology

SE-412 96 Göteborg

Sweden

Telephone: + 46 (0)31-772 1000

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ABSTRACT

The Swedish housing market is suffering from a shortage of housing due to the ongoing urbanisation and demographic changes. New family constellations, a large percentage of one person-households, as well as a growing interest for coliving communities have created a need for new kinds of housing. Simultaneously, the demand for social sustainability has risen while there is still no common definition and a large uncertainty around it. This thesis investigates social sustainability and gives a definition that is applied to residential architecture in Sweden, with an extra focus on coliving communities, and on the work of the housing sector.

Social sustainability is divided into three dimensions; empowerment, equity, and social cohesion. Coliving communities are found to enhance many aspects of social sustainability, especially social cohesion where social interactions, networks and the feeling of security are increased within the residence. However, empowerment can decrease why it is important to include everyone in decisions that concerns them and allow them freedom. Many have preconceptions towards coliving communities but it is concluded that there are many different forms of coliving, and that most people would benefit from sharing with their neighbours.

Key words: Social Sustainability, Residential Architecture, Coliving, Cohousing, Housing Sector

Social hållbarhet i bostadsarkitektur

En utredning av bogemenskaper, bostadsbranschen och deras bidrag till social hållbarhet

Examensarbete inom mastersprogrammet Organisering och ledning i bygg- och fastighetssektorn

ANNA SUNDELIN

Institutionen för arkitektur och samhällsbyggnadsteknik
Avdelningen för Construction Management
Chalmers tekniska högskola

SAMMANFATTNING

Den svenska bostadsmarknaden lider av bostadsbrist till följd av urbanisering och demografiska förändringar. Nya familjekonstellationer, en stor andel ensamhushåll, samt ett växande intresse för kollektivboende och bogemenskaper skapar behov av nya slags bostäder. Parallellt har efterfrågan på social hållbarhet ökat samtidigt som det inte finns en vedertagen förklaring på vad det är. Denna uppsats undersöker social hållbarhet och ger en definition som appliceras på bostadsarkitektur i Sverige, med extra fokus på bogemenskaper och på bostadsbranschens arbete med dessa frågor.

Social hållbarhet delas in i tre dimensioner; egenmakt, jämställdhet och social sammanhållning. Resultatet tyder på att bogemenskaper förstärker många aspekter av social hållbarhet, särskilt social sammanhållning där sociala interaktioner, nätverk och en känsla av säkerhet ökar inom boendet. Däremot kan egenmakt minska varför det är viktigt att inkludera samtliga boende i beslut som berör dem och ge dem frihet. Många hyser fördomar och förutfattade meningar kring kollektivboende och bogemenskaper men slutsatsen är att det finns många olika sätt att dela bostad på och att de flesta skulle ha nytta av att dela mer med sina grannar.

Nyckelord: Social hållbarhet, bostadsarkitektur, bogemenskap, kollektivboende, bostadsbranschen, byggsektorn, fastighetssektorn

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Preface

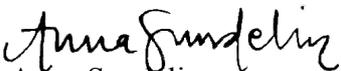
This work is a master's thesis carried out at the Department of Architecture and Civil Engineering, Division of Construction Management, Chalmers University of Technology, Sweden. The work started in January 2019 and was finished in June 2019. In this study, semi-structured interviews and participant observations have been carried out in February and March 2019.

Writing this thesis has given me endless food for thought through numerous interesting conversations. I feel beyond thankful towards everyone who has discussed these questions with me. I am overwhelmed by the positive response I have got from almost every single person I have contacted.

I would like to thank my supervisor Mathias Gustafsson, Associated Professor at the Division of Construction Management, for making me feel safe in doing something new. Throughout the process he has guided me and given me valuable input. Furthermore, I would like to thank the architectural firm Inobi for giving me the idea behind my thesis and for being so welcoming.

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Göteborg June 2019


Anna Sundelin

Glossary

The term *coliving* will be used throughout the thesis and refer to any kind of shared accommodation regardless of how much the residents share with their neighbours. It includes *cohousing* and *cohousing communities* as well as *student dormitories*, *senior housing*, *flat sharing* and any kind of collective living. However, when referring to a *coliving house*, that implies that the residents have a shared kitchen and that they actively have chosen to share more with their neighbours than standard.

This study focuses on the Swedish market why some of the concepts does not have an English equivalent. These words are listed in the English-Swedish glossary below and will be further analysed and defined in Section 2.2.

Building community	Byggemenskap
Coliving	Kollektivt boende
Coliving community	Bogemenskap
Coliving house/housing	Kollektivhus
Co-operative leasehold estate	Kooperativ hyresrätt
Leasehold estate	Hyresrätt
Property right	Äganderätt
Tenant-owned apartment	Bostadsrätt

1 Introduction

Liberté, égalité, fraternité. The motto of the French revolution is familiar to most people today, even though it was introduced more than 200 years ago. This thesis will bring back these emotive words by presenting them as *empowerment*, *equity* and *social cohesion*, and as the foundation of social sustainability. Furthermore, this work will investigate residential architecture in Sweden in general and coliving communities specifically to understand how they affect and correlate with empowerment, equity and social cohesion within the society.

1.1 Background

The Swedish housing market is suffering from a shortage of housing due to the ongoing urbanisation and demographic changes. New family constellations, a large percentage of one person-households have created a need for new kinds of housing. According to Boverket (2019), 700 000 new accommodations need to be built by 2025 to satisfy the market.

Furthermore, coliving is a rising trend and newspapers have described its health bringing aspects (Wasshede, 2016) and presented it as a future way of living (Strevik, 2019). Not much research has been done on how to develop and manage this kind of living.

Simultaneously, the demand for social sustainability has increased. The public expects sustainable choices and the purchaser requires them; working sustainable has become important to reach the demands and to stay competitive (Företagarna, 2019). However, social sustainability has no common definition and is hard to measure.

1.2 Personal experiences

My own experience of coliving is extensive and mostly positive. I have lived in four different shared accommodations; a student dormitory where we were twelve persons from all over the world sharing the same kitchen, and a terrace house with a small backyard with four other young adults, both in Lund, Sweden, as well as two different apartments when I did exchange studies in Montréal, Canada, where my roommates also came to be my family away from home.

I am an outgoing and positive person that blends well into most groups, so it is not surprising that I enjoy the benefits of living with others. However, I have lived together with more than 20 different persons, and I do believe that even the most introvert person can benefit from the small community that you become when you share accommodation. Every place that I have lived in has had different customs, different views on when the house is “clean”, and at what time it is too late to cook food and make noise. But every place has also had many similarities, and these are what I want to discover in this work. I hope to present a nuanced picture of what coliving is, and how to best design it.

1.3 Aim and objectives

The aim of this thesis is to develop knowledge on how different forms of residential architecture, with a focus on coliving communities, relate to social sustainability.

Furthermore, the work seeks to promote social sustainability within the development of new residential architecture.

Considering the presented background of this thesis, the assumption is that coliving in some ways enhance the social sustainability of a society, why special focus will be on this form of housing. On this foundation, the objectives are (1) to formulate what social sustainability is, (2) explore the residential architecture in Sweden, and (3) to study coliving thoroughly, to be able to present the most important aspects when designing and managing this kind of housing. The work is primarily directed to people working in the housing sector, with planning, construction and design, to guide them towards more socially sustainable choices when developing new housing and coliving communities.

1.4 Research questions

The main research question is: *In what ways can coliving communities contribute to social sustainability?* A starting point is to define and understand social sustainability and coliving communities respectively, to be able to find correlations.

The second question: *How does the view of coliving compare between people working in the housing sector and presumptive coliving residents?* will be answered by performing qualitative semi-structured interviews with people working with planning, construction and design in the housing sector, and by studying people living in cohousing communities through participant observations and qualitative unstructured interviews.

The discussion will bring up a third question: *What is important when developing housing in general and coliving specifically to reach social sustainability?* To answer this question, the view on social sustainability of the housing sector today needs to be reviewed. Furthermore, the answers from the first two questions will be used to find recommendations for the housing sector.

1.5 Focus and limitations

This thesis relates to the ongoing urbanisation and demographic transformation in Sweden. The point of departure is in traditional Swedish residential patterns and visible trends towards coliving communities. Only the social dimension of sustainability is investigated and neither economic nor environmental aspects are looked into.

2 Frame of reference

The first part of this chapter seeks to study different views on social sustainability and synthesise these in a definition of the concept that will be used throughout the rest of the work. It will start with defining social sustainability in general to become more and more focused towards social sustainability in the housing sector. The second part will explore Swedish residential architecture; the history, the present, and other important aspects of how people live in Sweden.

Articles on social sustainability were found mainly through the Summon database at Chalmers Library, but also through Google Scholar. Keywords were such as *social sustainability*, *social dimension*, and *social equity*. After a first read through, six of the sources were chosen for a deeper examination and then summarised in the theory chapter. With these in mind as well as with support from researchers on the topic, a definition of social sustainability was made.

The review of literature on the topic of residential architecture in Sweden started with a study of the history to understand the events leading to the situation today. To gather information about different housing tenures Boverket, the Swedish National Board of Housing, Planning and Building, were consulted and their definitions were seen as absolute. Different kinds of coliving communities were defined with help from various books as well as a professor on the subject. Both local and international newspaper articles were read to find trends and general opinions.

2.1 Social sustainability

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland, 1987, pp. 41). Sustainable development has been widely accepted as the process of change which takes both present and future needs into consideration. The 1987 Brundtland Commission Report laid the foundation of the way we look at sustainability today and even if it did not use the concept of social sustainability, it emphasised the importance of social aspects, for example social justice. The discussion continued in 1992, in Rio de Janeiro, Brazil, when the UN called for a large conference where sustainability was divided into three dimensions which are still used; economic, environmental and social sustainability (Magnusson, 2015). This simple three-pillar heuristic is referenced to as the 3 E’s (economy, ecology, equity), or the 3 P’s (prosperity, planet, people), and is a way of organising the complex problem into more understandable areas to focus on (Boyer et al., 2016).

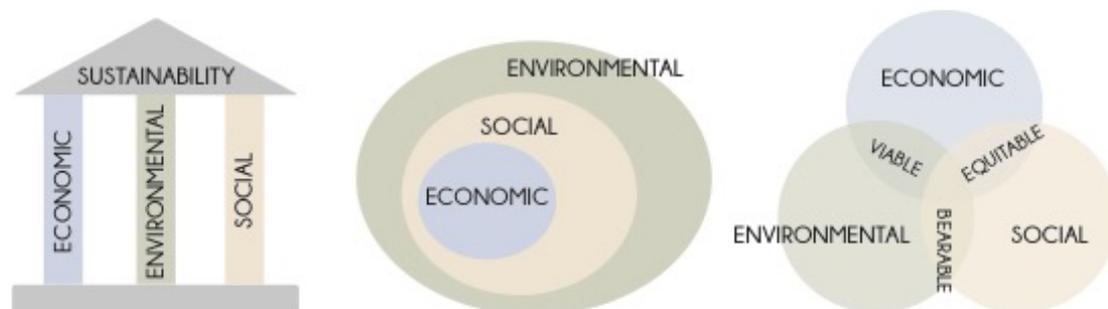


Figure 1 Three ways of visualising social sustainability (made by the author).

There is a discussion on how the three parts of sustainability relate to each other. As visualised in Figure 1, they can be seen as three equally important pillars that support sustainability; as three concentric circles where environment enclose society which in turn enclose economy; or as a Venn diagram with overlapping circles where all aspects of sustainability interact with each other (Adams, 2006). While this discussion is important to have in mind, this work will only cover the dimension of social sustainability and not focus on its correlation to other aspects of sustainability.

Agenda 2030 is a resolution that the United Nations General Assembly accepted in 2015, where all nations of the United Nations agreed on 17 sustainable development goals to be reached by year 2030 (United Nations, 2015). Every goal has associated targets and indicators to further define them and make them measurable. The goals are presented in Figure 2.



Figure 2 The 17 sustainable development goals (<https://en.unesco.org/sdgs>).

There are both basic goals, such as eliminating poverty (1) and hunger (2), as well as more complex goals, such as gender equality (5), which includes that unpaid care and domestic work within the household need to be recognised. The goal about good jobs (8) states that work of equal value should give equal pay, as well as reducing the proportion of youth not in employment, education or training. The goal regarding reduced inequalities (10) strives towards ensuring equal opportunities irrespective of age, sex, disability, race, ethnicity, origin, religion, economic or other status. Sustainable cities and communities (11) focuses on ensuring access to adequate, safe and affordable housing as well as enhancing inclusive urbanisation. Since Agenda 2030 has been accepted in all nations of the United Nations, every government should have an interest in creating laws and regulations that promote the accomplishment of these goals.

Professor Emeritus Claes Caldenby at Chalmers University of Technology divides social sustainability into three aspects; *promote community*, *empowerment*, and *affordable housing*. He explains that you should strive towards promoting community and a sense of togetherness in society, that everyone should be in charge of their own situation, and that housing needs to be affordable (C. Caldenby, personal communication, February 12, 2019).

Murphy (2012) suggests four policy concepts for social sustainability; *equity, awareness for sustainability, participation, and social cohesion*. He argues that the concept would be enhanced if clearer links with the environmental pillar were established. Furthermore, an argument is made for international and intergenerational dimensions to be incorporated to broaden the understanding. He explains equity as commitment to protect vulnerable groups of climate change, awareness for sustainability will be reached by educational programs, participation is the level to which the preferences of weaker groups are included in planning processes, and social cohesion is promoting social activity aimed at environmental goals.

Gustavsson and Elander (2013) have looked at eight city planning projects in Sweden and compared the politics of the cities, which problems that occurred and solutions to these, and organisation and governance of the different projects. They present three “nuances” of social sustainability;

- *Social inclusion* through knowledge, quality of life, and places to meet,
- *Participation* through dialogue and influence,
- *Identity* of a place through markers, from outside, history, and links to other places.

Dillard et al. (2008) discuss four universal principles of social sustainability; *human well-being, equity, democratic government and democratic civil society*. How well these principles are reached can be inquired by looking at human centred development, sustainability, and community well-being. Human well-being includes the basic needs such as nutrition, sanitation and housing, but also productivity and empowerment, and the freedom to feel secure and have social opportunities. Equity stands for that everyone should have equal economic opportunities and political voice. Democratic government includes transparency, civil rights, and political freedom. A democratic civil society enables empowerment and participation, national and cultural identity, and uses informed public dialogue and decision-making as well as social integration and inclusion.

Dempsey et al. (2011) found factors that affect social sustainability by reviewing literature, see Table 1. They conclude that social sustainability is contextual and present two main dimensions of it; *equitable access and sustainability of the community*.

Table 1 Urban social sustainability: contributory factors as identified in the review of literature (Dempsey et al., 2011).

Non-physical factors	Predominantly physical factors
<ul style="list-style-type: none"> • Education and training • Social justice: inter- and intra-generational • Participation and local democracy • Health, quality of life and well-being • Social inclusion (and eradication of social exclusion) • Social capital • Community • Safety • Mixed tenure 	<ul style="list-style-type: none"> • Urbanity • Cultural traditions • Attractive public realm • Decent housing • Local environmental quality and amenity • Accessibility (e.g. to local services and facilities/employment/green space) • Sustainable urban design • Neighbourhood • Walkable neighbourhood: pedestrian friendly

<ul style="list-style-type: none"> • Fair distribution of income • Social order • Social cohesion • Community cohesion (i.e. cohesion between and among different groups) • Social networks • Social interaction • Sense of community and belonging • Employment • Residential stability (vs turnover) • Active community organizations 	
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When the UK government developed a definition of sustainable communities and looked into how to measure achievement, they identified seven factors (Egan, 2004), presented in figure 3.

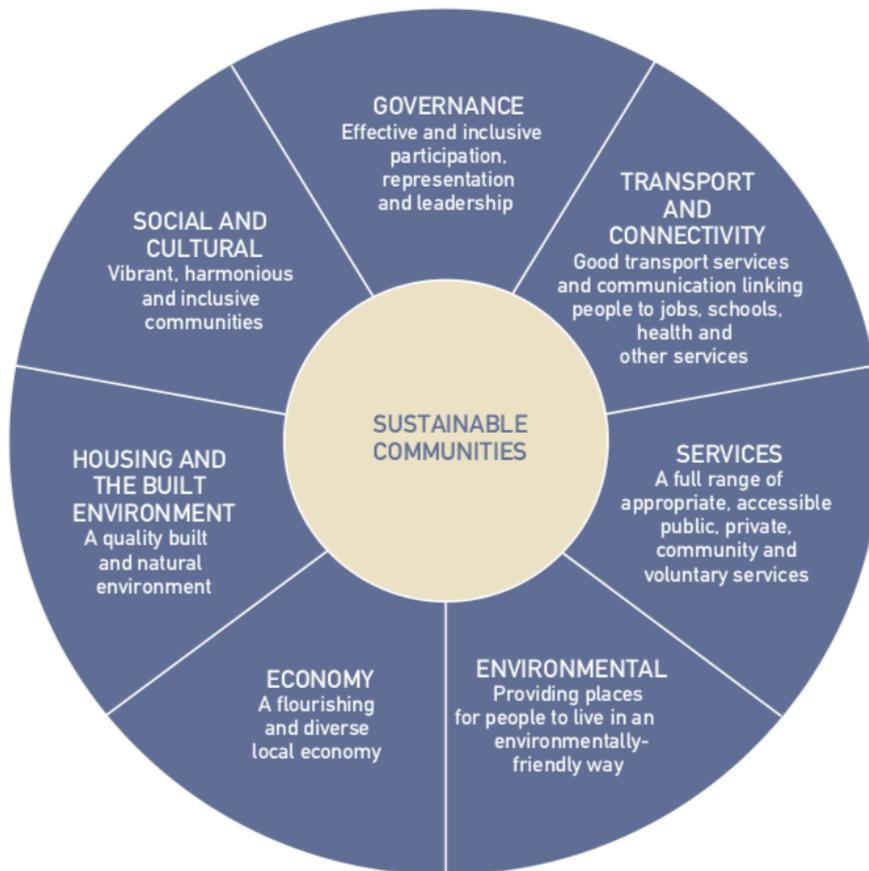


Figure 3 Components of sustainable communities (Egan, 2004).

Egan (2004) pinpoint the importance of social and cultural life because of their contribution to building vibrant and inclusive communities. To reach this, they identify six areas as crucial;

- “a sense of community identity and belonging,
- tolerance, respect and engagement with people from different cultures, background and beliefs,
- friendly, co-operative and helpful behaviour in neighbourhoods,

- opportunities for cultural, leisure, community, sport and other activities,
- low levels of crime and anti-social behaviour with visible, effective and community-friendly policing,
- opportunities for all people to be socially included and have similar life opportunities.”

Woodcraft et al. (2011) have created a framework for designing new communities with focus on social sustainability by studying successes and failures of cities around the world. They argue that both the social and financial costs of failure are high and that social sustainability is an issue of public value which affects wellbeing, quality of life, and satisfaction of present and future residents. Figure 4 shows how they present four elements that are important when designing communities that will be successful in the long run.

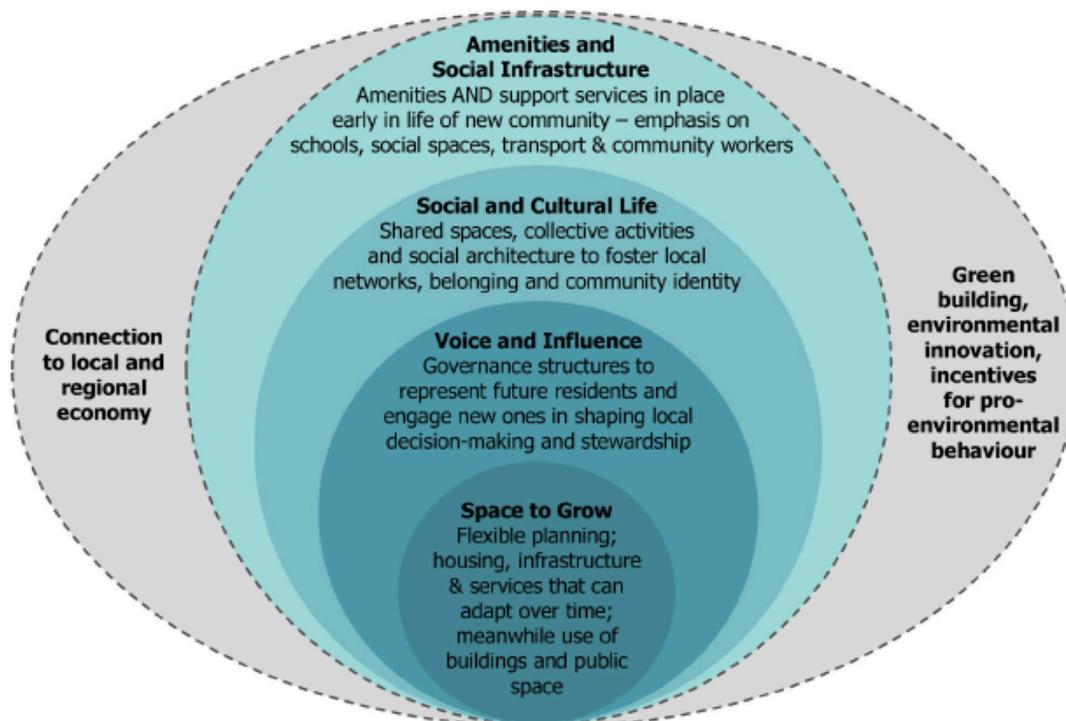


Figure 4 Illustration of design for social sustainability framework (Woodcraft et al., 2011).

The difficulty of identifying suitable measures of success is one of the largest challenges of making a case for building communities that are socially sustainable. Financing is another obstacle. Private sector developers with a relatively short term thinking, finance many new housing and regeneration projects. New business models that achieve tangible results early and boost investor confidence, are needed to promote long-term interest (Woodcraft et al., 2011).

Colantonio and Dixon (2009) created a framework for measuring socially sustainable urban regeneration in Europe. They identified ten sustainability dimensions and policy areas where urban regeneration can generate outputs;

- “Demographic change (ageing, migration and mobility),
- Education and skills,

- Employment,
- Health and safety,
- Housing and environmental health,
- Identity, sense of place and culture,
- Participation, empowerment and access,
- Social capital,
- Social mixing and cohesion,
- Well being, happiness and quality of life.”

The work identifies the difficulties in measuring the intangible aspects and calls for new approaches to data gathering.

2.1.1 Synthesis of social sustainability

When studying the literature, overlapping keywords and concepts were identified, see Table 2.

Table 2 Keywords about social sustainability.

Keywords	Authors
Participation, inclusion, democracy	Colantonio and Dixon (2009), Dillard et al. (2008), Gustavsson and Elander (2013), Murphy (2012), Woodcraft et al. (2011)
Equity, affordability, equitability	Caldenby (2019), Dempsey et al. (2011), Dillard et al. (2008), Murphy (2012), Gustavsson and Elander (2013)
Empowerment, voice, influence	Caldenby (2019), Colantonio and Dixon (2009), Dillard et al. (2008), Gustavsson and Elander (2013), Woodcraft et al. (2011)
Human wellbeing, pride, security	Colantonio and Dixon (2009), Dempsey et al. (2011), Dillard et al. (2008), Egan (2004), Gustavsson and Elander (2013), Murphy (2012)
Social cohesion, relations, connectivity	Caldenby (2019), Colantonio and Dixon (2009), Dempsey et al. (2011), Dillard et al. (2008), Gustavsson and Elander (2013), Murphy (2012), Woodcraft et al. (2011)
Flexibility, space to grow	Woodcraft et al. (2011)

By extracting keywords from the literature and bundling them, three dimensions of social sustainability was found by mind mapping, illustrated in Figure 5.

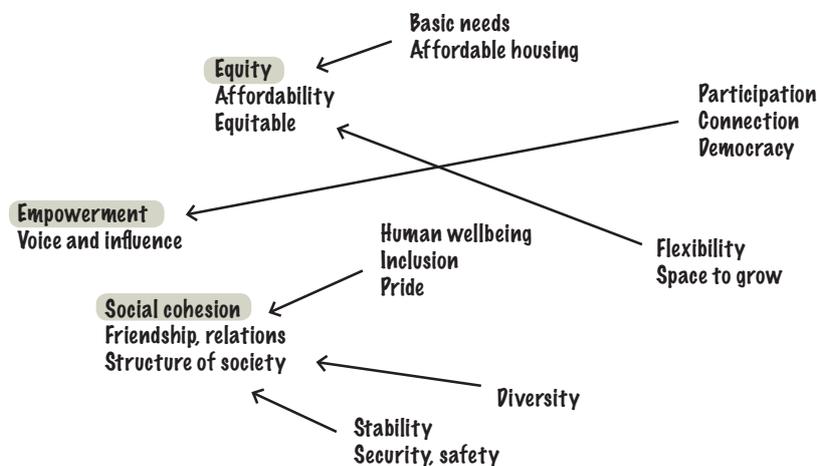


Figure 5 Mind map to find keywords (made by the author).

2.1.1.1 Empowerment

If people are empowered, they are given the opportunity to decide how they want to live their lives and to influence decisions that concern them. Cartwright (2002) explains *empowerment* as the act of imbuing someone with the power to do something. He writes that you can empower yourself by knowing your abilities and limitations and try to expand these to gain more responsibility. The legitimate power will however still lie with an authority.

In a socially sustainable society, everyone should have the feeling that they can *influence* things that concern them; every person should have the possibility to make their voice heard and knowledge about how to influence. Furthermore, everybody should feel like their situation is a result of their own choices, and that they can *change their situation* if they want or need to. The sense of *freedom* to do what you want with your life, but still a contextualised freedom where everyone agrees to follow rules and regulations.

2.1.1.2 Equity

Every person should have equal rights and opportunities. Everything that you need to satisfy your basic needs (including housing) needs to be affordable for everyone. When referring to *equity* as a factor to social sustainability, most authors frame the equal access to social resources for current and future generations. However, equal access needs to be further explored. Justice is a fair distribution of scarce resources, but there are many ways of sharing. Törnblom and Vermunt (2016) explain three distributive rules; *equality* (everyone receives the same amount), *equity* (the received amount is in relation to contribution), and *need* (the amount received satisfies the unique need of everyone).

In this work, the distributive rule of equity will be used since it is commonly used in the Swedish society. Rent is a simple example; if you pay more, you expect to get a better accommodation. The value can lie within an attractive location, a high standard, or a large amount of square meters. The other two rules of distribution will however be further discussed in Chapter 5 and questions regarding them will be asked during the interviews. When using the distributive rule of equity, it is important that the basic things people need are affordable for everyone. A culture of sharing may lead to increased *affordability*, sharing tools and buying food in bulk packages can help people survive on a lower income.

2.1.1.3 Social cohesion

To create social cohesion, *inclusion* and a feeling of *belonging* is very important. Every person should look with *pride* at their society. Different *networks* and participation groups should create *social interaction* between all cohabitants. Institutions need to create *stable* conditions to let everyone feel *safety* and *security*.

Fonesca et al. (2019) created a framework for *social cohesion*, see Figure 6, and explained it as the connections between the individual, community, and institutions. Individuals need to have motives, that stems from cognitive beliefs, for wanting to belong to a group or a society. To create cohesion within a group, it must provide a proper environment for every member and prospering relationships between members. The group or community should strive towards a goal and process performance.

Institutions must create public structures and laws that help communities thrive, and manage conflicts if needed. They should make decisions that create a stable society with trust and multiculturalism to create space for every individual.

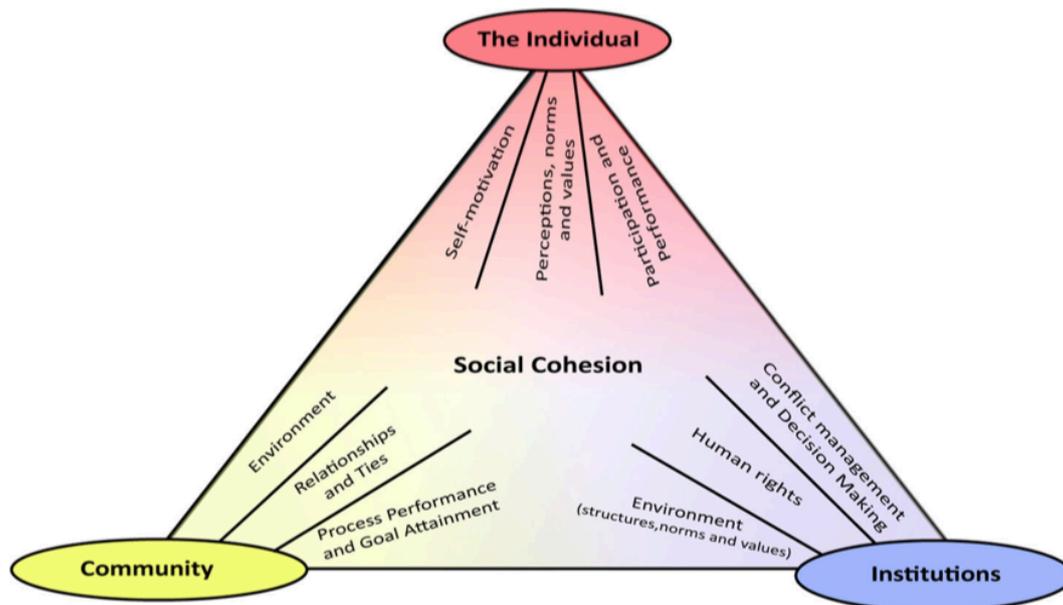


Figure 6 Framework to characterize social cohesion (Fonesca et al., 2019).

2.2 Residential architecture in Sweden

There are 4.7 million households (a single person or a number of people nationally registered at the same address) in Sweden, according to SCB (2019). It is most common to live in a property right; in a detached house, a semi-detached house, or a townhouse. Out of all households in Sweden, 44% live in property rights, and since it is in general larger households that live in them, 53% of all people in Sweden live in this kind of housing tenure.

Age and life situation affect how we live. Most children live their first five years in a multi-family residential (*lägenhet*) and then move to a single-family house (*småhus*). The children usually start moving from home when they are around 20 years old, and in the ages between 20 and 39, it is most common to live in a multi-family residential. Between 40 and 79, single-family houses are again the most common way of living (SCB, 2019).

More than 1.8 million Swedes live in one-person households. That is 38% of all households, which is the highest number in the world (SCB, 2019). According to Gunnar Andersson, professor in demographic, (2018), the high number of one-person households might be due to that young people move from home when they are 19-21 years old. Also, we live longer and many live alone as a widower or widow. The high number of people living alone creates a large need for accommodations.

2.2.1 A historical overview

During the industrialisation in the 19th century, the Swedish cities grew very quickly since farming became more rational and therefore generated fewer jobs. The

urbanisation created a shortage of housing in the cities and accommodation became a political question during late 19th century since the standard were so poor for many. *Egnahemsrörelsen* (“the own home movement”) started in 1892 with the ambition to give the less well-off a home of their own. The movement lent money to assiduous people for them to build a small house. These houses were often prefabricated and it was common for people to cooperate and help each other build houses (Nylander, 2018).

The shortage was a fact until the state started taking responsibility for the building of housing and the government set the ambition that everyone, regardless of social status, should live in a home with good standard. In 1930, a law about tenant-owned apartments came into force. It said that people could go together and build a house, that they later would own and manage together. In these housing societies, no one makes a profit on the rent since the tenants also are the owners. These tenant-owned apartments are very common in Sweden but have no equivalent in most other countries (Nylander, 2018).

2.2.2 Housing tenures

In Sweden, there are four different ways of disposing a residential property. The two most common tenures are property right with 39% and leasehold estate with 38% of the total. 23% of the residences in Sweden are tenant-owned apartments (SCB, 2018). The housing tenures are as follows;

- *Leasehold estate* (hyresrätt)
A leasehold estate is rented from a landlord who owns one or many properties. It is also possible to rent from an individual, but it does not automatically come with the same possessory titles and legal rights as a leasehold estate does (Boverket, 2019).
- *Tenant-owned apartment* (bostadsrätt)
People living in a tenant-owned apartment are members of a housing society, that in turn owns a property with apartments where every member has the access right to one of the apartments as well as a share in the housing society. Every new member needs to be approved by the society, but usually the apartments are sold at the open housing market without interference (Boverket, 2019).
- *Co-operative leasehold estate* (kooperativ hyresrätt)
A co-operative leasehold estate can be seen as a hybrid between a leasehold estate and a tenant-owned apartment. An association owns, or rents, a property and every member of the association rents their apartment from them. When a new member moves in, they pay a deposition to the association that will be returned when the person moves out. The tenant does not sell their apartment, they only return it (Boverket, 2019).
- *Property right* (äganderätt)
The most common property right in Sweden is a small house owned by a household. This housing tenure entails a person to own their residence, and not only the right to use it, like in tenant-owned apartments (Boverket, 2019).

2.2.3 Building community (byggemenskap)

A building community is formed when the people who will use a building, also will own, organise, and plan the building project. Frequently it concerns residential houses when a group of people have a common idea about how and where they wish to live. The building community can also decide what kind of housing tenure they want (Boverket, 2019).

2.2.4 Coliving community (bogemenskap)

There are numerous kinds of coliving communities, which is an umbrella term for housing that features extra opportunities for affinity between neighbours in their everyday life. Every household can have their own, fully-equipped apartment, but the members of the coliving community also have access to areas for common activities (Boverket, 2019). Professor emeritus Claes Caldenby at Chalmers University of Technology is currently researching if coliving communities are promoting social sustainability by making a case study of houses in Denmark, Germany, Spain, and Sweden. He points out that coliving communities often attracts the same people; middleclass women working in the public sector, for example librarians and social workers (C. Caldenby, personal communication, February 12, 2019).

McCamant and Durret (2011) have been cited by many in this field. They use the expression cohousing instead of coliving and explains it as “traditional villages within the context of twenty-first century life.” They present cohousing as a solution to emerging demographic changes such as more women working outside the home, fewer children per household, more single-resident households, and an increasing desire for a practical, responsible and fun lifestyle. They have found that a successful cohousing community has clear common expectations about community participation, includes no more than fifty adults, is equitable and fair, and shares dinner since it gives you a basic bond. Furthermore, they identify six common characteristics of cohousing developments;

- *Participatory process* where all residents are responsible as a group for all final decisions,
- *Designs that facilitate community* and give a strong sense of togetherness,
- *Extensive common facilities* for daily use as a supplement of private living areas,
- *Complete resident management* with community meetings for decisions regarding common concerns,
- *Non-hierarchical structure* where responsibility is shared by the adults of the community,
- *Separate income sources*, the community does not generate money for its residents and everyone has their own primary income.

In the last few years, The New York Times has written several articles on the subject of coliving as a rising trend among young in the US (Chen, 2018; Green, 2017). The global media company Forbes explains in their magazine the popularity among Millennials (people born between early 1980 and middle of 1990) both from an economic and sociological perspective. Housing has become very expensive in many popular cities, and while coliving is expensive per square foot, it is inexpensive in terms of absolute dollars. Furthermore, Millennials are known for preferring convenient and

flexible solutions, which is offered by the ease of renting a fully furnished space where you can easily meet like-minded people of the same age (Howe, 2018; Steele, 2019).

Student dormitories are a common way of living as a student in Sweden. The largest student housing company in Southern Sweden, AF Bostäder, has around 300 dormitories where 5-15 students share a common kitchen with their own shelves and space in a fridge and a freezer. Every room has their own toilet and a lockable front door, and the majority also have their own shower (AF Bostäder, 2019).

As the population in Sweden grows older, coliving communities for seniors can be a solution to the extra help that elderly need. The individuals over 70 years old have grown in numbers, become healthier, and more interested in experiencing new things. They can still live at home, but need help with some things, which can be offered in a coliving community for seniors (Familjebostäder, 2019). Several companies have started developing apartment buildings specifically for elderly, with some common facilities where the elderly can meet others in their area, and sometimes also a person employed to help with tasks that can be hard with reduced strength and mobility, for example changing light bulbs and shovelling snow.

3 Methodology

Since social sustainability is a complex subject without a single definition, the research methodology has been designed to study the subject from various angles. Due to the nature of the subject, a quantitative research method with an inductive, interpretative approach was most suitable. Throughout the work, this has been helpful when interpreting and seeking to understand how individuals perceive their reality, as explained by Bryman (2011).

3.1 Execution and process of the study

An overarching outline of the study process is visualised in Figure 7. Even though the process is outlined as linear, it is worth noting that it included iterative elements going back and forth between literature review, interviews, and data analysis. To understand and interpret some results from the interviews and participant observations, it was necessary to go back to literature and find similar cases or other explanations.

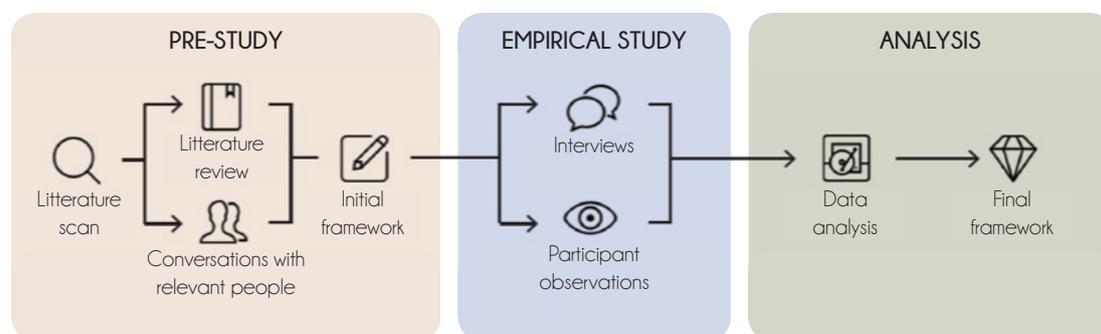


Figure 7 Research process outline (made by the author).

The purpose of the pre-study was to better understand and broaden the field of interest. Firstly, by finding and scanning literature, followed by a literature review and conversations with relevant people, mainly researchers at Chalmers University of Technology, which resulted in an initial framework. The questionnaires used in the interviews and the aspects to observe in the participant observations were based on this framework. The empirical study searched to answer the questions found by conducting semi-structured interviews and participant observations. Findings from the empirical study was summarised to find common opinions and resulted in a final framework for answering the research questions.

3.2 Collection of data

The data for this study was collected through interviews and participant observations. To achieve representative results, focus was put on talking to a large quantity of people while striving towards a wide diversity among them.

3.2.1 Interviews

To represent the housing sector, six architects and five developers and managers of property were chosen, see Table 3. Two of the architects have designed a house for coliving, one works with coliving, one with coliving for seniors, one with co-operative building, and the last one is an expert on housing tenures. The five developers and managers are all working in organisations of differing sizes and with differing aims, to provide the study with a wide diversity of views on the questions. One is a smaller company with a special interest for coliving, another manages a coliving house, one is owned by the municipality, and the last two express a special interest for social sustainability. Questions discussed regarded the view of social sustainability and coliving communities.

Table 3 Interviewees from the housing sector.

Profession	Special interest
Architect	Designed a coliving house Responsible for building and coliving communities in Gothenburg
Architect	Housing tenures
Architect	Coliving for entrepreneurs and sustainable societies
Architect	Senior coliving
Architect	Drawn a coliving house
Architect	Building communities
Developer + manager	Builds a coliving house
Developer	Will do coliving apartments in the future
Developer + manager (2)	Manages senior and coliving houses (company owned by the commune)
Developer + manager	Works with social sustainability (company owned by members)

Interviews were also held with individuals living in coliving communities, see Table 4. Three persons that will soon move in to two different coliving houses and have worked with developing these. Furthermore, one person living in a coliving house, two persons living in a coliving for young entrepreneurs, and five students living in a dormitory were interviewed. The questions asked were related to different aspects of social sustainability, without mentioning the term.

Table 4 Coliving residents

Who	Where
Coliving resident	Lives in a coliving house with no common dinners
Future residents (2)	Responsible for building a coliving house
Future resident	Member of BoIhop, works with questions about coliving
Coliving for young entrepreneurs (2)	Living in a coliving apartment in Stockholm
Students living in dormitories (5)	Living in different student dormitories in the same house

The interviews were semi-structured. Most of them lasted an hour and were done at the offices of the companies. In the appendix, two questionnaires can be found consisting of questions on the topic of social sustainability and coliving. However, they were only used as a guidance and the questions were not asked word by word.

3.2.2 Participant observations

To understand how individuals living in coliving houses perceive their way of living, participant observations were made. Three visits to two different coliving houses that share dinner together were made. The researcher helped prepare the meal and then stayed and ate with the residents. The houses were situated in Malmö and Gothenburg and the first served dinner three times every week and the latter five times. They were chosen since they are newly built and can be seen as typical coliving houses.

According to Gold (1958), there are four roles that a participant observer can adopt, presented from the most distant form to the most engaged; the complete observer, the observer-as-participant, the participant-as-observer, and the complete participant. For this work, the researcher took the role as observer-as-participant, since she engaged in the activities at the coliving houses, as if she also lived there, but at the same time observed and asked questions for the work. The researcher had some specific questions that she tried to ask everyone but first and foremost let the residents speak freely about everything that came to their minds. The chosen role helped to build trust and thereby get honest responses.

Bryman (2011) explains three ways of taking field notes; mental notes, preliminary notes, and complete field notes. Since using a recorder or taking physical notes during the observations can be unpractical and make the participants aware that they are studied, mental notes should be taken until there is a moment when the researcher can make preliminary notes. As soon as possible after the visit, complete notes should be written down and include details about occurrences, situations, persons and conversations. First impressions, emotional experiences and preliminary ideas on how to interpret observations are also important to write down.

3.3 Analysis and interpretation

The notes and recording from the interviews were summarised after every interview. Some exact quotes were also written down and translated freely from Swedish to English if necessary. By using different coloured markers, sentences were extracted from the summaries and mapped into different themes. By studying these themes, overarching analytical dimensions were found, see visualisation in Figure 8.

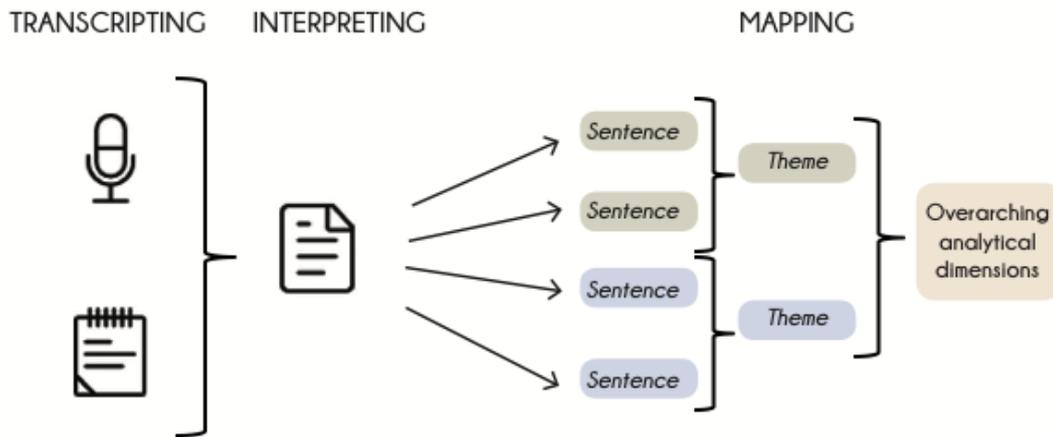


Figure 8 Thematic analysis process (made by the author).

3.4 Ethical concern

The major ethical issues in conducting research are informed consent, beneficence, respect for anonymity, and respect for privacy according to Fouka and Mantzourou (2011). In this research, every interview started with an explanation of the studied topic and how it would be presented, and the interviewee got to choose if they wanted to be a part of it or not. No one was harmed during the research. All answers are anonymous and are presented as collective answers rather than presenting interview by interview, to increase the confidentiality. The nature of the studied subjects is not very private but is somewhat subjective and it was important for the researcher to approach this with an open mind and collect answers without prejudice.

3.5 Validity

To gain trustworthiness, as many persons as possible within the timeframe of the report were interviewed. In the end, the same answers came up during the interviews, which is a sign that the material is sufficient. However, the empirical findings are based on how the researcher interpreted the answers. To avoid misinterpreting, direct quotes from the interviews were transcribed to support the interpretation. Also, follow-up questions were asked get a deeper understanding of the thoughts and opinions of the interviewees.

Considering the complexity of the examined subjects and that some aspects are very subjective, seeking to generalise every answer is almost impossible. Instead, this report aims towards introducing new thoughts and opinions rather than the whole answer to the questions.

4 Empirical findings

All empirical findings have emerged from interviews and participant observations. The chapter is divided in two parts since the interviews with the housing sector and with the coliving residents had different focuses and questionnaires.

4.1 Housing sector

The interviews with people working in the housing sector aimed towards both understanding the view on social sustainability of the interviewees and the companies they worked at, as well as gaining knowledge about a certain area within coliving or residential architecture that the interviewee was specialised in or worked with. Firstly, the view of social sustainability will be presented collectively for all interviewees. Secondly, the different specialisations of every interviewee will be presented one by one.

4.1.1 Social sustainability

All eleven interviewees from the housing sector confirmed that there is a discussion about social sustainability but no real definition of it. One called it “a buzzword” and said that there is “no real dialogue”, people assume that “everyone knows” what it implies and entails, without really having a common meaning. The housing sector is very dependent on the state of the market and for some years now, it has bloomed, why municipalities have put high demand on sustainability. However, since the market has entered a downward slope, the demand sink with it.

Only two of the interviewees know how the company they work at have defined social sustainability. Two others refer to colleagues that work with these questions, and the other seven says that their company do not have a framework for working with this. One of the architects says that they had a series of lectures about social sustainability two years ago and that it is something they strive to include in every project, but that all their projects are different and no common framework can be done. Another architect works as a consultant, why the importance of social sustainability always differs depending on how important it is to the client. A third architect points out the difficulty in making the client make responsible choices since it is them that have the money. The architect wishes to be able to write a contract with every client before starting working together, confirming that they are both on the same level. A developer and manager says that social sustainability is something they talk about during coffee breaks, but not in the projects. Another points out that they avoid dividing sustainability in three pillars since that would make social sustainability stand in the shadow of environmental and economic sustainability.

One of the two companies that had a strategy for working with social sustainability has divided it into four aspects;

- *dynamic neighbourhood with variation,*
- *built environment that takes departure in the humane aspects (architecture that leads to a feeling of belonging, togetherness, safety and integrity),*
- *dialogue,*
- *create an engaged society (integration, diversity, and belief in the future).*

Early in the process of creating new housing, they have a support process and a tool with the intention to look at these four values and make sure that they are reached. Throughout the project they consistently look at the different questions, but it is sometimes hard to make sure that they are being followed until the end, since the building time for a house is very long. To measure if they have reached social sustainability, they do a survey every second year.

The other interviewee that knew how to define social sustainability worked specifically with these questions. The company is a cooperative that is owned by the members that live in apartments they manage, it is not listed at the stock market, and no one earns money on a surplus. They mainly build tenant-owned apartments but their goal is to be able to offer attractive and sustainable residents for everyone. They have a tool for sustainability in general, but also for social sustainability specifically, where they have identified four pillars that every tenant-owned apartment community should stand on. These are;

- *opportunity to influence,*
- *community utility,*
- *security,*
- *develop society.*

To reach these goals they have an activity plan where they list activities, what good they will do for the society and for the company, and who is responsible.

Two of the companies support organisations working with social sustainability. Both companies experience benefits from this, one of them says that it helps making some neighbourhoods more attractive which makes their apartments there more valuable. and the other lifted that it also draws attention to their own company when they help others.

When the interviewees talk about how to design residential architecture to promote social sustainability, some things reoccur. Many want to create places where people naturally meet their neighbours and stress the importance of large staircases and a welcoming entry that feels safe. A feeling of safety can also be reached by placing storage for bicycles and laundry rooms on ground level, instead of in the basement, and making sure every corner is well lighted. Cafés, restaurants and small shops create a livelier neighbourhood and a workspace brings people together. To create diversity, many companies strive towards mixing different forms of tenures. Some also analyse which groups that live in an area today and try to build things that will attract other groups. Most interviewees agree that diversity is a variation within age, life situation, and background.

The reason for working with social sustainability is often unclear. Some say that the Gothenburg municipality request and favours it and if you have a reputation of being socially sustainable, you will get advantages in the future. Sustainability is often more important for companies that will manage the buildings rather than only sell them, they need to have a more long-term and sustainable perspective and make sure people live and stay long in their apartments. No one sees it as their own wish or responsibility.

4.1.2 Coliving

The interviewees working in the housing sector had different areas of speciality regarding coliving. Most of them were curious about the concept of coliving but said that they had not a full, clear picture of it. Only one of them would consider living in a

coliving community but she did not live with others since her partner did not want to. The couple had however had several people renting a room in their villa, mainly students. Others claimed that it would not fit their life and family situation, or that they wanted to decide more for themselves and did not want to compromise. One of the interviewees said that he had become more positive towards coliving after working with it, but not enough to change the living situation of his own.

4.1.2.1 Coliving house

Two of the architects have drawn apartment buildings for coliving communities and one developer is in the process of building one. All three projects have been initiated by different groups that want to live this way and the groups have been very involved in the process. This involvement takes both time and effort but is seen as a guarantee that the somewhat special apartments will be rented and it has been a guidance for how to design the buildings since none of the architects and developers had any previous experience within the area. However, one of the architects says that if she would draw another coliving house, she would not want to include the future residents as much. She said that the direct democracy made the process very complicated and, more importantly, very time consuming. Furthermore, she thinks that the interest for coliving is enough to not have to worry about no one moving in. She adds that coliving is requested mainly by older women.

For one of the architects, the contract form they used became an issue. They were four parties involved, the company that would manage the house, the company that built it, the group of people that would move in, and the architectural firm that worked as consultants. They used partnering as contract form, which the architect did not experience as optimal since the parties had different goals and time frames. The building company had a much shorter write-off period for the project than the others, hence they did not have the same long-term thinking.

The developer says that he has learned a lot from the communication and that you get a new perspective on choices you make when you also have to explain them to the future residents. He explains that their largest incentive for working with coliving communities is as a way of getting more jobs. The Gothenburg municipality is positive towards both building communities and coliving communities as they see them as a step towards reaching social sustainability, and by specialising in this area the developer hope to get similar jobs in the future.

Regarding the design of the buildings, the architects had similar thoughts. The basic idea was to make the apartments 10% smaller than standard apartments and put these extra square meters on common spaces. To create natural encounters, they put these areas, such as kitchen, living room and smaller rooms for different hobbies on the ground floor. This location forces the residents to pass the common areas on their way to their own apartment. They have both designed the communication areas with extra care, one of them by drawing generous staircases that both nudge people to get some exercise by choosing the stairs as well as offering space for encounters. The other architect chose to make exterior corridors that are broader in some parts to create balconies. The first architect agrees that corridors outside create areas to meet, but also brings up the problem with insight, the extra energy that leaks when you open the front door, and that you cannot walk without shoes to the other apartments and to common areas. Furthermore, the exterior corridors need maintenance, for example shovelling in wintertime.

Concerning the number of apartments, they say that there is no such thing as a perfect number. “Regardless of how many apartments there are, people will think that that’s the optimum,” says one of the architects.

4.1.2.2 Coliving for entrepreneurs

One of the interviewees had written his master’s thesis on coliving for young people in tech business. In his thesis, he researched many aspects and the history of coliving which resulted in a coliving house for this target group.

He is now involved in the process of building a house for this purpose and explains that the Boverket Building Regulations makes it hard to draw small and efficient apartments. Also, the laws and regulations regarding housing tenures can be a problem, why they try to make the house into a hotel instead. He says that young people and students most likely would consider living in a smaller space than the regulations let you build. He also stresses the importance of flexibility; many Millennials, especially in the tech business, want to be able to move in and out very quickly and easily, which also would be facilitated if the house is a hotel. However, drawing a hotel comes with other consequences, for example very strict rules on how to evacuate in case of fire.

4.1.2.3 Coliving for seniors

Three of the interviewees at two different companies work with coliving for seniors. One of the companies is an architectural firm that draws new apartment buildings for those over 55 years old with a large conservatory and a focus on interaction between neighbours. The other company owns rental apartments and is supported by the Gothenburg municipality to create safer homes for people older than 70 years old. The idea is to gather at least 25 elderly in an already existing building and adapt the apartments to be more accessible, as well as providing a room for dining and doing things together. Also, one person works there to assist in some activities as well as keeping company.

4.1.2.4 Building communities

Two of the architects, state that building communities are the most socially sustainable way of building since it involves the future residents throughout the process. One of them also highlights that people often make more environmentally sustainable choices if they are the ones to live in the house in the future. The other one brings up the economic aspect; it is often less expensive since there is no developer who wants money. However, without the developer, the future residents have to do all the job themselves. The developer is often a company with much more money than a private person and has done similar projects before, why the interest and risk is much lower. Building a house is often a very long process why it might be hard for people to carry through. Both architects say that the state or the municipality needs to promote building communities by helping them finance their projects and give them information and advice.

4.1.2.5 Socially sustainable societies

One of the interviewees works at an architectural firm that specialises in socially sustainable societies. When they plan a future society, they want to make sure that it will work many years ahead. Their key for this is to think in a small scale. They avoid very large properties to make it possible for smaller companies or building communities to build. This creates a large variety of design and housing tenures, which leads to diversity and an organic community which will last for long.

We also discuss *social housing* which is when the state, by non-profit organisations, owns and manages rental housing with the aim of providing affordable housing for people left out on the housing market. The interviewee thinks that this should be used in Sweden and says that the initiative to socially sustainable societies and solving the shortage of housing should come from the state.

Furthermore, the same interviewee brings up accessibility and the importance of making the society and housing accessible for everyone, regardless of your physical limitations. When you build smaller or cheaper apartments you might exclude some individuals from both living there and visiting those living there. The subject is somewhat controversial and it is hard to argue anything else than that everything should be accessible for everyone. If we start excluding some people, it might be the beginning of a slippery slope to further exclusion.

4.1.2.6 Housing tenures

One interviewee has an interest in different housing tenures. She does not believe in mixing different tenures in the same buildings since this creates gaps between the residents. She refers to the past and says that it is important to understand the Swedish history if you want to understand why we have the four kinds of housing tenures as we have today.

4.2 Coliving residents

The interviews and observations of people living with others focused mainly on aspects of social sustainability. All interviews were held in the homes of the coliving residents if not stated otherwise. The different types of coliving communities are listed in Table 5.

Table 5 Features of investigated coliving communities.

Type of coliving	No. apt:s	No. adults	Own kitchen	Shared kitchen	Shared meals (times/week)	Other shared facilities
Coliving house 1 (not yet built)	59	-	x	x	x (3)	Greenhouse
Coliving house 2 (not yet built)	-	-	x	x	x (3)	
Coliving house 3	35	50	x	x	-	Play room for children
Coliving house 4	40	45	x	x	x (5)	Sauna, garden, gym
Coliving house 5	45	80	x	x	x (3)	Sauna, play room, balconies

Entrepreneurs	1	13	-	x	-	Bedroom, toilet and shower, living room
Student dormitory	1	6	-	x	-	Shower, living room

4.2.1 Coliving houses

Five different coliving houses were studied through interviews with four persons and through participant observations. They are all based on the idea of having around 10% smaller apartments than standard, and in return get large common areas. All apartments have their own bathroom and kitchen but they also share a large common kitchen, living room, and other areas such as garden and different rooms for hobbies.

4.2.1.1 Future residents

Two interviews were held with three persons that have engaged in planning and building new coliving houses (Coliving house 1 and 2 in Table 5). The first interview took place at a café with two women that for more than ten years have been involved in building a coliving house in Gothenburg. The second interview was held in the home of a third woman who is a member of an organisation that promotes coliving communities in Gothenburg and has worked non-profit with these questions for many years. She lives alone now but will soon move in to a coliving house that she has been working with. All three interviewees have visited many coliving houses and tried to understand what the most important features are and the optimal design of a coliving house.

The interviewees say that in their organisation, they always try to involve their members as much as possible. They want everyone to feel included and to engage in a work group since they believe that this will make people feel empowered and stay in the house longer.

In these coliving houses they have chosen to only have leasehold estates and no tenant-owned apartments. There was a discussion about creating a larger diversity through offering different tenant forms, but they feared that it would also create gaps within the house. They agreed that everyone should live there on equal terms to make sure that everyone feel like they have the same rights and obligations. Every resident in House 1 will rent directly from the manager of the house while the residents of House 2 will rent as a group. The latter form of renting gives the tenants larger control of who will move in, but also brings consequences for the whole group if one member cannot pay and will make every resident a second hand tenant which gives them fewer rights compared to first hand tenants according to the law.

An important aspect for both houses has been to offer a low rent. To achieve this, they have tried to make the building as cheap as possible, for example House 2 has excluded balconies. However, building new houses are expensive and neither of them will have as low a rent as they were hoping in the beginning. The developer and future manager of House 1 will subsidise the rent since they see this house as a pilot project and want to invest more in the concept of coliving in the future. If only the square meter of every apartment is measured, they are more expensive than standard, thus one has to take into

account that the residents also have access to large common areas. This is however hard with the laws and regulations today.

They all agree that sharing meals is crucial for the concept of coliving. To help with cooking is the only obligation you have as a resident of the coliving house, you do not have to eat in the common dining room or join any other social activities. The two interviewees from House 1 talk about letting people from the neighbourhood visit and get involved. They have talked about letting others join the everyday cooking and invite them to concerts and other things they arrange in the coliving house. They talk about the importance of not isolating themselves and contribute to the society. House 1 will not use quotas to achieve diversity but they have designed the house to promote it. They have mixed different apartment sizes to allow both families with children and single-households to move in. One of the apartments will be shared by five students and they also have seven apartments for people who need extra help.

4.2.1.2 Coliving without shared meals

The interview was held at a café during lunch break. The coliving house (Coliving house 3 in Table 5) where the interviewee lives was built as a standard apartment building in 1969 and then rebuilt in 1980 to become a coliving house with a shared kitchen and common areas. They are around 35 households with 50 adults. The interviewee moved in in 2006 when she was 24 years old because her partner lived there. When they broke up, she moved to another apartment in the same house. She thinks her apartment is too small and wants to exchange it to another one in the same house. Even though living in a coliving house comes with responsibility and a need for engagement, she thinks the low rent makes it worth it. The first thing she says about living there, is how much she has learnt by doing it. “I’ve learnt about children, there are a lot of children in all ages that I’ve spent time with and gotten to know many of them. I have also learned about economy and managing a building and what you need to do, for example pipe replacement. By sitting in the committee, I’ve learned about how the community works, laws and regulations. It’s been a good school for me.”

The house is owned by the coliving community and is a co-operative leasehold estate. They own and manage the house completely by themselves which can be hard sometimes since the house is large and no one has any previous experience of this. The apartments have a slightly lower rent than others with equal standard in the same area. The low fee makes it possible for anyone to live there and also to work part time and still be able to pay rent if they would like.

The interviewee says that the common areas are badly planned and not welcoming, she does not feel relaxed there and not many use them. They have discussed moving these areas from the fifth floor, where they are situated today, to the ground floor, to make everyone pass them on their way to their apartment. The interviewee says that today they communicate through Facebook, which leads to her missing events since she does not log into her Facebook account very often. She thinks it is hard to know if someone is in the common areas and calls for a better system, she only knows those living on the same floor as she does and she wants a way of communicating vertically through the building.

4.2.1.3 Coliving house with common dinner in Gothenburg (participant observation)

Participant observations were made in a coliving house (Coliving house 4 in Table 5) in Gothenburg at two times. The researcher visited one Wednesday afternoon around 4 pm to help prepare dinner and then ate with the residents, and one Friday afternoon when she participated in an *after work* at the house and then stayed for dinner. This house is only for adults with no children living with them. Most people living there are above 50 years old and live alone. Five days a week, dinner is served at 6 pm and most residents join this. They are divided into groups that prepare dinner together for a week, every sixth week. These teams change every year so that you get to know others. Besides cooking, everyone needs to join one of the groups that manage the house in different ways.

The rules of the house were decided when it was built many years ago and to change something is not very easy. Some of the residents wanted fewer shared meals, but the majority voted against and then everyone had to continue cooking five days every week. They have four groups that manage the house; internal and external information, management of the house, household, and well-being. You can choose yourself which group you want to join based on your interests, and you can change group every year.

There are mixed opinions towards the different ages in the house since some think that some age groups do not contribute as much as other. One of the oldest women says that the younger do not have the time nor the interest in helping as much as needed. She thinks that the elders do more of the daily work and that they should only have people over 50 living there; people who have more time and want to spend more time with each other. However, there are also elders who say that the younger brings energy and points out that they can help with things that require physical strength that elders might not have. The younger say that they learn from the older and that dinner every day would have been hard without them. When it is their turn to prepare dinner for a week, it is difficult to find time to do anything else besides working.

Since the residents eat dinner together almost every night, they know each other well. They know who is home and who is out. If someone is sick, the others bring them food and will cover for them in the kitchen. Every Friday, they have after work in the afternoon and share a more luxurious dinner – they spend both weekdays and weekends together.

Regardless of how they felt towards coliving when they moved in, most have accepted it now and see large benefits both in helping each other with the daily work and the companionship in the house. They do not want to call it a *kollektivhus* (*coliving house*) but rather a *gemenskapsboende* (*togetherness living*) since the first makes people think of the hippie movement. They feel like people have prejudices about their way of living and that they have to explain it, but that everyone is positive after visiting. Some of the elder say that their children and relatives are thankful for them living there since it gives them food and company.

4.2.1.4 Coliving house with common dinner in Malmö (participant observation)

Participant observations were also made in a coliving house (Coliving house 5 in Table 5) in Malmö. The researcher visited a Monday afternoon at 3.30 pm and helped prepare dinner and stayed until 7.30 pm when everyone had eaten. In the house people of all ages and different family constellations live. At the ground floor, they have a large

kitchen, dining room, living room and a play room for children. Furthermore, there are smaller rooms for different hobbies. They also have common areas on the top floor, a film room, a sauna and storage. Dinner is served three times per week and they have an app where you fill in if you will attend or not, usually almost half of the residents eat. They are divided into groups and every group cooks dinner 1-2 times per month. These groups never change since the majority does not want to, but there are also some who really want to change.

When the house was designed and built, there were a group of future residents involved in the process. Some still live there today and remember the process as if they had the power to influence the design of the house. They say that the care they put into the work probably is what has made them want to live there for so long. However, when asked, they cannot mention a specific thing that they affected.

The standard is similar in the apartments, but they differ in size and placement. One large difference is how deep the exterior corridor is outside every apartment. The deeper parts create balconies and the thought is that they should be shared by everyone, but they are only used by those who live closest since others feel uncomfortable sitting right outside the front door of someone else. This might have been better if the furniture on the balconies were common, but now every balcony is furnished by the one who lives closest.

Many think that the house has too many apartments. They say that 80 adults are impossible to get to know and wish that it would be half the size. Some say that it is hard to get your voice heard when you are that many, and do not know each other. You do not get the same empathy when you feel like strangers.

Compared to the coliving house in Gothenburg, it feels like most people have *chosen specifically* to live here. A reason for this might be that the housing market in Malmö is different than in Gothenburg. In Malmö, it is much easier to get a rental apartment, why people are not bound to stay the same way as they might be in Gothenburg.

One person says that she would want to do more things together with her neighbours, but thinks it is hard to know when people are available. She does not go down to the common living room to relax or read a book. Sometimes she sits there when she works from home.

There is an ongoing discussion regarding to which extent they should let others be on their premises. They have a large terrace on the roof which they wanted to share with the neighbourhood, but when others come, they leave litter and do not show consideration why they choose to put up fences. Their backyard is still not completely closed and sometimes unknown children run around the outdoor corridors at nights. They have also had break-ins, why they are considering to have only closed gates.

4.2.2 Coliving for young entrepreneurs

The interview was held in English on a Saturday over Skype while the interviewees were eating waffles in their living room. Both interviewees were open and honest with both advantages and disadvantages with their way of living, but all in all they seemed truly content and chose to focus on the benefits. “I’ve sacrificed a lot to live like this, but there are rewards that compensate for that.” They are 13 young entrepreneurs who are sharing an apartment in the centre of Stockholm; “an awesome house at an awesome location”. They all share one kitchen and two bathrooms and some even share bedroom.

The interior is well designed and decorated with one strong colour in every room. To avoid conflicts, the landlord has outsourced cleaning and buying staple products, for example olive oil. They have biweekly house meetings to which the landlord does not attend, but has ordered food to.

The idea was inspired by the global founder accelerator BlackBox as an opportunity to meet and live with other entrepreneurs and developers, to share ideas and knowledge with each other. “This was not created as a solution to the housing problem”, says one of the interviewees. “You don’t live here because you don’t have any other option.” To move in, you fill out a form on their Facebook page and if your profile matches what they are looking for, you will first stay there for one trial month and then move in indefinitely if the other residents accept. Everyone has a veto when someone new moves in. First you move into a shared room with one single bed and a bunk bed for two, and as people move out you will get a more private room. A problem that has occurred is that people stay longer and longer in the house since it results in people needing to live for a long period of time in the shared room. The reason to move from the apartment is usually either that you move to another city, or that you want to settle down. One of the interviewees points out a feeling of living temporarily; “you develop mentally but you can’t develop your life”.

They have some rules set by the landlord that they think work well. At the biweekly house meetings, you can bring up whatever thought or issue you have. Everyone is very considerate, they have all chosen and been chosen to live in the apartment and it is important for all that it works.

The rent is similar for all rooms of the apartment which is something that one of the interviewees brings up as unfair since some of the rooms are so much larger than the others. Also, she thinks that it should be much cheaper if you share bedroom with others. The level of the rent is standard in Stockholm, low if you consider the location but high if you consider how many others you share with. The land lord gets a 30% surplus every month, money that is partly used to keep the apartment in good condition as well as outsourcing housekeeping.

The main reason why people live this way is the social exchange. They have all chosen to live with other young professionals to share thoughts and learn from each other. “It’s a platform for cool things, we can create a company over breakfast”, one of the interviewees says. They both like the interiors and feel relaxed in the apartment, they sometime go to the living room to read a book. The apartment has five floors so they say that there are some corners where not many pass where you can be alone if you want to work or have some silence. They also bring up the fact that everyone works a lot and are not home that much. Many of them have different schedules, there is never a line to the bathrooms in the morning since they all start at different times.

Both interviewees feel like they belong and are proud to live there, they want to expand the idea and have looked into creating new apartment like theirs. They say that the generation of their parents built very large houses but that Millennials do not want an enormous home, they want flexibility, and would rather share one of these apartments. However, the legal aspects are problematic since it is almost impossible to get a bank loan as a group of people.

4.2.3 Coliving in student dormitory

The interview was held while eating pizza in the living room of a student dormitory with five students living in different dormitories within the same building. The atmosphere was good, everyone listened to and respected the opinions and thoughts of the others. All five could see both good and bad things about their way of living, but all in all they were content. Only one of them moved there since he wanted to live in a coliving community, together with others. Two of the others had moved in only because they had nowhere else to live, and two because of the location and facilities.

Due to the lack of housing in Gothenburg, not everyone can choose where to live, hence some of the interviewees had moved in without really wanting to. They were sceptical to coliving and not being able to choose whom to share their kitchen with. Now however, after trying it, they were all positive to coliving. One of the interviewees says; "I only choose to live in a coliving house since there are not enough apartments to get one of your own. I thought, "Is this really how it's supposed to be...?" but since moving in I've been very pleasantly surprised, I could definitely choose it again!"

Not being able to choose whom to live with is discussed. Everyone agrees that it would have been fun to live with friends but also see it as an advantage to meet new people. No rules have been set by the landlord and there is no hierarchy in the dormitories. Most of the dormitories work well but they all say that it would be good with some common rules set by someone outside to avoid disputes on the level of cleanliness.

Everyone agrees that they would not have wanted to be a part of designing the house, they can come up with a few things they would want to change in the floor plan, but do not think that they would have done a better job themselves. "Leave that to those who work with it", one of the interviewees says and continues; "I wouldn't want to be responsible for the bad choices." However, they would have wanted to change the furniture which they think feels cheap and temporary. They feel like the company that owns the building listens to them, but sometimes it takes very long time before things they ask for happen.

All living in a student dormitory needs to study full time why everyone has the same income and living standards. Some of the interviewees work extra but spend the money throughout the month and none save any money. Even if everyone takes the same amount of credits every semester, the work load differs between the students. Furthermore, the hours spent on school varies both due to dissimilar need for reading and due to level of ambition. This is not really seen as an injustice and everyone sees each other as equals. However, in one of the dormitories, one of the students is much older than everyone else which creates an unevenness in power in the collective. Everyone pays the same rent for the same number of square meters but they all agree that some rooms are more desirable than others due to how they are situated related to the other rooms in the dormitory as well as to the surroundings. Some rooms have a more private entrance and are facing a quieter environment outside.

They all feel safe and secure in their dormitory, they have a first hand contract and know that they can live there for as long as they study. The somewhat temporary look on it is reasonable, since they will only study for a limited period of time. They feel like they belong, both in the neighbourhood, which is situated close to a university campus, and in the house, that is only for students. They have different views on if they want to invite people over. Everyone agrees that it is very practical for cooking food since they have such a large and modern kitchen, as well as for having parties and gatherings since

they also have common areas they can use downstairs. One of the interviewees says that he often has friends over to see a film or eat dinner since he has the largest apartment, another one says that she rather meets somewhere else since she wants more privacy and thinks it is cosier elsewhere.

Depending on how they have furnished the living room, they feel more or less comfortable and relaxed sitting there. If a door to a room of someone is very close, they feel like they are intruding their space by sitting right outside their door. They do not want to sit so that they can see into a private room if someone opens their door.

They see both good and bad things regarding living with new acquaintances. They think it would have been fun to live with friends, but it would also have made them stay at home more and not do things with their other friends. They wish that they would have clearer rules in the house and think that the landlord should have set rules regarding cleaning and after which hour it should be silent. Furthermore, they want to have a better way of communicating within the house, maybe a system for lending out things or to shout out that you are home and want to hang out. The ground floor is designed with places to sit down as an attempt to create natural encounters. Also, the laundry machines are placed here. When discussing this, they are not very positive. They say that the laundry room already is a place where you meet others wherever it is situated and they would never sit down in the lounge for 40 minutes waiting for their clothes. They point out that the lighting is too bright there and only if it would be possible to dim the lights, they would consider hanging out there.

5 Analysis and discussion

The empirical results will be used to understand in what ways coliving contributes to social sustainability. Furthermore, the view of coliving will be analysed and discussed. Also, recommendations of the author on how to develop coliving communities and on how to reach social sustainability will be presented.

It is needed to mention that the research was done primarily in Gothenburg, where it is very hard to find accommodation. This leads to a disparity between where people would have chosen to live, and where they actually live. It is hard to say how much this affects the outcome of the results, but it definitely affects the feeling of freedom and empowerment. The result is that some have to live in an area, or in a house where they would not have lived if they could have chosen freely.

5.1 Social sustainability in coliving communities

Extracting the key words from Section 2.1.2 gives the list presented in Table 6, where different kinds of coliving are related to aspects of social sustainability. All coliving houses are bundled together since the conditions in them are similar. A plus implies that the aspect is enhanced, a minus that it is reduced, and a 0 that it is both enhanced and reduced in different ways. An absence of sign means that the examined form of coliving do not affect the aspect.

Table 6 How coliving affects aspects of social sustainability.

	Coliving house	Coliving for entrepreneurs	Student dormitory
<i>Empowerment</i>	-1/4	-1/4	0/4
Gaining power	0		
Influence	0	-	-
Change their situation			
Freedom	-		+
<i>Equity</i>	1/4	1/4	2/4
Equality			+
Equity			
Need	+		
Affordability	0	+	+
<i>Social cohesion</i>	4/8	5/8	2/8
Inclusion	+	+	
Belonging		+	
Pride	0	+	0
Networks	+	+	+
Social interaction	+	+	+
Stability		-	-
Safety	+	+	+
Security	0		
<i>Total</i>	4/16	5/16	4/16

Coliving does not necessarily lead to gained power for the individual. In the coliving houses, you need to work together with many others and you have to adapt to what the majority thinks. However, united you become stronger and can decide how you want to live. The feeling of influence is both increased and decreased in the coliving houses, some feel like they are listened to, while others do not. In the coliving for entrepreneurs and student dormitory, the feeling of influence is weaker than in other kinds of housing tenures since they cannot easily do anything about their living situation. If they would want to change anything, it is possible that they would be told to move somewhere else. In the coliving houses, the freedom to live life exactly how as wanted is reduced since everyone needs to take the will of others into account. In a student dormitory it is enlarged since everyone can choose when they want to socialise and when not to. No one is depending on a single other person and everyone can easily move out whenever they want to. Looking at the summation in Table 6, coliving decreases empowerment. It can be hard for everyone to influence in a group of people that are not related to each other.

In all interviews, no one could imagine any other distributive rule than equity. It is hard to measure other values than the monetary and to make sure the distribution is just. In the student dormitory however, one can see equality since everyone has similar life situations. Everyone living there has the same income and the same prerequisites which makes them equal and gives no one the right to decide over another. In the coliving houses, one can see the use of the distributive rule of need in some situations. Everyone eats as much as they want and need at the dinner, and regarding the household work, it is divided so that residents with more time do more time consuming tasks, while those who work long hours can make up for their sparse time by doing planning ahead. Regarding affordability, living in a coliving house is not always economical compared to other housing tenures. It saves money to share dinner since you save both time and money, but if you build a new house, it can be quite expensive. Coliving in the same apartment saves money though. It is still quite costly, but at least less expensive than having an own apartment. If you count the large shared areas, it is affordable. According to Table 6, equity is not very enlarged in coliving communities. There need to be clear rules on how to share to avoid discontent and it is not very affordable to live in a coliving house.

It is when looking at social cohesion, that coliving communities stands out from other forms of housing. The feeling of inclusion is high in both coliving houses and the coliving for entrepreneurs. In the houses, everyone depends on each other and get to know each other since they share dinner. The entrepreneurs are all carefully chosen and they seem to feel like they belong in the apartment and also feel proud to live there. They see many benefits both with the cosy apartment and with their flatmates. The feeling of pride is dual in the other forms of coliving. In the coliving houses, they often feel like people outside have prejudices about their way of living, but at the same time most people have chosen to live like this because they see many benefits and are proud of that. In the student dormitory, some say that they love to invite their friends since they have such a large kitchen and living room, while others say that they prefer the privacy and cosiness of a smaller apartment and do not usually invite friends for dinner. In all forms of coliving, networks and social interactions are strong. They feel safe in the house and with their neighbours but in the coliving for entrepreneurs and student dormitory, they have a feeling that their home is only temporary; they will soon move somewhere else. The security can be lower in a coliving house since they are so many

sharing, but if they know their neighbours well, it is higher and everyone recognises a stranger. According to Table 6, coliving for entrepreneurs promotes social cohesion. It is however worth to point out that the cohesion is within the house, and not with the rest of their neighbourhood and community. What is special with this kind of coliving, is that they are only 13 persons sharing the apartment and that they all have been carefully chosen on the basis of shared interests and attitudes. They need to be committed since they start by sharing room with two others, but in return they get a cosy apartment at a central location in a city where it is very hard to find accommodation.

In total, it is impossible to say that coliving promotes all aspects of social sustainability. In Table 6, the different forms of coliving got 4-5 out of 16 points which implies that they all enhance social sustainability. It is important to keep in mind that all forms of living and all housing tenures, have different features and possibilities. People are unique and have different preferences, why different ways of living can fulfil different aspects for different people. There is not a single solution that fits everyone.

5.2 The view of coliving

When you say collective housing to a Swede, they often think about hippies and the flower-power movement. Sweden has the highest percentage of people living alone in the world (SCB, 2017) and flat sharing is an exception. There is an uncertainty in regard to what a coliving community is. Some people share things with their neighbours that they do not reflect upon. For example, one could say that a tenant-owned apartment is a part of a coliving community since they own and manage their property together, but this is something most people are not aware of.

The assumption was that the view of coliving would differ between people working in the housing sector and presumptive residents of coliving communities. However, the largest gap is found between *people who live in a coliving community* and *people who do not*. Those who do not have prejudices toward coliving and not until trying it, people seem to grasp what it is about.

It can be concluded is that people in general have many preconceptions and have insufficient knowledge about coliving. From the research, it looks like people in general accept rules that they are given and that they, regardless of how much they knew about coliving before moving in, settle in quite well. People highlight different aspects about coliving and depending on which life phase they are in, they have different abilities to contribute and to enjoy the benefits.

5.3 Developing coliving communities

Firstly, the reason for developing a coliving community should be defined. Depending on which values that should be fulfilled, different forms of coliving can be most suitable. In Figure 9, five different ways of coliving is presented. Either every resident has a fully equipped apartment of their own, or they share apartment. If every resident has a fully equipped apartment, there is a difference if they share dinner with their neighbours or if they only share space. If the coliving residents share apartment with others, these can be a group of friends, people that have something in common, or randomly picked people. There are more ways to create coliving communities, and

more aspects to take in regard, but these five are identified by the author as important divisions since they give different conditions.

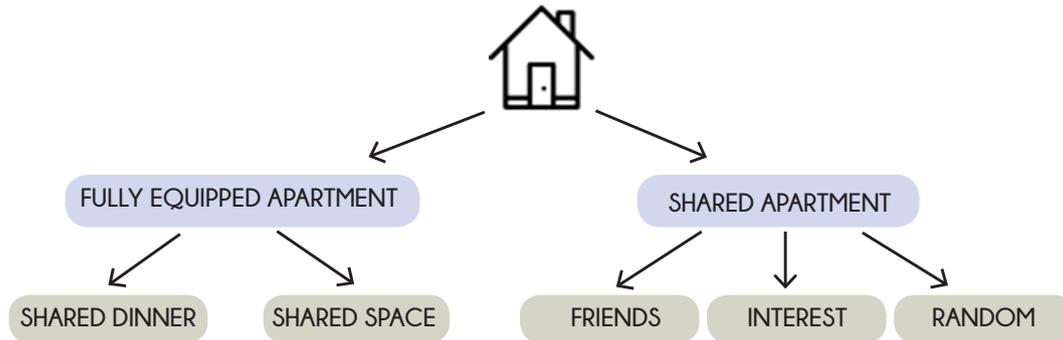


Figure 9 Different ways of coliving (made by the author).

The researched coliving houses have fully equipped apartments and four out of five also share meals, while coliving for seniors can be seen as fully equipped apartments with shared space. In these common areas they can choose to share dinner, but also do other activities. If the residents share apartment, there will be a difference in the dynamics depending on the group; if they are friends, share an interest, or if it is a random selection. The people living in the coliving for entrepreneurs had been carefully chosen by a common interest, while the students in the dormitory can be seen as more randomly picked, even if they do have many similarities in life situations. A list of features for each type of coliving is summarised in Table 7.

Table 7 Features of different types of coliving.

Coliving type	Features
<i>Fully equipped apartment</i>	A fully equipped apartment lets the residents socialise with their neighbours only when they chose to. They can furnish and decorate freely.
Shared dinner	Sharing dinner every week forces everyone to participate and get to know each other. This category can also be split into three subcategories based on if the residents are friends, share an interest, or are chosen randomly.
Shared space	If only sharing some spaces, it is important that everyone feel like the space belongs equally to all.
<i>Shared apartment</i>	You do not have to share economy to share an apartment. The number of people sharing affects the outcome; fewer persons entails fewer wills but also a greater responsibility to engage in the household.
Friends	The residents are friends, either from before moving in or become friends from sharing accommodation.
Interest	The residents are chosen, either by the landlord or by the other members of the household, based on an interest or life situation. This gives the residents something to engage around.
Random	The residents are randomly chosen or chosen to create diversity.

When it is decided what type of coliving that should be developed, rules need to be decided. In the student dormitory, they had no rules and called for someone else to guide them in making rules. It is time consuming to involve the future residents, and the research points towards that it is not crucial. To make everyone feel empowered and like they are free to make their own choices, one should avoid hierarchy. In one of the student dormitories, one person had made himself a ruler, which created unbalance. However, if the coliving is large, it might need a leader which should be democratically elected and exchanged often. In the coliving house in Malmö, they never changed groups, which was a large problem for the individuals in malfunctioning groups. Everyone should feel like they have the power to influence, changes should be encouraged and it should be easy to try new routines.

If dinner is shared, this should be something that everyone benefits from. In some of the coliving houses, the younger residents expressed that this was too time consuming and that they did not have time to eat every day of the week. It should be possible to compromise and find a solution where everyone feels content. There could be smaller teams since it is easier to cook for fewer.

When the coliving community is designed, it should be clear boundaries between what is common and what is private space. In the student dormitory, they felt at unease if they were sitting too close to the room of someone else, and in the coliving house in Malmö, their shared balconies became private when the furniture belonged to someone. This can be avoided with a clear room design and by furnishing common areas together. To make people stay longer, including them in making their home personal is crucial. People will then engage more and the social cohesion will become strong. In the research, it seems like people like to use the common areas when they are working from home or to play with their children. If the common kitchen is well functioning, like in the student dormitory, the residents will invite friends to cook dinner. This is uncommon if the kitchen looks too much like a commercial kitchen, like in the coliving houses. Also, only if they have no living room of their own, like in the coliving for entrepreneurs and student dormitory, the residents use the common living room. This leads to think that a shared room where you can engage in either work of your own, or in games or activities you do together will be appreciated. Furthermore, the common areas should be placed where people pass everyday, where it is easy to see if there is someone there, and it is a plus if people can go there very easily, without outdoor clothes, from their homes or rooms. In all researched residences, it was easier to create personal connections horizontally than vertically, which should be kept in mind when planning the number of floors. It might be a good idea to have common areas on every floor, or both on the ground floor and on the top floor, like the coliving houses in Gothenburg and Malmö. However, people only go to the top floor if they need to.

There should be a system for communication that is easy for everyone to use. There should also be a system for telling who is home at the moment, and if they want to meet up. Depending on the number of residents and the design of the house, the system could be designed in different ways. A digital forum where people can talk to each other, borrow things, and plan activities would help the residents share, which is a key to affordability and should be facilitated. Neighbours can share space to lower their rent, food to lower their daily costs, and tools, cars, skis etcetera to lower their costs in total. There are different distributive rules of sharing and there could be a discussion about other values than the monetary.

To ensure social cohesion, everyone must feel welcome and included. Networks where people can engage in a common interest should be encouraged, for example by

providing an inspiring room for this. This can also make people proud of their residence. Knowing your neighbours will enhance the feeling of safety and security; in all coliving communities most people stated that they felt safe. This can furthermore be improved by, for example, lighting and placing windows towards the street, which was put forward by one of the interviewed architects. In the interviews with the housing sector, some other design aspects were also mentioned. A welcoming entrance where it is possible to sit down for a while, as well as large staircases, encourage spontaneous meetings. A large storage for bicycles on ground level as well as somewhere to fix bikes. Also, a common garden with pallet collars for farming will make people meet and come together.

In the theoretical chapter, it was found that in Sweden, many live alone in their earlier and the later years of their adult lives why young adults and seniors could be interesting target groups for coliving.

5.4 Reaching social sustainability

A company can benefit from it since it will create goodwill from both employees and customers, and as a way of staying competitive. It can also be an important aspect for a landlord with leasehold estates since the tenants will probably stay longer and take better care of their home if they think it is sustainable.

However, the state and municipalities should take the utmost responsibility since Sweden has signed the Agenda 2030 and thereby promised to reach sustainability. This can be helped with grants and promoting sustainable choices. In the interviews, social housing was brought up as well as creating a diversity and organic societies through thinking in a small scale and making properties smaller.

5.4.1 Empowerment

First and foremost, there needs to be a good ruler that makes decisions based on what is best for the group. To change leader regularly is recommended since this brings in new perspectives and new voices. Everyone should be included through direct democracy or chosen representatives. People should feel like their fate lies in their own hands and that they are free to do what they want to in life.

In the housing sector, this can be achieved by making sure everyone knows how to affect things in their accommodation. The residents should know who to contact and know that they will be answered and listened to. To give everyone a feeling of freedom, the shortage of housing would need to decrease to give everyone the opportunity to move somewhere else if they are not happy with their situation or if their life situation changes, due to a separation for example, and they need to move. Short term accommodations could be a solution to help those in need to stay somewhere while finding a more permanent solution.

5.4.2 Equity

Equity does not always mean equality, but it is important to remember that we are all human beings born with the same value. We all have the right to have our basic needs satisfied for an affordable sum of money. There are different ways of sharing (see

Section 2.1.1), but to use the distributive rules of equality or need seems to be hard outside of a family, why the distributive rule of equity most often is used. Other values than monetary also should be investigated.

The housing sector could help by offering affordable housing. If large apartments were turned into coliving communities, this would lower the rent. Helping the residents to provide forums for communication would facilitate sharing and borrowing.

5.4.3 Social cohesion

Coliving communities can create social cohesion by forming networks not only within the house, but also in their neighbourhood. Different neighbourhoods in a city should be connected to create understanding and diminish segregation. One of the coliving houses to be built in Gothenburg plans to invite neighbours to eat dinner sometimes and arrange cultural activities open for everyone. The same house has some apartments for those who need extra help in their daily life. One of the interviewed architects pointed out that this is something you can do if you are many helping each other.

The housing sector can help create places where people can meet their neighbours. The ground floor of a building is often hard to use as an accommodation since people are walking very close to the windows. In many neighbourhoods it is difficult to get a business in the block but using these as places for social clubs would create life and movement in these areas. In Sweden, it is uncommon to speak to strangers and many stays at home during the darker and colder periods, these spaces could be a solution to this and a step towards enhanced social interaction. If many different clubs shared the spaces, everyone could find somewhere where they would be included and feel belonging. Those in the housing sector who manage housing should try to make sure that the residents have stability and know that they can live there for a long period of time. Furthermore, security and safety are important aspects which can be enhanced by educating residents in what to do in case of emergency or if they hear domestic violence.

6 Conclusion

This thesis explores the concepts of social sustainability and residential architecture, with a focus on coliving communities. It presents a literature study to define the concepts, as well as an empirical study with semi-structured qualitative interviews and participant observations to further develop the understanding of how companies work with social sustainability and how coliving residents experience their way of living.

This work presents a definition of social sustainability and uses it to examine how coliving communities contributes to different aspects. It identifies that only a few companies in the housing sector work systematically with these questions and that the knowledge gap is large, it also highlights some aspects found to be extra important for the housing sector to reach social sustainability. Furthermore, it can be concluded that the misconceptions towards coliving communities are many and that most people would benefit in some way from sharing with their neighbours. When developing housing in general and coliving communities specifically, it is important to look at the aspects of empowerment, equity, and social cohesion to reach social sustainability.

Future research could investigate more types of coliving communities, for example coliving for seniors and friends sharing an apartment. Important questions to be answered are how the number of coliving persons affects the different aspects, as well as how one should set up the rules for coliving communities and make sure that they are followed. Also, how to get people engaged in social activities and networks by studying neighbourhoods and communities where the social cohesion is strong.

Coliving communities does not automatically enhance all aspects of social sustainability, but it is definitely a powerful tool for the society to reach *liberté, égalité, fraternité*.

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Appendix A – Questionnaire Housing Sector

Introductory

1. Please introduce your company. What do you do? How many employees are currently working here?
2. What is your role within the company? What are your tasks, responsibilities and interaction with the other employees?

Social sustainability

3. Is there a discussion about social sustainability in the Swedish housing sector? What is the common approach towards this issue within the sector?
4. Do you have a clear view of what social sustainability is?
5. Does your organisation have any strategies to reach social sustainability? Have they defined social sustainability?
6. To what extent is your company highlighting questions about social sustainability and social responsibility?
7. Do you think that your company needs to work more actively with questions regarding social sustainability?

Coliving

8. Is there a discussion about coliving in the Swedish housing sector? What is the common approach towards this issue within the sector?
9. Do you have a clear view of what coliving is and what kind of coliving alternatives there are?
10. What is/would be the reason for your company for working with coliving?
11. Does people ask for it? What do your customers ask for?
12. Please describe your coliving project.
13. When designing a coliving community, what aspects do you think is the most important?
14. Who decides what to focus on?
15. Is there something you would do differently in the next project?
16. Would you consider coliving? Why / why not?

Probing / Finishing

17. Is there something you would like to add?

Appendix B – Questionnaire Coliving Residents

Empowerment

Influence (empowerment vs. democracy) / Flexibility

How are rules determined?

- By whom?

How much do you want to decide about your accommodation?

How important is interior design, floor plan, location, rent etc?

- Do you feel like you could have influenced more if you wanted to?

What details do you find important?

- Balcony
- Bath / spa
- Location
- Rent
- General standard / material
- Planning
- Kitchen / cooking
- Flexibility (change planning of the apt if necessary)
- Invite friends
- Food
- Film
- Other
- Common areas
 - Which do you appreciate most?
 - Which do you use the most?

Would you be able to change the planning of your apartment if you needed to?

- Able to rent out a room

Equity

Equality, equity, need, affordability

How do you look at money?

Value

Rent

Measuring values in terms other than monetary?

How can you imagine sharing?

- Different by income / life situation?
- For everyone
- Some pay more and get more

Equal rights to equal things

Social cohesion

Community / affiliation / relations / pride / well-being / safety

How close are you to the other residents of the house?

- How many? How come?

Do you ask each other for help within the house?

Have you helped your neighbours with anything? (Do you help your friends?)

Do you have a clear task in the house?

Do you interact with your neighbourhood? The rest of society?

Who wants to live in a coliving community?

How could you attract more people? (Diversity)

Do you feel proud of your accommodation?

Do you trust the others in the house?

Do you recognize the others in the house?

Do you have to pass common areas to get to their accommodation?

- Does that give a feeling of surveillance or of security?

Do you get the alone time that you need?

What do you think of the environments in the house? Cosy? What is good / bad?

Do you feel you can make it personal?