WHAT'S MINE IS OURS

Empowering cohousing communities towards self-organization through sharing economy

Master thesis — Nina van Wijk

COLOPHON

What's mine is ours: empowering cohousing communities towards self-organization through sharing economy.

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Front cover
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PREFACE

We have arrived at a moment in which rethinking the way we live, especially in cities, is necessary. This poses an interesting academic challenge, in which I hoped to use the tools that I developed in the past years to contribute to the way people live.

However, my research was not only driven by societal and scientific relevance. It had a more personal dimension, in the sense that I and people around me struggle with this exact problem. Where do you live when you (have to) leave your student housing? How do you create a place that feels like home and is affordable as well? Will big cities even be an option for us?

Many conversations at dinner parties or during coffee breaks revolve around this subject; the uncertainty of our next steps and how to create a home suitable to this. If finding an affordable home is difficult for us, young people with a higher level of education, how complicated will it be for households that do not hold the same level of privilege?

Challenging the status quo and approaching the problem from an academic perspective provided me with more insight on how to do it differently, but also with insight into the downsides of seemingly perfect solutions.

I not only learned a lot about my research topic, I also learned a lot about myself. Writing a thesis is by no means easy. You spend a lot more time on a topic than you are used to, and there are no clear rules as to what is expected from you. This is great, because you are in charge, but it can also be terrifying. My friends and family helped me at rough moments by providing me with a cup of tea and chocolate, or by taking the time to give feedback on the parts I could not quite figure out myself. And without those pieces of help, this thesis probably would not have been realized.

I would like to thank the various people that contributed to my research project. From the TU Delft, I would like to thank my mentors from both the Management in the Built Environment and Science Communication department: Darinka Czischke Ljubetic, Maarten van der Sanden, Aksel Ersoy, and Steven Flipse. You all helped me differently, both in approach and in profession and expertise. From Stad in de Maak, I would like to thank Piet Vollaard, who was my ambassador at the project and helped me get in touch with the right people. Furthermore, I would like to thank all other research participants. Your contribution was essential for finishing my thesis. Next to that, I would like to thank family and friends for their support and valuable input. Specifically, I would like to thank Henriëtte Teeuwen for reading almost every bit of my thesis (I think by now you know it better than I do), and Charlotte von Meijenfeldt for being the cheerleader of my topic and supporting me at my P4. And probably most important, I would like to thank my parents and sisters for cheering me up whenever I was down, and having faith in me when I needed it most.

I hope you enjoy reading my thesis!

Nina van Wijk, November 2019

THESIS INTEGRATION

MANAGEMENT IN THE BUILT ENVIRONMENT & SCIENCE COMMUNCATION

This thesis is the result of an integrated graduation project, connecting the theses for the MSc Management in the Built Environment (MBE) and MSc Science Communication (SC). It is necessary to clarify what this combination means and how the two were interwoven in this research.

SC is a master program at the TU Delft which focuses on the knowledge and skills to design and optimize strategic communication processes within and between organizations and society. This helps to contribute to the quality of new and emerging science and technology, by attuning innovations to societal demands. As the MBE program focuses on high-quality development through managing complex stakeholder development and construction processes, SC can be a great addition to research carried out in that area. In this graduation project, the MBE and SC theses have thus been connected to create one integrated thesis. The SC layer was placed on top of the MBE basis, but that did not mean that the communication aspect followed directly from the management aspect. This was a more iterative process in which I continually switched between the two fields. Management and communication processes are inherently tied together, therefore they proved to be a valuable addition to each other in the research process. My intention of this connection was to elevate the result and applicability of this thesis.

READING GUIDE

The thesis consists of six main parts: (I) Background, (II) Methods, (III) Results, (IV) Synthesis & Design, (V) Conclusions, and (VI) Resources.

Part I comprises of the introduction and problem statement in chapter 1, and the literature study in chapter 2. Part I concludes chapter 2 with a conceptual framework, which provides the basis for setting up the methods. These methods are elaborated on in chapter 3, which is the only chapter of part II. Part III focuses on the results of the interviews, which are described in chapter 4. Part IV comprises of chapters 5, 6 and 7. Chapter 5 consists of the synthesis of the interview results. The outcomes of the creative session are described in chapter 6, and the design and test of the communication tool are elaborated on in chapter 7. Part V rounds off the research by providing the discussion, conclusion – by answering both the sub-questions and the main research question – and recommendations in chapter 8, and a critical reflection on the thesis project in chapter 9. Part VI provides the resources by means of the list of references and appendices.

ABSTRACT

Our housing market is challenged. Housing prices are rising, and the number of single-person households is increasing, which impacts the affordability of housing.
Cohousing offers a possible solution to this problem. However, the level of empowerment of cohousing communities to self-organize is troubled by financial or legal barriers, among other things. Self-organization is defined as: *initiatives that emerge spontaneously in civil society from autonomous community-based networks of citizens, who are part of the urban system but independent of government procedures, and that are created around a common intrinsic motivation.*
The concept of sharing economy might provide a solution for the current barriers to cohousing development. Sharing economy is defined as: *collaborative consumption of under-utilized goods, enabled through access rather than ownership, often through the use of community-based online services.* This research connects sharing economy to cohousing by looking at empowerment of self-organization of cohousing initiatives. Sharing economy and self-organization of cohousing communities are connected because both are community-based initiatives, which are built upon a common motivation, and both are not facilitated by political power. The following research question was answered by studying a cohousing initiative: *How can the concept of sharing economy support empowerment of cohousing communities towards self-organization to create affordable homes?* This study researches empowerment by researching the community's social capital, research shows that social capital contributes to community empowerment.
Research findings show that the studied cohousing project can be viewed as a sharing economy. This leads to both advantages and disadvantages for the community. Moreover, the project struggles with its self-organization and is largely dependent on the housing corporation. Lastly, the cohousing project possesses social capital, but some elements can be improved.
Moreover, the research found that the sharing economy within the cohousing initiative can support some conditions for self-organization, as well as bonding social capital. However, the aforementioned disadvantages of the case study's sharing economy may limit the benefits. To reduce the disadvantages of sharing economy, this study proposes a communication tool as a possible solution for improving communication in the studied cohousing project. The tool, called '(im)Perfection Puzzle', uses geometric shapes to help residents explain their thoughts and ideas regarding a specific problem and as a result work towards the acceptance of the differences in everyone's ideas. A test of the tool illustrated that the tool has potential, but future research is recommended as long term effects remain unclear. Also, research with other cohousing projects is recommended for validating the connection between sharing economy and self-organization, and sharing economy and social capital.

KEY WORDS COHOUSING, COLLABORATIVE HOUSING, SHARING ECONOMY, SELF-ORGANIZATION, SOCIAL CAPITAL, EMPOWERMENT, COMMUNICATION DESIGN

SUMMARY

PROBLEM STATEMENT

The way we live is facing major changes. In the coming decades, there will be an increasing number of single-person households, especially in cities. This development puts even more pressure on an already challenged housing market. Housing prices are rising and the environmental sustainability of housing is under pressure.

Collaborative housing and cohousing offer a possible solution to these problems, as these types of housing often are driven by environmental, economic and social sustainability. This research focuses on cohousing as a form of collaborative housing, which is defined as: *housing that has autonomous units, common space(s) and shared facilities, which is intended for single-person households, and developed on the basis of self-organization.* However, financial and legal barriers, among other things, impact the level of empowerment of cohousing communities to self-organize, which hampers cohousing development.

The concept of sharing economy might provide a solution. Sharing economy is defined as: *collaborative consumption of under-utilized goods, enabled through access rather than ownership, often through use of community-based online services.* Sharing economy has been gaining attention, and has become more ubiquitous thanks to modern communication technologies. Similar to collaborative housing and cohousing, sharing economy focuses on economic, social and environmental benefits. Anecdotal evidence points towards a positive impact on the decrease of consumption and pollution, and on the increase of economic coordination within communities. Within the real estate market, sharing economy is mainly connected to the hospitality sector, and to shared workspaces/co-working, and not to cohousing. However, both concepts focus on environmental, economic and social benefits, which indicates they might be connected.

In this research, sharing economy is thus connected to cohousing as a form of collaborative housing. The focus is how sharing economy can empower cohousing communities to self-organize. Self-organization is defined as: *initiatives that emerge spontaneously in civil society from autonomous community-based networks of citizens, who are part of the urban system but independent of government procedures, and that are created around a common intrinsic motivation.*

Empowerment is studied by studying social capital - in the form of bonding, bridging and linking. Bonding capital refers to social capital within a local community of individuals, for example among residents. Bridging capital refers to social capital beyond the boundaries of the community, for example with neighbors. Linking capital refers to social capital between a community and higher levels of power, for example between a cohousing project and a housing corporation.

This research intends to fill the following research gap: the interrelations between collaborative housing, sharing economy, self-organization, and empowerment and social capital. This research aims to empower cohousing communities to self-organize by supporting their social capital, to create affordable homes.

RESEARCH QUESTIONS

The following main question is answered in this research:
How can the concept of sharing economy support empowerment of cohousing communities towards self-organization to create affordable homes?

Seven sub-questions support answering this question:

1. To what extent are collaborative consumption of under-utilized goods, access rather than ownership and use of community-based online services present in current cohousing initiatives?
2. What are the advantages and disadvantages of the sharing economy in cohousing initiatives in practice?
3. Which barriers to and enablers of self-organization of cohousing initiatives can be found in practice?
4. Which conditions for self-organization are influenced by the found barriers and enablers?
5. How can the sharing economy of the cohousing initiative support the initiative's conditions for self-organization?
6. To what extent does the existing cohousing community possess bonding, bridging and linking social capital?
7. How can the sharing economy of the cohousing initiative support its bonding, bridging and linking social capital?

METHODOLOGY

This research uses a qualitative design-based research with a single case study. A single case study provides the opportunity to take an in-depth look at the connections between sharing economy, self-organization and social capital. Stad in de Maak, a cohousing project in Rotterdam with several buildings and ties to housing corporation Havensteder, was selected as the case study. The research design consists of 3 phases: preparation, empirical research and synthesis & design (figure S.1). The preparation phase consists of developing the

problem statement and executing a literature study. The methodology followed from these steps.

In the empirical phase, six interviews with residents and co-founders of Stad in de Maak and with employees of housing corporation Havensteder were carried out to study the connection of Stad in de Maak with sharing economy, the current level of self-organization of Stad in de Maak, and the bonding, bridging and linking social capital of the community.

In the synthesis & design phase, the results are brought together to establish the connection between sharing economy and both the level of self-organization and social capital of Stad in de Maak. These findings are used as starting point for the design of a communication tool. This tool is a practical application of the research findings. A creative session with residents and co-founders of Stad in de Maak is used to gather input for the tool. This input and the interview findings are translated into a communication tool, which is tested at Stad in de Maak.
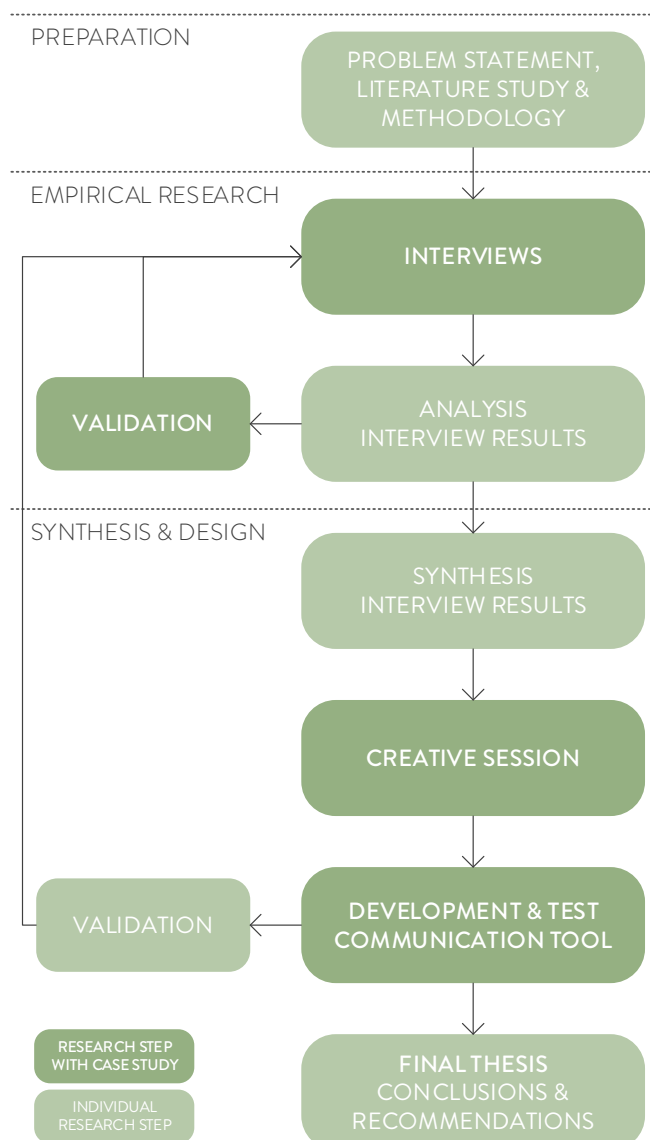

PREPARATION

PROBLEM STATEMENT, LITERATURE STUDY & METHODOLOGY

EMPIRICAL RESEARCH

INTERVIEWS

VALIDATION

ANALYSIS INTERVIEW RESULTS

SYNTHESIS & DESIGN

SYNTHESIS INTERVIEW RESULTS

CREATIVE SESSION

VALIDATION

DEVELOPMENT & TEST COMMUNICATION TOOL

RESEARCH STEP WITH CASE STUDY

INDIVIDUAL RESEARCH STEP

FINAL THESIS CONCLUSIONS & RECOMMENDATIONS

Figure S.1. Research design. (own ill.)

EMPIRICAL RESEARCH: INTERVIEW FINDINGS
Sharing economy
To a certain level Stad in de Maak can be described as a sharing economy. However, online communication tools are not used, and the use of the idle spaces (i.e. the commons) at Stad in de Maak is not optimized. Advantages and disadvantages of the sharing economy were found, of which some showed ambiguity. This means these aspects could be both positive and negative.

Self-organization
Barriers to Stad in de Maak's self-organization were studied, as well as which six conditions to self-organization are hampered by these barriers. These conditions are:

1. *(a common) Intrinsic motivation*: a group centers itself around one idea, initiative, ideal or interest.
2. *Mutual trust (within and beyond the organization)*: those involved trust each other, and trust external parties.
3. *Simple rules for collective use and decision-making*: there are rules for collective use of resources and collective decision-making.
4. *Definition of boundaries of the initiative*: those involved understand the mission of the organization.
5. *Room for initiatives*: there is space for executing initiatives.
6. *Financial feasibility*: a financially feasible business case.

Seven barriers were found: differing motivations, complex communication, the dependence from the institutional environment, setting up rules for sharing, the lack of rules/regulations for decision-making, finances, and the image of Stad in de Maak. '(a common) intrinsic motivation' and 'mutual trust within and beyond the organization' were the ones most affected by the barriers. 'Room for initiatives' was also hampered. In figure S.2, the relationships between the barriers and the conditions for self-organization have been visualized. The seven boxes represent the barriers, and the colored circles below the boxes represent which condition is connected to what barrier.

Social capital
The bonding, bridging, and linking social capital of Stad in de Maak's residents and co-founders was also studied. Bonding capital is present, but the level of trust and association among residents could be improved. Also, there is a separation and possible hierarchy between residents and co-founders. The co-founders possess more bridging and linking social capital than the residents. For bridging capital, both the relationship with neighbors and with other collaborative housing communities could improve. For linking capital, the ties to Havensteder could be improved. Also, the relationship with the municipality could be strengthened, and relationships with other housing corporations could be built.
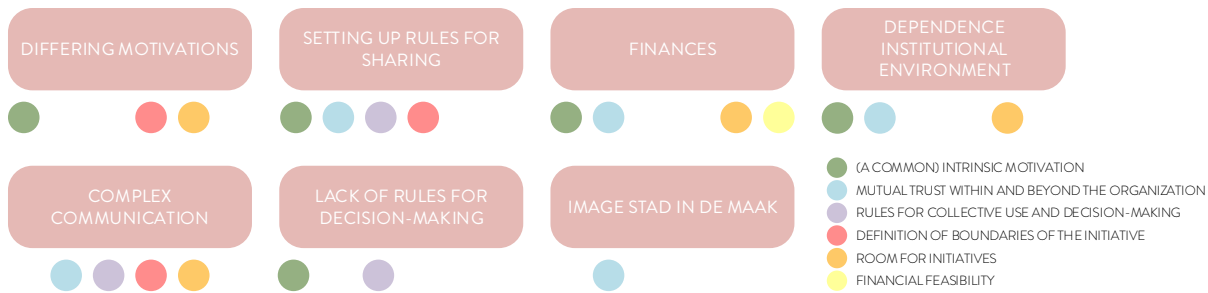
Figure S.2. Barriers and conditions for self-organization. (own ill.)

SYNTHESIS & DESIGN

The characteristics, advantages and disadvantages of Stad in de Maak's sharing economy were connected to the conditions for Stad in de Maak's self-organization (figure S.3). The results show a connection between Stad in de Maak's sharing economy characteristics and advantages, and its self-organization. Stad in de Maak's sharing economy supports building a strong community, which can benefit the conditions '(a common) intrinsic motivation', 'mutual trust within and beyond the organization' and 'room for initiatives'. Using idle assets could save money, which can contribute to the conditions 'room for initiatives' and 'financial feasibility'. However, the sharing economy also has three disadvantages, which complicate the relationship with self-organization.

Next, the characteristics, advantages and disadvantages of Stad in de Maak's sharing economy were connected to Stad in de Maak's bonding, bridging and linking capital (figure S.4). It was found that Stad in de Maak's sharing economy can be connected to bonding social capital. The connection between sharing economy and bridging and linking capital was quite weak. In order to build bonding capital, the disadvantages of Stad in de Maak's sharing economy, especially 'intense relationships' and 'complex communication', need to be reduced.

Thus, the results for Stad in de Maak's sharing economy, its conditions for self-organization and social capital show that the disadvantages 'intense relationships' and 'complex communication' need to be reduced for a positive effect. These findings provided the starting point for the development of the communication tool, which focuses on reducing the disadvantages of Stad in de Maak's sharing economy. As a result, Stad in de Maak's sharing economy will improve, which can lead to improved conditions for self-organization and increased bonding social capital. The tool, called '(im)Perfection Puzzle', uses geometric shapes to help residents explain their thoughts and ideas regarding a specific problem and as a result work towards the acceptance of the differences in everyone's ideas. This difference in opinion was present in the ambiguity of interview responses. A preliminary test of the tool showed that a simple tool like this might be useful for improving communication. Residents confirmed that communication indeed is a problem within Stad in de Maak's sharing economy. Additionally, the test confirmed that the tool can support the building of bonding capital. However, not all design requirements were met. Especially the acceptance of imperfection could not be confirmed nor denied based on the test. Improvements of the tool have been made, but were not tested.
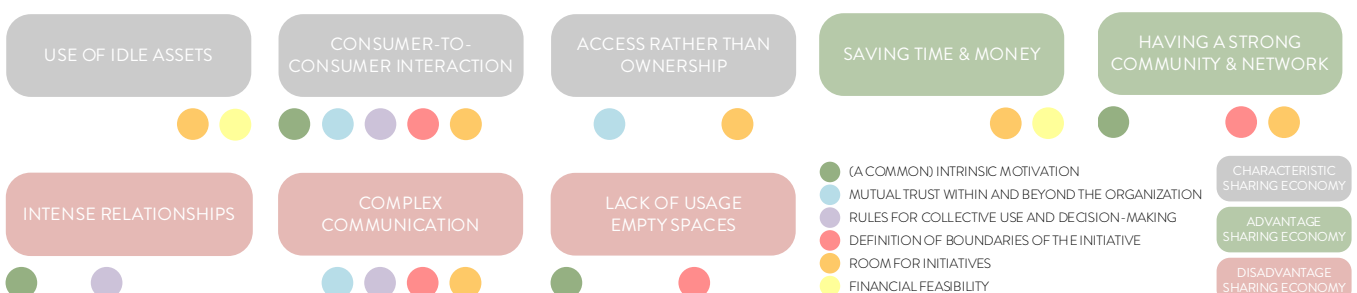

Figure S.3. Sharing economy characteristics, advantages and disadvantages and self-organization. (own ill.)
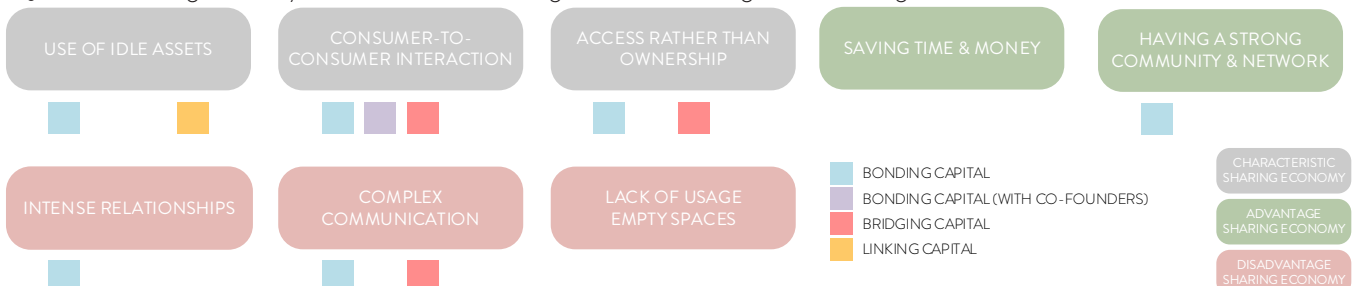

Figure S.4. Sharing economy characteristics, advantages and disadvantages and social capital. (own ill.)

DISCUSSION

Nine remarks can be made for the discussion.

Firstly, this research used a single case study, and within that case study quite a small sample, as a result of research fatigue. This means it is questionable whether the findings can be generalized to a larger setting, and whether the results are completely representative for Stad in de Maak. Secondly, the goal was to study cohousing which houses single-person households. However, some of the participants of this research lived with roommates, meaning that they shared all facilities of the home apart from their bedroom. Thirdly, the results of the research showed a lot of ambiguity, which is interesting, but complicates drawing clear conclusions. Fourthly, a larger communication tool test could have led to more reliable results, and co-design could have been implemented more to increase resident empowerment and to improve tool design. Fifth, the direct and indirect effects of the communication tool are hard to study. Especially long term effects of the tool on Stad in de Maak's sharing economy and level of community empowerment could not be studied. Sixth, cohousing might not be a solution which suits the entire group of citizens struggling with access to affordable housing. Seventh, the results raised questions about whether cohousing is the right solution for problems regarding affordability. Internal problems of cohousing projects need to be solved before it can be optimized as a solution. Eighth, the use of the concept 'sharing economy' can be questioned, as this term is surrounded by a controversy and currently framed mainly from the economic dimension. Whether cohousing initiative want to be associated with a concept like that is questionable. Lastly, the academic contribution of this research is limited, as the small sample complicates creating a generalizable outcome. Still, the research adds new knowledge by filling the stated research gap: the connection of sharing economy, cohousing, self-organization, and to a lesser extent empowerment through social capital. Moreover, it connects two research fields, namely Management in the Built Environment and Science Communication. The practical contribution is more evident because of the communication tool that was developed.

CONCLUSION

The aim of this research was to empower cohousing communities to self-organize by supporting their social capital, to create affordable homes.

The research findings show a relationship between sharing economy and both self-organization and bonding social capital. Furthermore, affordability is pointed towards in the interview findings. However, the disadvantages of Stad in de Maak's sharing economy need to be reduced in order to create maximum positive impact for self-organization, bonding social capital, and affordability. The communication tool focuses on reducing these disadvantages, and brings together the components of the research aim in a practical solution. However, it must be said that the housing market is complex and large forces such as governmental institutions and businesses majorly influence the development of housing. This research gives some power back to the people in the hope of pushing back to these larger forces. In sum, this thesis provides one piece of the complicated puzzle which must be solved to create more affordable housing in the Netherlands.

RECOMMENDATIONS

Recommendations are made for both the applicability in the real life context (i.e. the Stad in de Maak community) and for future research.

For the former, three recommendations are made. Firstly, Stad in de Maak can use the results of this research, specifically how their sharing economy supports their self-organization and social capital, to improve their project. The tool '(im)Perfect Puzzle' can facilitate the improvement of communication aspects. Secondly, Stad in de Maak can work on improving their social capital with the findings presented. Last, the findings of this research were translated into a small brochure which people involved in Stad in de Maak can use as a source of information (Appendix E1).

Regarding future research, four recommendations can be made. First, the research can be repeated with other cohousing initiatives to increase the validity and generalizability of the results. Second, the communication tool can be tested with other cohousing projects. Third, the long term effects of using the communication tool could be tested, to see if the tool indeed supports Stad in de Maak's sharing economy, community empowerment, and affordability. Last, future research can focus on how alternative research methods, such as a creative session or communication tool design, can be used for collaborative housing research.

TABLE OF CONTENTS

1 INTRODUCTION

'Sharing and collaboration are happening in ways and at a scale never before possible, creating a culture and economy of what's mine is yours.'
(Botsman & Rogers, 2011)

The way we live is facing major changes. In the coming decades, there will be an increasing number of single-person households. Today, these make up 37% of all households and this will rise to 42% by 2040 (Planbureau voor de Leefomgeving, 2015). Especially in larger cities, the number of single-person households is increasing and will continue do so at a growing rate. This development puts even more pressure on an already heated housing market. This is illustrated by the decreasing affordability of housing in cities. Municipalities are working towards increasing affordability, but more action might be necessary.

This thesis research, focusing on the subject 'Sharing economy and empowerment of collaborative housing communities to self-organize', turns toward that action. In this introduction, the problem statement, which provides the starting point for the research, is elaborated on in section 1.1. At the end of this section, the main research question is introduced. Section 1.2 elaborates on the societal and scientific relevance of the research, from both MBE and SC perspective.

1.1 PROBLEM STATEMENT

The subject of this research is: 'Sharing economy and empowerment of collaborative housing communities to self-organize'. The decision to choose this subject is based on two current problems: challenges for the housing market (i.e. rising housing prices and the need for environmental sustainability) and the increase in single-person households. Furthermore, the subject incorporates the increased attention for the concept of collaborative housing and the rise of the sharing economy as an economic model. This section elaborates on these current challenges and trends.

1.1.1 HOUSING CHALLENGES

Recently, housing affordability and housing prices, especially in the large cities, have been featured in news articles. Housing prices in Amsterdam showed a 21% increase over the course of a year and the city has been described as 'unaffordable' (Couzy & Damen, 2017; Gualthérie Van Weezel, 2018). In Rotterdam, a 14,4% increase in housing prices was noted (Taha, 2018). Both for rentals and owned homes prices went up, and housing corporations call for action to build more social housing (De Kruif, 2019). In the Netherlands, the average WOZ-value of homes increased with 6,5% in 2018 (CBS, 2018c). In July 2018, the rental price of homes was on average 2,3% higher than the year before. In the four large cities of the Netherlands (the G4), Amsterdam, The Hague, Utrecht, and Rotterdam, this increase in rental prices was higher. The price went up 3,3% in Amsterdam, 2,8% in The Hague and Utrecht and 2,7% in Rotterdam (CBS, 2018a). In sum, the housing market is heated.

Policy documents such as the 'Woonagenda 2025' (Gemeente Amsterdam, 2017) or the 'Woonvisie Rotterdam 2030' (Gemeente Rotterdam, 2016) intend to respond to these developments through several initiatives, such as building (affordable) housing and setting guidelines for the (yearly inflation of the) prices of these homes. However, more action is needed, as the housing supply still does not meet the demand, especially in the G4 (RIGO, 2018).

Not only the affordability of our housing is under pressure, ensuring the environmental sustainability of our built environment is a major challenge as well. The construction sector in the Netherlands accounts for 30% of the total water consumption, 35% of CO_2 emissions, 40% of produced waste and 50% of raw materials used (The Ministry of Infrastructure & the Environment and the Ministry of Economic Affairs, 2016). Furthermore,

40% of final energy use in Europe is used in the built environment, of which 75% is used by residential buildings (Visscher et al., 2016). The energy is used, dependent on building type and installations, for heating, hot water, ventilation, lighting and electrical appliances (Brom, Meijer & Visscher, 2018). Looking at the Paris Agreement, which among other things aims to reduce emissions, the building sector and thus also the housing sector can have a major impact on the level of sustainability by taking action (European Commission, 2015).

1.1.2 INCREASE IN SINGLE-PERSON HOUSEHOLDS

The total number of households is increasing in almost all municipalities in the Netherlands. In the coming decades, there will be an increasing number of single-person households as well (Planbureau voor de Leefomgeving, 2015). In 2016 there were around 2,9 million single persons households, making up approximately 37% of all households. In 2060, there will be close to 3,7 million single-person households, which will be 42% of all households (CBS, 2018b). Especially in the G4, the number of single-person households will rise, with a percentage of 45% of all households in 2040 (Planbureau voor de Leefomgeving, 2015).

The single-person households can be divided into four categories: widowed, separated/divorced, empty nests (single parents whose children moved out) and new households (e.g. children who moved out of their parents' home). In 2016, the widowed average age was 74, and there were 47.000 households. The average age of separated/divorced single-person household is 35 and in 2016 there were 144.000 households. The average age of empty nesters is 56, and in 2016 there were 31.000 households. The youngest and largest category is new single-person households, with an average age of 24 and 147.000 households in 2016 (RIGO, 2018). In this category, there was the largest demand of apartments in the G4 between 2012 and 2017 (RIGO, 2018). Separated/divorced single-person households also have a large demand in the G4, but they tend to stay single for a shorter period of time. Within five years, many of these households have merged with another single-person household, and subsequently, they often leave the city to live in a single-family home (RIGO, 2018).

Challenges following from the increase of single-person households
The increase in single-person households results in several challenges. First of all, the decreased affordability

of housing in cities combined with the sole responsibility of paying the rent is problematic. On top of that, housing is generally designed for the typical family and might not match the wishes of a single resident (Fromm, 2012). Furthermore, from an environmental perspective, an increase in single-person households means an increase in building materials and appliances that have to be produced for the housing development. Also, heating and appliances use energy for the benefit of one person, making it less energy efficient. Finally, living alone might increase social isolation and loneliness, especially at a later age (Banks *et al.*, 2009; Swader, 2018).

1.1.3 INCREASED ATTENTION FOR COLLABORATIVE HOUSING

In short, affordability and sustainability of the housing stock and the increasing number of singles are major challenges for the building sector. Housing trends are already responding to these challenges and an increased focus on the concept of collaborative housing or co-housing, dependent on the definition, is described as one of these trends (Czischke, 2018; Lang *et al.*, 2018; Leclaire, 2018; SPACE10 & Urgent.Agency, 2018). Collaborative housing encompasses a wide variety of housing forms, such as cohousing, residents' co-operatives, self-help, and self-build initiatives, experimental work-life communities, ecological housing communities, some types of Community Land Trusts (CLTs), and so on (Lang *et al.*, 2018). Research discusses positive effects of collaborative housing, such as sustainability, affordability, creating commons, social inclusion, social innovation and architectural design (Lang *et al.*, 2018). Bresson & Denèfle (2015) state three core principles behind collaborative housing: sharing and pooling of resources, environmental awareness, and citizen participation. Sharing resources can reduce household consumption and furthermore it can help to build social relations (Vestbro, 2010b).

In the Netherlands, some housing projects already focus on these components, but the numbers are still relatively small (Tummers, 2017). Foundation Stad in de Maak in Rotterdam is an example of such a housing project. In this project, derelict and/or dilapidated buildings in Rotterdam which are in the portfolio of housing corporation Havensteder are temporarily managed by the foundation (stichting) Stad in de Maak. Whilst in temporary care, the buildings are renovated to increase livability. During and after renovation, they are used for living and working. At the end of the temporary agreement with Stad in de Maak, the buildings will be managed by Havensteder again. The project is mostly self-organized by the founders of Stad in de Maak and its residents. The residents share common spaces, but also have their own living quarters. The

project is driven by environmental, economic and social sustainability (Stad in de Maak, 2016).

Another example is 'Centraal Wonen Delft', a housing project that exists of 13 housing communities in Delft. This housing project is part of the larger 'Centraal Wonen' organization, which comprises of 75 housing projects across the Netherlands. 'Centraal Wonen' came into being as families wished to break free of isolated living. Today, the focus is more on individuals who enjoy social activities and having a community. The residents have their own bedroom and sometimes also living room, and sharing facilities such as a kitchen, washing room, garden, and hobby room (CW Delft, n.d.).

1.1.4 BARRIERS TO COLLABORATIVE HOUSING DEVELOPMENT

More examples can be noted, organized either bottom-up or top-down. However, their development is often obstructed, as there are several barriers to the development of collaborative housing projects (Tummers, 2017, p. 29). Barriers can be found in all phases of the lifecycle of a building: the pre-construction phase, during construction and during operation. In the first phase, the modus operandi of investors and developers does not match with how community-owned housing projects are developed. Investors and developers tend to minimize risk, and their business models, investment structures and planning processes are not in line with the models, structures, and processes of collaborative housing (Jarvis, 2015; Tummers, 2016). As the housing market is already heated, there is no financial incentive to explore new modes of development. Furthermore, (local) planning regulations from governmental organizations might not fit collaborative housing projects. Looking from the community perspective, there is little empowerment for people to take initiative, which hampers self-organization (Fromm, 2012). This might be the result of lacking social capital. Current literature connects empowerment to self-organization in a variety of ways, which are elaborated on in detail in section 2.4. Social capital – in the form of bonding, bridging and linking social capital – is found to be important for empowerment (Bakker *et al.*, 2019). Social capital refers to the norms and network that facilitate collective action (Woolcock, 2001). Several sources indicate that increasing and mobilizing social capital can support community empowerment (Larsen *et al.*, 2002; Hawkins & Maurer, 2010; Muir, 2011).

Moreover, high financial risk may work as a barrier, which results in residents leaving development risks to developers and investors. Access to land is also noted as a barrier for community initiatives (Jarvis, 2015). In the design and construction phase, there is a mismatch

between the "traditional" family set-up and following architectural design, and the needs of a collaborative housing community, such as for example a strong focus in the design on community interaction. The planning and construction industry can be quite conservative and new options of designing and building housing have not been explored fully (Fromm, 2012; Urban, 2018).

In the operation phase, the main barrier is the question of facility management. Responsibility for maintenance and operation of the building is organized differently than in standard housing projects (Tummers, 2017, p. 220). In sum, there are still many barriers towards the development of collaborative housing that should be addressed.

1.1.5 RISE OF THE SHARING ECONOMY

As the increased interest in collaborative housing initiatives grows, the sharing economy is also on the rise (Hamari, Sjöklint & Ukkonen, 2016). The sharing economy is about peer-to-peer activity in which (access to) goods and services are shared, often through the use of community-based online services (Hamari, Sjöklint & Ukkonen, 2016). The sharing economy is a concept which has been gaining more and more attention and has become more ubiquitous thanks to modern communication technologies. Anecdotal evidence points towards a positive impact on the decrease of consumption and pollution, and on the increase of economic coordination within communities (Hamari, Sjöklint & Ukkonen, 2016; Frenken & Schor, 2017). Heinrichs (2013) describes the increasing value of the shared goods as a common premise of the sharing economy. It can improve social cohesion, minimize resource use and empower individuals (Heinrichs, 2013). Within the real estate market, the sharing economy is mainly used in the hospitality sector, of which Airbnb is an example, and in shared workspaces/ co-working (Baum, 2017). The sharing economy is elaborated on further in section 2.2.

1.1.6 CONCLUSION: CONNECT SHARING ECONOMY TO COLLABORATIVE HOUSING

To conclude, there are several challenges that need to be addressed. The housing market in the Netherlands is heated, resulting in decreased affordability, and increasing the environmental sustainability of housing is necessary. Next to that, the number of single-person households is increasing, which is problematic combined with the decreased affordability of housing. Furthermore, it affects the environmental sustainability of housing.

Simultaneously, there is an increased interest in both sharing economy and collaborative housing. Both have a focus on economic, social and environmental benefits and thus might help tackle the challenges mentioned. However, collaborative housing communities themselves also face challenges, of which their level of empowerment to self-organize is one of them.

In this research, the concept of sharing economy is thus connected to collaborative housing, focusing specifically on how the sharing economy can positively affect the self-organization of collaborative housing communities through increasing their level of empowerment by looking at their social capital. Currently, there is a research gap regarding these interrelations. The research gap will be explained in detail at the end of the literature study (section 2.5) to clarify what the added value of this research is. The research aim is to empower collaborative housing communities to self-organize by supporting their social capital, to create affordable homes. The focus will be specifically on affordability and not on environmental sustainability for two reasons. First of all, the scope of the research should be strictly defined. Environmental sustainability and affordability are both broad topics, which is why – within the possibilities of this thesis research – it is preferred to focus on one topic. Secondly, affordability fits better as focal point looking at the target group of this research. The thesis looks at collaborative housing from the resident perspective, specifically how it might benefit single-person households. As stated by Tummers (2017, p. 35), affordability and an inaccessible housing market is often the starting point for resident-led housing initiatives. This means that a focus on affordability might be more relevant from a societal and scientific perspective.

1.1.7 MAIN RESEARCH QUESTION

This research answers the following main research question, integrating both MBE and SC research:

How can the concept of sharing economy support empowerment of cohousing communities towards self-organization to create affordable homes?

This question will be answered through answering the following seven sub-questions:

1. *To what extent are collaborative consumption of under-utilized goods, access rather than ownership and use of community-based online services present in current cohousing initiatives?*
2. *What are the advantages and disadvantages of the sharing economy in cohousing initiatives in practice?*
3. *Which barriers to and enablers of self-organization of cohousing initiatives can be found in practice?*
4. *Which conditions for self-organization are influenced by the found barriers and enablers?*
5. *How can the sharing economy of the cohousing initiative support the initiative's conditions for self-organization?*
6. *To what extent does the existing cohousing community possess bonding, bridging and linking social capital?*
7. *How can the sharing economy of the cohousing initiative support its bonding, bridging and linking social capital?*

1.2 RELEVANCE

1.2.1 SOCIETAL RELEVANCE

Earlier, it was shown that the affordability of housing in the Netherlands is decreasing, especially in cities. Also, the number of single-person households is increasing which can negatively affect affordability and environmental sustainability (Fromm, 2012; Banks et al., 2009).

In this research, the conditions for self-organization of cohousing are addressed by applying the concept of sharing economy. Barriers to self-organization and their influence on the conditions needed for self-organization are studied. This is valuable for the cohousing community, as it gives them more insight in the process of cohousing development. Connecting the concept of sharing economy to self-organization of cohousing development, might make it possible to support hampered conditions for self-organization. Also, this step is valuable for the cohousing community, as it might help them in the process of their cohousing development.

Furthermore, the social capital of the cohousing community in the case study and how sharing economy can support social capital is studied. This can give the cohousing community insight in how social relationships shape their organization. Also, community empowerment is supported by social capital, so a trickle-down effect could be that this research contributes to community empowerment to self-organize.

In the research a case study is carried out: a current cohousing community was studied to understand their current barriers and challenges. The findings are translated into a small brochure for the case study (Appendix E1). Furthermore, a specific tool for cohousing development was developed with the research input. This tool can help the studied community, as it allows them to improve their sharing economy, resulting in possible improvements for both their conditions for self-organization and social capital. On top of that, the research findings can be used by the larger cohousing community and by groups of people that want to develop cohousing. They can learn lessons from this case study, and use the brochure and communication tool to support their self-organization.

Thus, the research is societally relevant as it potentially supports the empowerment of cohousing communities to self-organize, which can lead to increased affordability of their homes. Also, indirectly self-organization and living in cohousing might increase social cohesion and positively affect environmental sustainability of living. On a broader scale, connecting sharing economy to cohousing can help to challenge conventional housing practices by increasing the attention for other types of housing.

1.2.2 SCIENTIFIC RELEVANCE – MBE

Sharing economy is often connected to real estate by looking at hospitality (e.g. Airbnb) or shared workspaces and co-working. The connection between sharing economy and collaborative housing has not yet been researched extensively. However, the drivers of sharing economy and collaborative housing are similar both focus on economic, environmental and social sustainability – which indicates that the two can be linked. Also, connecting sharing economy to collaborative housing can show that the concept of sharing economy does not only have negative externalities, as are noted by research focusing on the impact of Airbnb on cities and rental prices. In sum, this research intends to fill the gap of sharing economy and collaborative housing research.

In this research, the link between sharing economy and collaborative housing is studied, more specifically by looking at cohousing. It is studied whether a cohousing initiative can be described as a sharing economy, and what positive effects of this can be community empowerment of self-organization. This will lead to a greater understanding of what sharing economy means for the field of collaborative housing. It might also lead to new insights usable for future research.

Furthermore, collaborative housing research is connected to the field of science communication and communication design in this study, which can lead to interesting findings.

1.2.3 SCIENTIFIC RELEVANCE – SC

This research focuses on the link between empowerment and self-organization of cohousing communities. The systematic literature study showed that literature on empowerment and self-organization only marginally focuses on the connection with the built environment. This research intends to fill that gap. Thus, researching this link can provide interesting and new knowledge for the field, and make a connection to research within the built environment academic field. Furthermore, this research translates these findings into a communication tool, which improves the practical applicability of this research, but also provides the opportunity to validate the research findings. Lastly, this research connects science communication as a field to management research within the built environment. It is thus valuable for the science communication field, in the sense that it is illustrative of how these two science disciplines can be connected.

2 LITERATURE STUDY

In order to formulate the main research question, sub-questions and the research method, it is necessary to elaborate on the concepts that are researched in this study. This helps to clarify the relations between these concepts. The methods for the literature study are described in section 3.4.1. The literature study focused on four concepts: (the type of) housing, sharing economy, self-organization, and empowerment and social capital. The findings of the literature study are brought together in the conceptual framework, which is presented in section 2.5.

2.1 TYPE OF HOUSING

It is important to clarify the housing type this research focuses on. In this section, literature is used to gain an understanding of various types of housing which focus on sharing or joint creation. After this, a definition for the housing type focused on in this research is set up.

In this overview, the difference between collaborative housing, co-housing and cooperative housing is analyzed. Many more terms are used throughout different countries, dependent on the characteristics of the housing (Fromm, 2012). These three terms provide the broadest view on the issue, but the difference between especially co-housing and collaborative housing is hard to define. Not every author in the field presents the terms in the same way. Vestbro (2010a), for example, defines collaborative housing as one example of co-housing, next to communal housing and collective housing, whereas for Fromm (2012) co-housing is a term that can be placed below collaborative housing. Therefore, my own position regarding the terminology will be defined below.

Collaborative housing

Collaborative housing is defined as an umbrella term by Fromm (2012) and Lang *et al.* (2018), which encompasses a whole range of housing movements. Fromm (2012) highlights the aspect of residents sharing facilities on top having an autonomous housing unit. However, not only the sharing of facilities is important, but also the social dimension. The housing model can "encourage residents to socialize, care and interact with each other as well as caring, interacting and modelling community within the neighbourhood" (Fromm, 2012). Co-housing is placed under the umbrella of collaborative housing.

Czischke (2018) describes collaborative housing as "the arrangement where a group of people co-produce their own housing in full or part in collaboration with established providers". Established providers can be public service professionals, but also housing corporations, architecture firms, and so on. The group of people shares a set of values which define the housing project (Czischke, 2018). In the dissertation of Tummers (2017, p. 103) collaborative housing and co-housing are defined as similar. Vestbro

(2010a), as mentioned, defines collaborative housing as a form of co-housing, meaning housing oriented towards collaboration by residents.

Co-housing

As stated in the previous section, the terms collaborative housing and co-housing are similar for some writers, but not for all of them. Table 2.1.1 presents the definitions for different types of co-housing as defined by Vestbro (2010a, p.29).

Collective housing is defined more specifically by Vestbro (2010a) as housing in which there are more communal spaces or collectively organized facilities than in conventional housing. Furthermore, several models of collective housing are introduced.

Bresson & Denèfle (2015) also address the variety of terms that are part of the broader term of co-housing. Important characteristics are a strong collective of residents, where users are at the heart of the development and management of the project, empowering them to have an influence on the design of their home. Furthermore, Bresson & Denèfle (2015) stress that, even though the ideological principles behind co-housing projects differ, three core concepts are always there: sharing and pooling of resources, environmental awareness, and citizen participation. As mentioned previously, Tummers (2017) equates collaborative housing and co-housing.

Cooperative housing

Vestbro (2010a) states that cooperative housing encompasses cooperative development and ownership. It is part of the larger cooperative movement (Bresson & Denèfle, 2015; Sazama, 2011). According to the International Cooperative Alliance (ICA), a cooperative can be defined as a group of people who join together in a common undertaking. There is democratic control, shared capital, distribution of surplus and open and voluntary membership (Chloupkova, 2002). Cooperatives are for example used by farmers to ensure survival.

Zooming in on cooperative housing, it is a legal model in which economic burdens and benefits are shared.

Cohousing	Housing with common space and shared facilities
Collaborative housing	Housing oriented towards collaboration by residents
Collective housing	Emphasizing the collective organization of services in housing
Communal housing	Housing for togetherness and sense of community
Commune	Living without individual apartments
Cooperative housing	Cooperative ownership without common spaces or shared facilities

Table 2.1.1. Definition of types of co-housing by Vestbro (2010a, p. 29).

Spaces within the building are not shared per se nor is there necessarily focus on creating a sense of community (Vestbro, 2010a). However, there are collaborative housing projects that adopt a cooperative legal form (Brandsen & Helderman, 2012; Czischke, 2018). Oorschot *et al.* (2013) state that the motivation behind cooperative housing rests on three pillars: the aim for change (intrinsic motivation), the organizational capacity (to create cooperative housing) and the economic capacity (financial ability).

Type of housing focused on in this research
The type of housing focused on in this research will now be defined. As mentioned in the problem statement, there are three challenges of the increased number of single-person households that this research focuses on:

1. Decreased affordability of housing;
2. Social isolation;
3. The need for increased environmental sustainability.

I selected 'cohousing' as defined by Vestbro (2010a) and in table 2.1.1 as the housing type this research focuses on: 'housing with common space and shared facilities'. This type of housing is selected because shared facilities and common spaces can facilitate room for social interaction. Sharing of facilities will lead to economic benefits as well (Vestbro, 2010b). Also, the sharing of facilities and spaces is environmentally sustainable (Heinrichs, 2013).

An important characteristic of the cohousing researched in this thesis, is that it should be self-organized. This is because, as stated in section 1.1.4, there are several barriers to self-organization of collaborative housing. This research focuses on improving the conditions for self-organization. Conditions for and characteristics of self-organization are defined in section 2.3. Whether the housing will be rented or owned, is to be determined. The target group for the housing will be single-person households.

To sum up, the following definition of the cohousing focused on in this research can be formulated: *Housing that has autonomous units, common space(s) and shared facilities, which is intended for single-person households, and developed on the basis of self-organization.*

It is also important to mention that in this thesis the term 'collaborative housing' will be used as the umbrella term to indicate the whole range of housing movements as discussed above. The term collaborative housing is used instead of co-housing to avoid confusion with the term cohousing.

2.2 SHARING ECONOMY

In this section, the concept sharing economy is defined, as well as its drivers and possible benefits, and limitations. The literature regarding sharing economy is growing, but definitions of the concepts and ideas surrounding the concept vary. A variety of resources is studies to set up the sharing economy definition, with the intention of getting a balanced overview of present literature.

Definition of sharing economy and its possible benefits
Sharing is a phenomenon that has been around for as long as our human existence (Belk, 2014). According to Belk (2007) it revolves around distributing what is yours to others, or receiving what is theirs; you move from defining *mine and yours to ours*. Acts of sharing can be necessary for survival (e.g. sharing food in times of scarcity), or can be an altruistic act based on kindness or convenience (e.g. lending someone a piece of clothing). Previously, these sharing acts took place mainly within the personal sphere, among family members or friends (Belk, 2014). However, due to several reasons the sharing domain has grown bigger the past decade, and the term "sharing economy" has gained prominence (Cheng, 2016).

Frenken & Schor (2017) define the sharing economy as: "consumers granting each other temporary access to under-utilized physical assets, possibly for money". Furthermore, they state that sharing economy is a combination of consumer-to-consumer interaction, excess of physical goods and temporary access (to those goods). They also state the sharing is an old practice, but what makes the sharing economy more discussed nowadays is that a new aspect has been added to it: "stranger sharing". Information and communication technologies enable sharing with strangers, which has been made more safe by using ratings, for example (Frenken & Schor, 2017).

Oh & Moon (2016) state that the first emergence of sharing economy revolved around non-monetary transactions, but it has been turned into a business concept in which transactions are possible, noting Airbnb and Uber as examples.

Technology has given rise to the concept of sharing economy, which also has been noted by Belk (2014), Hamari *et al.* (2016) and Puschmann & Alt (2016). Puschmann & Alt (2016) present the following definition

of sharing economy: "collaborative consumption made by the activities of sharing, exchanging, and rental of resources without owning the goods". Also, they elaborate on possible drivers behind the rise of sharing economy business models:

1. Changing consumer behavior;
2. Social networks and electronic markets;
3. Mobile devices and electronic services.

Changing consumer behavior is also noted by Belk (2014), stating that the economic collapse in 2008 put many consumers in a fragile financial position, and naming sharing as an option to continue being able to access certain goods.

Botsman & Rogers (2011, p. xvi) note four crucial principles behind sharing economy: critical mass, idling capacity, belief in the commons and trust between strangers. They also state that "it's not a reactionary blip to the 2008 global financial crisis. It's a growing movement with millions of people participating from all corners of the world" (Botsman & Rogers, 2011, p. xvi).

According to Hamari *et al.* (2016), the sharing economy is about peer-to-peer activity in which (access to) goods and services are shared, often through the use of community-based online services. Belk (2014) states that sharing economy and collaborative consumption practices rely on temporary access and non-ownerships of goods and services, and that ability to connect with other consumers via the internet is at the base of it.

Böcker & Meelen (2017) analyzed motivations to participate in sharing economy, and concluded that these are either economic, environmental or social and not mutually exclusive.

Anecdotal evidence has shown a possible positive impact on the decrease of consumption and pollution, and on the increase of economic coordination within communities (Hamari *et al.*, 2016). Heinrichs (2013) describes the increasing value of the shared goods as a common premise of the sharing economy. It can improve social cohesion because of the increased interaction between consumers, minimize resource use and empower individuals (Heinrichs, 2013). Frenken & Schor (2017) also note that there might be social, economic or environmental benefits, but do not specify these, as these have not been studied extensively. Belk (2007) and Botsman & Rogers (2011, p. 130) focus slightly on the effect that sharing could have on community building. Belk (2007) states that "sharing can foster community". Botsman & Rogers (2011, p. 130) describe community building as a result of collaborative consumption.

Bringing the various ideas and definitions together, the following definition of sharing economy will be used in this research: *Collaborative consumption of under-utilized goods, enabled through access rather than ownership, often through use of community-based online services.*

As will become clear in section 2.3, there is an overlap between the characteristics of sharing economy and of self-organization. Both use community-based networks, which indicates that they can be connected.

Sharing economy and housing
With sharing economy as a concept defined, it is necessary to zoom in on literature about sharing economy and real estate, or more specifically collaborative housing. Getting a lay of the land on that aspect provides a starting point and handles on how to connect sharing economy to housing in this research.

However, available literature rarely features collaborative housing or housing in general. Most literature discusses sharing economy within the hospitality sector, looking at companies such as Airbnb (Baum, 2017). Research focuses on temporary sharing, and focal points are the impact of Airbnb on real estate markets and urban planning, and how the presence Airbnb in a city can lead to gentrification and tourism bubbles (Sdino & Magoni, 2018; Ferreri & Sanyal, 2018; Wachsmuth & Weisler, 2018; Ioannides *et al.*, 2018). Other noted examples of sharing economy within real estate are shared workspaces and co-working (Baum, 2017). Lastly, residential energy sharing is noted as an example of sharing economy within the residential sphere (Cheng *et al.*, 2017).

Available literature thus mainly presents critiques of the sharing economy. Furthermore, it does not connect sharing economy to sharing practices among residents, for example. This research intends to fill that gap.

Some authors do focus on the connection between sharing economy and providing affordable housing, but these articles are mostly forward-looking calls for action. Ellen (2015) argues that American housing policy can learn lessons from the sharing economy. This could enable provision of affordable homes and optimize use of housing subsidies. Wyatt (2014) presents a similar idea. He states that the United States sharing economy can help get millions of renters into affordable, decent, existing homes, and it can help the elderly to live safely.

Possible limitations of the sharing economy

Next to possible positive impacts, literature shows that the concept of sharing economy may also have negative externalities. Some have already been addressed above, for example: the negative effects of Airbnb. Frenken & Schor (2017) defined an extensive list of negative externalities of the sharing economy. They grouped them in the economic, environmental and social dimension (table 2.2.1). When connecting sharing economy to cohousing, it is important to be mindful of these negative externalities. Especially those in the economic and social dimension might apply to cohousing as well.

Economic	Loss of business for other businesses
	Increased opportunity cost, meaning people share less altruistically
	Third parties may experience negative effects
	Platforms enter the market easily, lead to a backlash once governmental institutions respond to them
	Distribution of increased income and welfare is likely to be uneven
Environmental	No empirical evidence for the environmental benefits
	Rebound-effect (earnings are used for new goods)
	Economic growth leads to increased CO_2 production
Social	As sharing economy platforms grow, peer-to-peer interaction will decline
	Peer-to-peer discrimination/exclusion of sharing

Table 2.2.1. Negative externalities of the sharing economy, based on (Frenken & Schor, 2017).

2.3 SELF-ORGANIZATION

Earlier, the concept of self-organization was introduced. In this section, self-organization will be defined, as well as conditions that need to be present for self-organization to take place, and current barriers towards self-organization.

Definition of self-organization

A lot has been written about self-organization on a scale much broader than the built environment alone. In this section several definitions of self-organization are brought together to come to one definition of what self-organization means in this research.

Boonstra & Boelens (2011) speak of self-organization in relation to spatial planning and urban development. The development of housing is noted as an example of self-organization within urban development. They contrast self-organization with participatory planning, which is a top-down approach in which the government involves citizens in planning, but the citizens do not take the initiative (Boonstra & Boelens, 2011). It is argued that citizen involvement in planning is necessary and can have social, spatial, economic and political benefits. Results of participatory planning have been meagre, which is why Boonstra & Boelens (2011) introduce self-organization as a new way of looking at participatory and collaborative planning. They introduce a definition of self-organization which stems from complexity theory. According to them, self-organization is "a process of autonomous development and the spontaneous emergence of order out of chaos" (Boonstra & Boelens, 2011). Within planning, this extends to the personal motives, networks,

communities, processes and objectives of citizens that lead to their self-organization, relating to the idea that self-organization can be viewed from economic, spatial or social-political perspectives (Krugman, 1996; Portugali, 2000; Fuchs, 2006). From the social-political perspective, Boonstra & Boelens (2011) stress that it is important for self-organization that the communities are independent of the government. They define self-organization as: "initiatives that originate in civil society from autonomous community-based networks of citizens, who are part of the urban system but independent of government procedures".

Huygen *et al.* (2012, p. 11) use a similar definition of self-organization, stating that it is a sustainable, societal citizen initiative, which emerges separately from institutions, in which the responsibility and self-organizing capacity continue to be in the hands of the initiators. Again, the condition that the initiative is separate from the government is stressed. Furthermore, Huygen *et al.* (2012, p. 13-14) define four characteristics of self-organization:

1. Intrinsic motivation: a group of people centers itself around one idea, initiative, ideal or interest;
2. Organization through negotiation and soft leadership: the leader is not defined specifically or hierarchically but his or her role follows naturally;
3. Autonomy: a high degree of independence and own initiative;
4. Spontaneous emergence and creativity: spontaneous ideas can develop in an autonomous manner.

Based on the definitions and characteristics above, the following definition of self-organization is used in this research: *Initiatives that emerge spontaneously in civil society from autonomous community-based networks of citizens, who are part of the urban system but independent of government procedures, and that are created around a common intrinsic motivation.*

Conditions for self-organization
Now that self-organization as a concept has been explained and defined, the conditions needed for self-organization to take place will be discussed. Understanding this is important to define the relationship between cohousing, sharing economy and self-organization.
Huygen *et al.* (2012, p. 33-35) define five necessary conditions for self-organization:
1. Room for initiatives;
2. The ability to join the initiative or find people who want to join the initiative;
3. A sense of belonging of those involved;
4. (Moral) demarcation to avoid unwanted developments;
5. Trust: in each other (mutual trust) and the belief that the initiative matters (faith).

Brandsen & Helderman (2012) look at self-organization and active citizenship of citizens within their own living environment by analyzing cooperatives. The term co-production is used for the organization of these cooperatives. According to Brandsen & Helderman (2012), five conditions need to be met in order for successful co-production to occur in co-housing and more specifically in cooperatives:
1. Clear definition of boundaries;
2. Rules concerning withdrawal of housing services and new investments are adapted to local circumstances;
3. Simple collective choice mechanisms and decision rules;
4. The right to organize themselves as a community functions as baseline;
5. A conservative approach towards risky investments.

Furthermore, the interaction between individual motivation and collective action is stressed. The goal is to align individual interests and community interests, without leaning too much towards self-interest or too much towards altruistic goals (Brandsen & Helderman, 2012; Ostrom, 1990).
Czischke (2018) states that recent forms of collaborative housing are defined by "high degrees of user participation, the establishment of reciprocal relations, mutual help and

solidarity, and different forms of crowd financing and management, amongst others".

In sum, there are many conditions that can support self-organization. These can be summarized in the conditions below. These conditions show either practical aspects (i.e. financial feasibility, rules), and aspects that have to deal with interpersonal relationships and own motivation.
1. *(a common) Intrinsic motivation*: a group of people centers itself around one idea, initiative, ideal or interest. (Huygen *et al.*, 2012, p. 13)
2. *Mutual trust (within and beyond the organization)*: those involved trust each other, and trust external parties. (Huygen *et al.*, 2012, p. 35)
3. *Simple rules for collective use and decision-making*: the collective use of resources is guided by rules, as well as collective decision-making. (Brandsen & Helderman, 2012)
4. *Definition of boundaries of the initiative*: those involved understand the mission of the organization. (Brandsen & Helderman, 2012; Huygen *et al.*, 2012, p. 34)
5. *Room for initiatives*: those involved have the opportunity to execute initiatives. (Huygen *et al.*, 2012, p. 34)
6. *Financial feasibility*: the organization has a financially feasible business case. (Brandsen & Helderman, 2012; Czischke, 2018)

Barriers towards self-organization
Boonstra & Boelens (2011) note the governmental approach towards urban development as the main barrier towards self-organization. Governmental institutions are used to setting out procedures in which citizens can have a certain influence through participatory planning. However, self-organization is a bottom-up approach in which citizens take the initiative. This requires a new way of looking at the relationship between citizens and the government (Boonstra & Boelens, 2011).
Furthermore, the modus operandi of investors and developers does not match with community-owned development projects. Investors and developers tend to minimize risk, and their business models, investment structures and planning process are not adjusted to collaborative housing. As the housing market is already heated, there is no financial incentive to explore new development models (Fromm, 2012). This results in communities having to take the lead regarding their housing project, without being able to use expert knowledge.

As stated previously, empowerment of cohousing communities to self-organize themselves is a barrier. In section 2.2 it was noted that the concept of sharing economy is related to increased empowerment (Heinrichs, 2013).

However, one piece of the puzzle is still missing, namely what is needed for communities to feel empowered. Possibly sharing economy contributes to empowerment, but the question is how exactly this process takes place. This section discusses the systematic literature study on the relationship between empowerment, self-organization and (collaborative/co-)housing. However, there was no literature present focusing specifically on these concepts, which is why the study extended to literature regarding the built environment and planning in general. In figure 2.4.1 an overview is presented, with the communication-related concepts found in literature.

Figure 2.4.1 shows that various closely linked concepts are related to empowerment and self-organization. These concepts also show connections to each other.

Out of these concepts, social capital has been highlighted, as it not only connects to self-organization, but also to collaborative housing and cohousing, and to sharing economy. Furthermore, in the literature study, social capital came forward in most of the references. Social capital refers to the norms and networks that facilitate collective action (Woolcock, 2001). Putnam (1993) states social capital refers to "features of social organization, such as networks, norms, and trust, that facilitate coordinator and cooperation for mutual benefit". The connection between social capital, collaborative housing, cohousing and sharing economy is explained below. After this, the connection between social capital and empowerment is explained in detail.

Social capital and its connection to collaborative housing, cohousing, and sharing economy

The concept of social capital has been connected to collaborative housing, for example by Fromm (2012), stating the following: "social capital and the resources it provides are a key to the workings of this housing type" (i.e. collaborative housing). Furthermore, Ruiu (2016) states that of social capital can be identified in cohousing communities potential. Social capital may promote the feeling of belonging and community, the feeling of social control, helps to build networks inside and outside the community, and can lead to higher civic engagement (Ruiu, 2016). According to Williams (2005), cohousing

is suitable for building social capital, because it facilitates social interaction, which helps to build social capital.

Looking at sharing economy, Heinrichs (2013) notes that sharing economy might be able to contribute to increasing of social capital. Vestbro (2010) makes a similar remark by stating that sharing can help to build social relations. In this thesis, it is argued that sharing, which is present in both collaborative housing, cohousing and sharing economy, contributes to social relations and community, and thus to social capital.

Social capital and empowerment

In sum, social capital can be connected to collaborative housing and cohousing, and sharing economy. The question is then how social capital can contribute to empowerment of community self-organization, as this research aims to support community empowerment. Understanding how social capital supports community empowerment, can provide the starting point for research social capital in relation to sharing economy and collaborative housing.

Bakker *et al.* (2019) and Rosenberg (2012) focus on the relationship between social capital and empowerment. It might be possible to mobilize social capital – in the form of bonding, bridging and linking – to increase the level of community empowerment (Bakker *et al.*, 2019). It must be clarified what bonding, bridging and linking social capital entail. Bonding social capital occurs within a community of individuals, and relies on association and trust (Larsen *et al.*, 2002). It is local and inward looking, and supports development of kinship and friendship (Putnam, 2000, p. 22). Bonding capital itself might not lead to civic action regarding a problem within the neighborhood or community. Bridging social capital is about seeking contact, access, support of information beyond the boundaries of the community, and is strongly related to collective action (Larsen *et al.*, 2002). Bridging social capital networks are wider, and individuals from different backgrounds are brought together (Putnam, 2000). Linking social capital refers to the ability to gain resources, ideas and information from formal institutions and it connects people with varying levels of power and/ or social status (Woolcock, 2001; Aldrige *et al.*, 2002 in Muir, 2011). The relationship between social capital and bonding, bridging and linking, and taking action in community development or housing development, is also stated by Larsen *et al.* (2002), Hawkins & Maurer (2010), and Muir (2011).

As mentioned in section 2.3, self-organization is a problem because of unsuitable planning regulations and business models that do not match the financial system of cohousing projects (Jarvis, 2015; Tummers, 2016). This might contribute to the lack of empowerment of citizens to take initiatives, noted by Fromm (2012). In this section, two important aspects have become clear. First of all, the literature study shows that building social capital – in the form of bonding, bridging and linking social capital – can contribute to the level of community empowerment and self-organization. Furthermore, it has become clear that collaborative housing, cohousing, and sharing economy can support building social capital. Based on the literature study, this thesis argues that improving the level of social capital – in the form of bonding, bridging and linking – within cohousing communities through sharing economy may improve the level of community empowerment. As a result, this can then lead to increased self-organization, as the literature study shows.
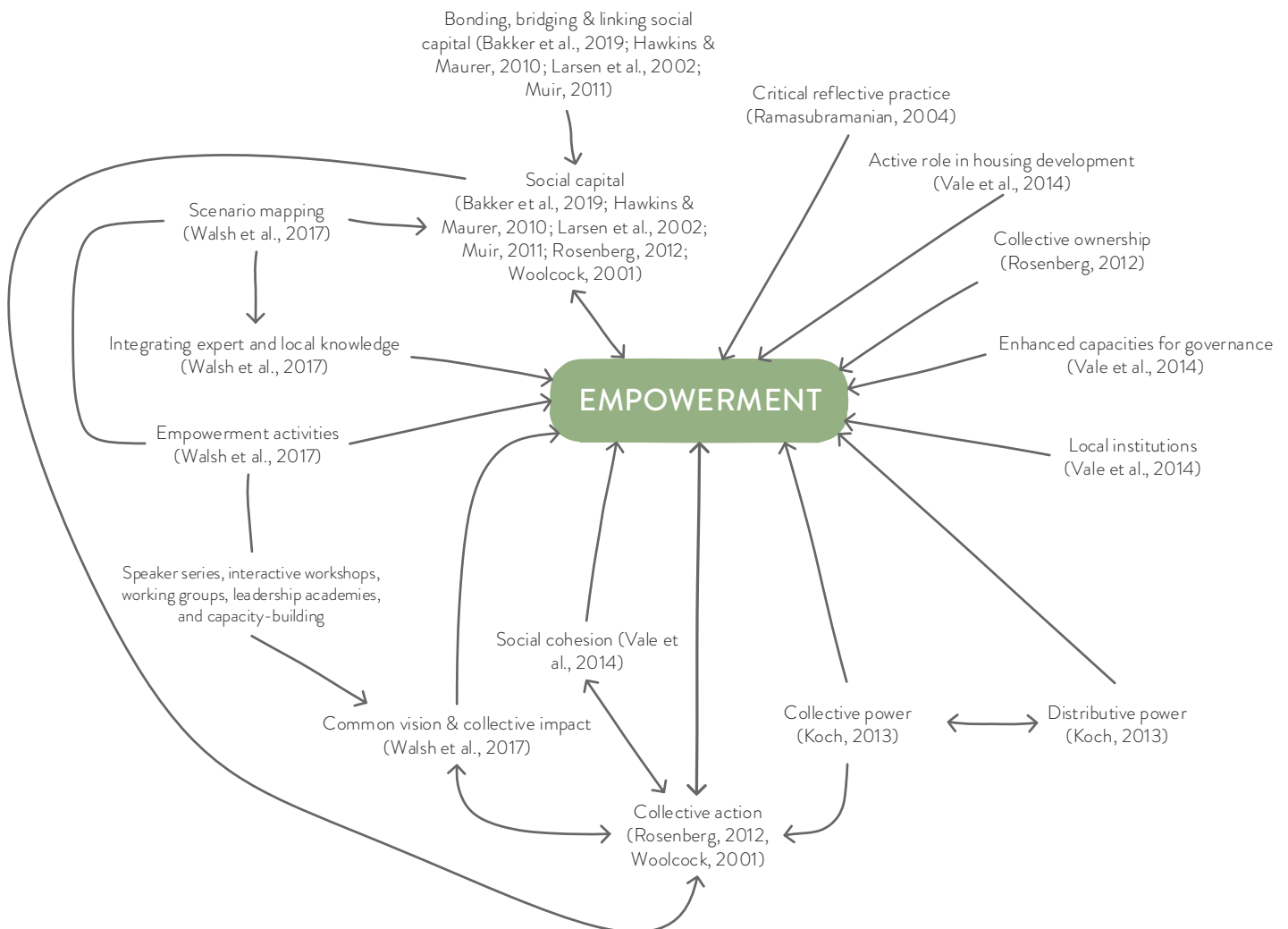

Figure 2.4.1. Literature study on empowerment, self-organization and housing. (own illustration)

2.5 CONCEPTUAL FRAMEWORK

As mentioned, the main research question of this research is the following:

How can the concept of sharing economy support empowerment of cohousing communities towards self-organization to create affordable homes?

The research question consists of four components: sharing economy, cohousing, affordability of cohousing and empowerment of community self-organization. Sharing economy is the concept that will be applied as a theoretical lens to look at cohousing, which is the type of housing that will be the subject of study. Looking at cohousing communities, the focus will be on increasing the empowerment of them towards self-organization, with the aim of creating affordable housing for themselves. Section 1.1 showed that affordability of housing is decreasing, especially in large cities, and that the amount of single-person households is increasing, which puts even more pressure on the affordability of the housing market. Collaborative housing and cohousing might offer a solution to these problems. However, collaborative housing and cohousing development faces challenges, of which community self-organization is one of them. The target group of this research is the cohousing community, thus the people that (intend to) live in cohousing. More broadly, communities and people that are in need of affordable housing might benefit from this research.

Looking at improving the self-organization of cohousing communities, this will be approached by connecting (the concept of) sharing economy to both self-organization and social capital.

The concept of sharing economy is connected to self-organization for two reasons. Firstly, sharing economy initiatives and self-organization both rely on community networks. The community-based character of sharing economy has been elaborated on in section 2.2. The definition of self-organization in section 2.3, also states the community-based nature of self-organization. Secondly, both sharing economy initiatives and self-organization are independent of government procedures and value a high sense of autonomy. Sharing economy initiatives arise around peers that start sharing a specific idle asset or good, for monetary, sustainable or altruistic reasons. Self-organization within the built environment arises spontaneously out of citizens that connect through a common intrinsic motivation. This shows that both sharing economy and self-organization are based on the same motivation, namely setting up an initiative which will support them in their goals, and that has not been facilitated from higher levels of power.

Sharing economy is connected social capital because, as section 2.4 clarified, sharing economy may support building of social capital. Social capital – in the form
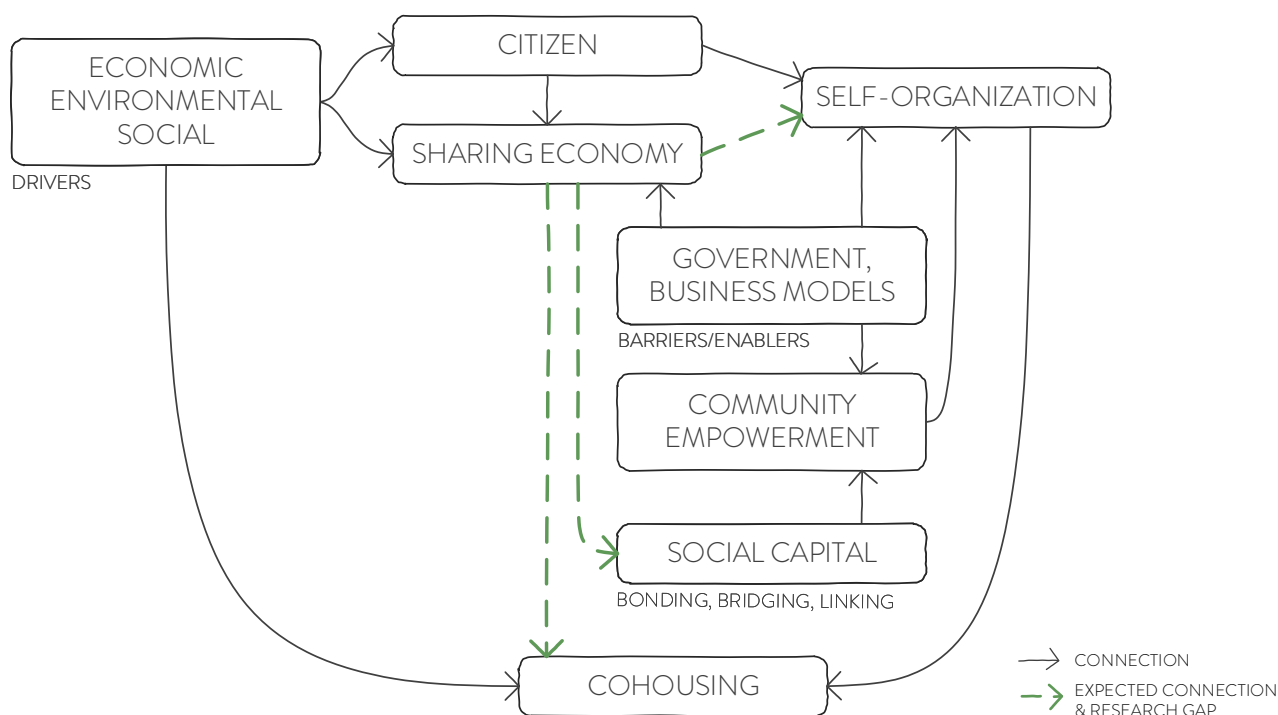
Figure 2.5.1. Conceptual framework. (own illustration)

of bonding, bridging and linking – might help to support empowerment.

In sum, this research ties in several concepts which at some points show an overlap. However, this specific connection of sharing economy, cohousing, self-organization, and empowerment through social capital, has not been made in literature yet. This is the research gap this thesis focuses on.

In the conceptual framework (figure 2.5.1), the input from chapter two is integrated with the information from the main research question. The conceptual model shows the relationships between the concepts, which helps to clarify which relationships will be studied. The aim of the research is to empower cohousing communities to self-organize by supporting their social capital, to create affordable homes. This will be achieved by studying the link between sharing economy and cohousing, sharing economy and self-organization, and sharing economy and social capital. These links have been visualized in the conceptual framework as dotted lines, as these links have not been confirmed by literature, but are expected based on the literature study. These lines thus indicate the research gap this research intends to fill. The other links in the conceptual framework, which are black lines, are relationships that were found in present literature.

3 METHODS

In this chapter the research methods used in this research are elaborated on. First, the research objectives and sub-questions are described and connected to the conceptual framework in section 3.1. Second, the research design is described in section 3.2. In section 3.3, the case study Stad in de Maak is introduced. In section 3.4, the used research methods are described. Section 3.5 presents ethical considerations, and section 3.6 discusses the reliability and validity of this research.

3.1 RESEARCH OBJECTIVES

Based on the problem statement, conceptual model and the defined concepts and their drivers/barriers, four research objectives and seven sub-questions were formulated. Research objectives 1-3 have been determined from an MBE perspective, and research objective 4 from a SC perspective. However, the input from the MBE perspective was necessary for the SC perspective and vice versa. The SC aspects of the research built upon the knowledge gained from the MBE perspective and deepened this knowledge, thus research objective 4 (SC perspective) was integrated in all research phases. Below, the research objectives and sub-questions are described in more detail. Together, the sub-questions provide the pieces of the puzzle to answer the main research question. As mentioned, the concept of sharing economy has been used as a model to look at cohousing. The first objective of the research (sub-questions 1 and 2) was to understand to what extent cohousing initiatives can be viewed as a sharing economy. This was done by studying if and to what extent the three characteristics of sharing economy (i.e. under-utilized goods, access rather than ownership, use of community-based online services) are present in cohousing initiatives, by researching a specific cohousing initiative. Also, advantages and disadvantages of the sharing economy within the initiative were studied.

Research objective 2, comprised of sub-questions 3 and 4, focused on the barriers to and enablers of self-organization of cohousing initiatives. The literature study (section 2.3) hinted towards a few barriers, but this information was not detailed . For this reason, the barriers and enablers have been analyzed in more detail. Moreover, in section 2.3, an overview of conditions for self-organization was defined, and the barriers and enablers have been linked to these conditions. After understanding which conditions were influenced and specifically which conditions were hampered, the research could focus on improving these conditions. It must be noted that enabler and advantage, and barrier and disadvantage, are quite similar terms. It was chosen to use barrier and enabler for self-organization, and disadvantage and advantage for sharing economy, to avoid confusion of which of the two concepts is talked about, not because of major differences in the terms in itself.

To reach research objective 3, consisting of sub-questions 4, the concept of sharing economy was connected to the (hampered) conditions for self-organization. The present characteristics, as well as its advantages and disadvantages, of sharing economy in cohousing initiatives

were connected to the conditions for self-organization to see if the concept of sharing economy can help improve these conditions (sub-question 4). The outcomes were translated into a communication tool which was designed to support the sharing economy of the cohousing initiative. This communication tool is thus a practical application of the findings of the research.

Research objective 4, consisting of sub-questions 6 and 7, completed the research. In section 2.4 it became clear that social capital in the form of bonding, bridging and linking, can contribute to community empowerment towards self-organization. In order to apply sharing economy to social capital, it was necessary to understand to what extent the studied cohousing initiative possesses in bonding, bridging and linking capital (sub-question 5). Then, the present characteristics, as well as its advantages and disadvantages, of sharing economy in cohousing initiatives were connected to bonding, bridging and linking capital to understand if these forms of capital can be supported. The outcomes, together with the outcomes of research objective 3, were translated into a communication tool. This tool was designed to facilitate the sharing economy of the cohousing initiative.

Research objective 1
Understand to what extent the three characteristics of the sharing economy (i.e. under-utilized goods, access rather than ownership, use of community-based online services) are already present in cohousing initiatives.
Sub-question 1: To what extent are collaborative consumption of under-utilized goods, access rather than ownership and use of community-based online services present in current cohousing initiatives?
This question helps understand whether sharing economy and cohousing initiatives are connected. The outcome is a description of the three characteristics of sharing economy and its presence in current cohousing initiatives.
Sub-question 2: What are the advantages and disadvantages of the sharing economy in cohousing initiatives in practice?
This question provides information on the advantages and disadvantages of sharing economy within existing cohousing initiatives, if a sharing economy is present. The outcome is a description of advantages and disadvantages of the sharing economy in a current cohousing initiative.

Research objective 2

Analyze what the barriers to and enablers of self-organization of cohousing initiatives are and which conditions for self-organization they influence.

Sub-question 3: Which barriers to and enablers of self-organization of cohousing initiatives can be found in practice?

This sub-question provides insight in the barriers to and enablers of the self-organization of cohousing initiatives. The result is an overview of barriers and enablers. This overview provides the input for sub-question 4.

Sub-question 4: Which conditions for self-organization are influenced by the found barriers and enablers?

The found barriers and enablers are connected to the conditions for self-organization. The outcome is an overview of which conditions for self-organization are either hampered or supported. This analysis provides input for sub-question 5, which focuses on the application of sharing economy to the conditions for self-organization.

Research objective 3

Analyze if the sharing economy of the cohousing initiative can help to improve its conditions for self-organization, specifically the conditions that are hampered.

Sub-question 5: How can the sharing economy of the cohousing initiative support the initiative's conditions for self-organization?

This question connects the findings of sub-questions 1 and 2 to sub-question 4. The characteristics, advantages and disadvantages of the sharing economy in the studied cohousing initiative are applied to its conditions for self-organization, specifically to understand if the hampered conditions are supported. These outcomes are translated into a communication tool which was designed to support the sharing economy of the cohousing initiative.

Research objective 4

Understand whether the concept of sharing economy can support the empowerment of the community towards self-organization by focusing on the social capital of an existing cohousing community.

Sub-question 6: To what extent does the existing cohousing community possess bonding, bridging and linking social capital?

This question focuses on understanding the social capital – in the form of bonding, bridging and linking capital – of the cohousing community. The outcome is an overview the community's social network, and details on the bonding, bridging and linking capital of the community. The outcomes provide the input for sub-question 7.

Sub-question 7: How can the sharing economy of the cohousing initiative support its bonding, bridging and linking social capital?

This question connects the findings of sub-questions 1 and 2 to sub-question 6. The characteristics, advantages and disadvantages of the sharing economy in the studied cohousing initiative are applied to its bonding, bridging and linking capital to understand where the sharing economy might be able to support this. These outcomes are translated into a communication tool which was designed to support the sharing economy of the cohousing initiative.

To sum up and show how the research objectives and sub-questions related to the main research question and conceptual framework, figure 3.1.1 shows how sub-questions 1-7 fit in to the conceptual framework. It becomes clear that sub-question 1 focused on the relationship between sharing economy and cohousing. Sub-questions 2 and 3 both focused on the drivers/enablers of self-organization. Sub-question 4 combined the input from the first three questions, by focusing on the whole. Sub-questions 5 and 6 tied in to the knowledge produced in questions 1-5 by focusing on social capital and cohousing, and social capital and sharing economy.
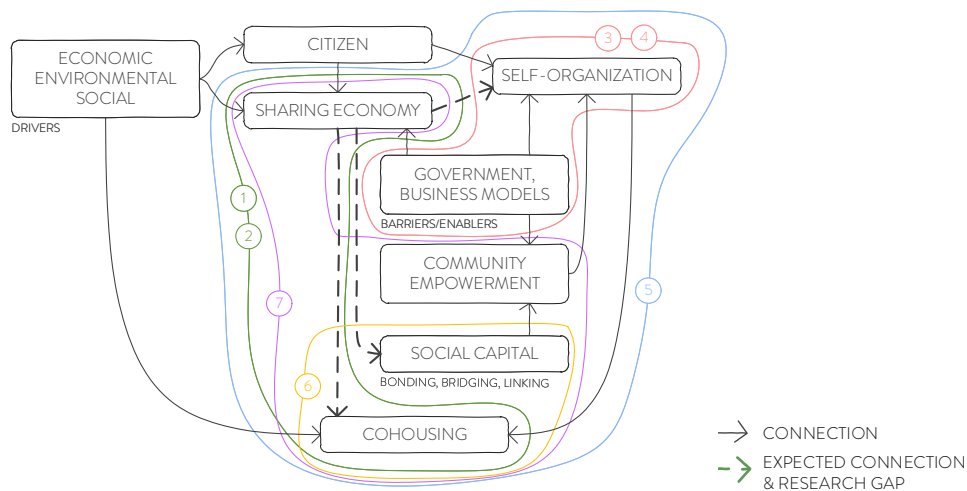

Figure 3.1.1. Conceptual framework and sub-questions 1-7. (own ill.)

3.2 RESEARCH DESIGN

The study was a qualitative design-based research, using a single case study (Bannan-Riland, 2003; Barab & Squire, 2004; Bryman, 2012).). Figure 3.2.2 shows a simplified overview of the research design, and figure 3.2.1 shows how the double diamond model of the Design Council (2005) applies to the research. According to Bryman (2012, p. 36), qualitative research emphasizes an inductive approach to the relationship between theory and research, focusing on generation of theories. As the link between collaborative housing and sharing economy has not been researched to a great extent, there is a focus on providing a starting point for a connection between two concepts.

Design-based research revolves around setting up a design or "intervention" for a specific problem, and making iterations on this intervention. A characteristic of design-based research is the active involvement of participants, as co-participants and not as subjects (Bannan-Ritland, 2004). This characteristic might indicate that design-based research fits well with cohousing initiatives, as these initiatives value citizen participation (Bresson & Denèfle, 2015).

In this research, the aim was to empower communities to self-organize by supporting their social capital, to create affordable and environmentally sustainable homes. This was achieved by studying the link between sharing economy and cohousing, sharing economy and self-organization, and sharing economy and social capital. Because this connection has not yet been researched extensively, a single case study provided the opportunity to take an in-depth look at the possible connections. A case study research focuses on the complexity and particular nature of the case in question (Bryman, 2012, p. 66). Case study research can be used to investigate a contemporary phenomenon within its real life context, especially when the boundaries between the phenomenon and its context are not clearly perceptible (Yin *et al.*, 1985). Applied academic fields such as management and urban planning often use case studies as a method to collect qualitative data (Heurkens, 2012). Furthermore, design-based research values the input of participants

during the process. Using a single case study meant that enough time was available to contact residents and people involved in the cohousing project, and getting their input on the design of the communication tool. Lastly, qualitative research sometimes deals with research fatigue, and participants might not be willing to invest in yet another research project (Clark, 2008). Selecting one case study instead of multiple, makes it possible to build a solid relationship with the case, hopefully mitigating the effects of research fatigue. In future research, another cohousing project could serve as a case study to validate the findings from this research.

The research was split into 3 phases: preparation, empirical research and synthesis & design. The used techniques in these three phases are explained in section 3.4. Furthermore, their strong and weak aspects are reflected upon in chapter 9.
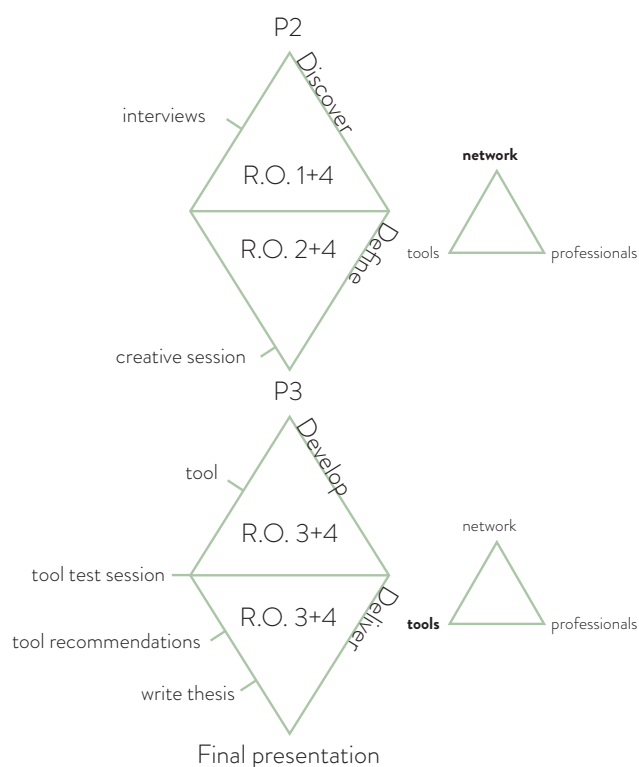
Figure 3.2.1. Research design & double diamond. Own illustration, based on Design Council (2005)

PREPARATION

PROBLEM STATEMENT

LITERATURE STUDY

METHODOLOGY

EMPIRICAL RESEARCH

INTERVIEWS

VALIDATION

ANALYSIS
INTERVIEW RESULTS

1-3, 6

CONNECTION BARRIERS/
ENABLERS TO CONDITIONS
FOR SELF-ORGANIZATION

4

SYNTHESIS
& DESIGN

CONNECTION SHARING
ECONOMY TO CONDITIONS
FOR SELF-ORGANIZATION

CONNECTION SHARING
ECONOMY TO SOCIAL
CAPITAL

5, 7

CREATIVE SESSION

USE OUTPUT FOR
DEVELOPMENT OF
COMMUNICATION TOOL

VALIDATION

TEST SESSION
COMMUNICATION TOOL

5, 7

RESEARCH STEP
WITH CASE STUDY

INDIVIDUAL
RESEARCH STEP

SUB-QUESTION

FINAL MASTER THESIS
CONCLUSIONS &
RECOMMENDATIONS

RQ

Figure 3.2.2. Research design. (own ill.)

3.3 DESCRIPTION CASE STUDY

In this section, the case study will be explained in more detail. First of all, the reasons to select Stad in de Maak as a case study are given. Secondly, the history of the project will be discussed, followed by a list of principles that underline Stad in de Maak's initiatives. In section 3.3.4, a map with the current situation (buildings and its households) is given, stating what kind of initiatives happen at every location. Lastly, it will be elaborated on what kind of barriers towards Stad in de Maak were already mentioned in introductory conversations, and how they are trying to deal with these.

3.3.1 CASE STUDY SELECTION

The selection of the case was made based on three components, related to the literature study. First of all, the case should be a cohousing project, as defined in section 2.1 as: *Housing that has autonomous units, common space(s) and shared facilities, which is intended for single-person households, and developed on the basis of self-organization.* Second, the case should be in a location that experiences decreased affordability of housing. Third, communication with the people involved in the case is important, to ensure their consent of using their project as a case study and that the research can be carried out. Based on these components, project Stad in de Maak (city in the making) in Rotterdam was selected as the case for this research. The G4 experience a large increase in housing prices and the supply does not meet the demand (RIGO, 2018). As part of the G4, Rotterdam was thus an interesting location to research affordability of housing. Also, findings about Stad in de Maak may be applied to Rotterdam as a whole, which can benefit the citizens of Rotterdam who are looking for affordable housing and are interested in collaborative housing. Because of the similar market situation, it might be possible to translate findings from Stad in de Maak to other cities in the G4 as well.

Looking at the characteristics of Stad in de Maak, there is a strong focus on self-organization. Also, there is a close relationship with housing corporation Havensteder, which was interesting for the findings and is illustrative for the complexity of the landscape that cohousing initiatives exist in. At Stad in de Maak, residents share common spaces, but also have their own living quarters. Most residents are of a single-person household. The project is driven by environmental, economic and social sustainability (Stad in de Maak, 2016). Stad in de Maak thus corresponds with the definition for cohousing, and the context of Stad in de Maak matches the problem statement. A co-founder

from Stad in de Maak addressed that Stad in de Maak has the ambition to become independent from housing corporation Havensteder, but they struggle with realizing this (Vollaard, 2018).

3.3.2 HISTORY STAD IN DE MAAK

Stad in de Maak is the product of the crisis. In 2011, housing corporation Havensteder, which has a portfolio of around 45000 apartments in Rotterdam, finds itself unable to sustain this portfolio. Two buildings that were "too decrepit to be used and too expensive to be fixed" appear to be a toxic asset within this portfolio (Džokić & Neelen, 2018, p. 83-84). These buildings are located at the Pieter de Raadtstraat, close to Rotterdam Central Station. Havensteder acquired these buildings in late 2009, for over half a million euros, with the aim of demolishing them. However, the value of the buildings plummets due to the crisis, and Havensteder is unable to continue with their intended plan.

Two options are presented, either boarding the buildings and revaluating them in 8-10 years, or finding an alternative solution with a more out-of-the-box idea. Two artist collectives are asked for ideas, and they conclude that in order to make the buildings safe and ready for some form of use would cost at least €60.000. Havensteder shelves the plan, but Erik Jutten (one of the Stad in de Maak co-founders) proposes to use the loss to start immediate revival of the buildings. Thus, getting the 60.000 euro loss paid upfront and using this money to make the buildings safe and livable again (Džokić & Neelen, 2018, p. 88). This proposal is accepted, and Stad in de Maak is born.

Erik Jutten joins forces with Ana Džokić and Marc Neelen (STEALTH.unlimited) and Piet Vollaard, and together they set up the legal entity Stad in de Maak. They sign an agreement with Havensteder on October 24, 2013 (Džokić & Neelen, 2019, p. 88).

From there, the group starts working on making the buildings at the Pieter de Raadtstraat safe. Also, they start thinking about how to use the buildings. Fast forward to today, and Stad in de Maak has grown from two to eight buildings, and has won the Job Duraprijs for their project (Džokić & Neelen, 2018, p. 89).

3.3.3 PRINCIPLES BEHIND STAD IN DE MAAK

In their book, co-founders Džokić and Neelen (2018) describe 6 principles that in hindsight can be identified as principles behind Stad in de Maak. These are:

1. *Take a minimalist (or no-nonsense) approach to investments;*
2. *Replace, where possible, monetary flows with non-monetary alternatives;*
3. *Make each building a self-sustaining node (in economic, social and environmental terms) within the collective;*
4. *Create a common finance pool to sustain and expand the infrastructure;*
5. *Keep financial pressure away from the common spaces that perform for the community;*
6. *Set up mutual support structures within an internal circular economy.* (Džokić & Neelen, 2018, p. 114-118)

These principles show an approach in which the focus is on economic benefit, making optimum use of available resources and building a socially sustainable community.

Zooming in on principle 5, there are also 6 specific rules for the use of the commons. These are called the meentregels, which is Dutch for 'rules for the commons'. The rules are fluid and can change based on needs of the users. The rules are:

- *The commons are freely accessible for use to the entire Stad in de Maak collective and external users, and they are free from 'rent'. However, a small contribution is requested from external users (non-tenants) for the use of electricity and maintenance.*
- *It is an unobstructed space (in essence the space is kept as empty as possible, and is available to different users for temporary occupation by and for various functions). There is no exclusion of use, as long as the particular occupancy falls within the limits of the commons.*
- *The commons are governed by the users on the base of a consensus democracy and without any hierarchy, boss or company/institution on command (however, there will have to be a steward to ensure the safe use of machines and the fair distribution of space, but this steward is overseen by the collective).*
- *The use of space by one individual must not frustrate others who wish to use it (this is a crucial rule: equality forms the basis). Nobody can claim space for themselves in the long term (this leads to the depletion of the collective; or a 'tragedy of the commons').*
- *Anyone using the space must (if possible) leave it empty and clean – a 'Clean Space Policy' – and where possible better-looking than it was before use.*
- *Each commons has its limits and rules. Physical limits (what does and what does not belong to the commons?),*

limits of use (what is not possible to do?) and property limits (specific items are personal property and may not be used by others – lock them away if you are not there, others may be used by everyone or are in any case collectively owned).
(Džokić & Neelen, 2018, p. 116)

3.3.4 CURRENT SITUATION

Stad in de Maak has the following assets: Pieter de Raadtstraat 35&37 (living, working, commons), Banierstraat 62 (working, commons), Bloklandstraat 190 (living, working, commons), Zegwaardstraat 9 (living), Zwaanshals 288 B (living, working, commons), Almondestraat 141-235. Previously used buildings are: Schiestraat 12 (working, commons) and Noordplein 197 (working, commons).
Figure 3.3.4.1 presents a map of all the locations.

3.3.5 BARRIERS DEVELOPMENT

In an introductory conversation with one of the co-founders, Piet Vollaard, two barriers were mentioned already (Vollaard, 2018). Interview results can confirm or deny these barriers.

First, finances are still a problem. Stad in de Maak currently exists at the courtesy of Havensteder, as Havensteder allows them to manage derelict buildings for free. Stad in de Maaks financial model thus relies on free 'rent'. However, Stad in de Maak has the ambition to buy their own property. This would change their financial model, and the co-founders are currently looking for solutions on how to make it financially feasible. They have taken part in two biddings where Havensteder sold some properties. However, in both situations they lost to a commercial bidder that was able to bid a higher price. According to Stad in de Maak, the only way for them to win a bidding is when the seller focuses not only on the highest bidder, but also on the bidder that provides a societal gain (Vollaard, 2018). One way of enabling buying property is by means of VrijCoop. This is a cooperative based on the German Mietshäuser Syndikat,. Within VrijCoop, several collaorative housing initiatives join forces to enable buying property together. The property will remain within VrijCoop, and residents will rent housing from VrijCoop, creating a form of collective ownership (VrijCoop, 2019).

A second barrier is the use of the commons and reinforcement of rules. Several buildings have a common downstairs area, but, due to the flat organization of Stad in de Maak and wish to steer clear from a strong hierarchy, it is complicated to set up rules for using the commons and subsequently reinforcing those rules (Vollaard, 2018).
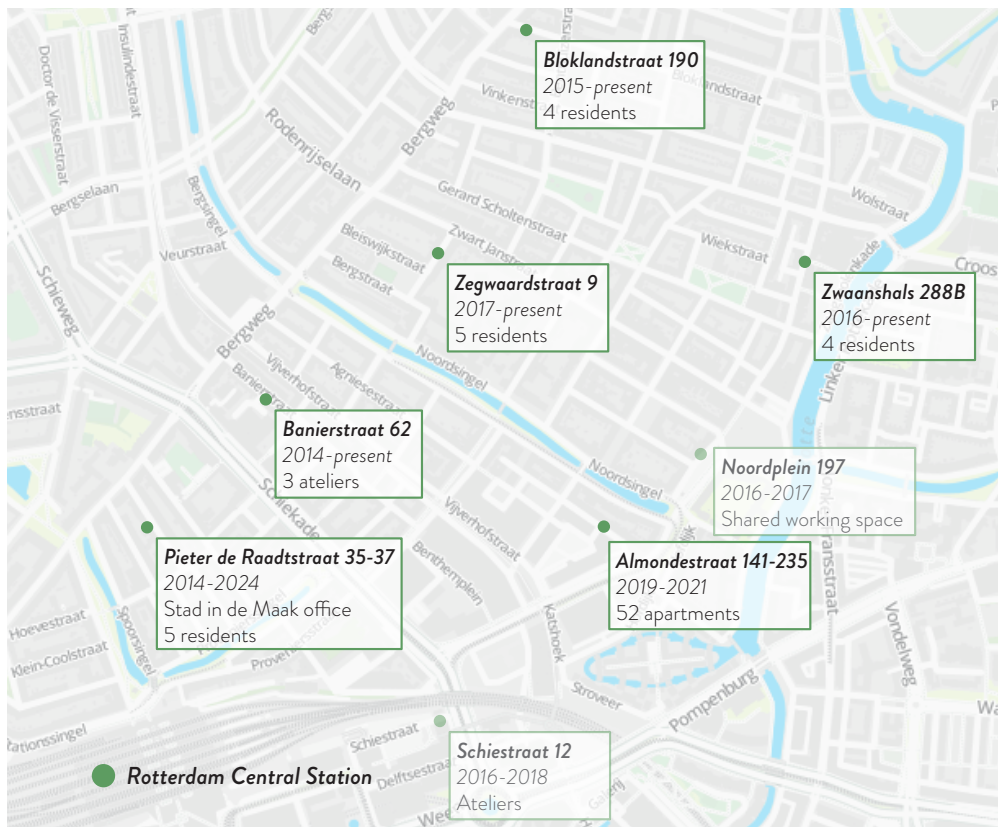
Figure 3.3.4.1. Map buildings Stad in de Maak. (own ill.)

3.4 RESEARCH METHODS

This research used a literature study, and a case study, in which semi-structured interviews, a creative session and a communication tool test session were used. These methods are discussed below.

3.4.1 LITERATURE STUDY

In the preparation phase of this thesis research, a literature study was used. The literature study is an important element in all research, which helps to define current knowledge on the topics, the type of research methods that have been used, controversies about the topic, if there are any clashes of evidence and who the key contributors are (Bryman, 2012, p. 8).

In this research, the literature study has been used to improve understanding of the topics and to enable connecting the concepts in the conceptual framework. The studied concepts are: collaborative housing and cohousing, sharing economy, self-organization, and empowerment and social capital. The results from the literature study were translated into variables, which are attributes on which cases vary. After doing so, these variables were used to set up the semi-structured interviews (Bryman, 2012, p. 48). This process of

operationalization will be discussed in section 3.4.2.

The search engines used for the systematic literature study were Scopus and ScienceDirect. Furthermore, the references from articles and books found in the named search engines were checked to ensure all available useful literature was read. To find these references, Google Scholar was used.

Collaborative housing and cohousing

The following search terms were used: collaborative housing, co-housing, and cohousing. Renowned sources and journal articles were used, which discussed various viewpoints on the issue. References from the reference lists of the found articles were used as well.

Sharing economy

The following search terms were used: sharing economy, housing, collaborative housing, cohousing, real estate. The search term 'sharing economy' was used to gain general insights on the concept of sharing economy. The term was combined with housing, collaborative housing, cohousing, and real estate, to gain an understanding of the connection between sharing economy and collaborative housing and

cohousing in present literature. References from the reference lists of the found articles were also used.

In the literature study process, terms such as peer-to-peer economy, collaborative economy and collaborative consumption were also explored to understand the differences between these concepts.

Self-organization

The following search terms were used: self-organization, housing, collaborative housing, cohousing. First, self-organization was separately studied to understand the concept. Then, self-organization was searched for combined with the terms housing, collaborative housing, or cohousing, to understand the connection between self-organization and housing research in present literature. References from the reference lists of the found articles were used as well.

Empowerment and social capital

The following search terms were used: empowerment, self-organization, housing, collaborative housing, cohousing. The original search consisted of combining the aforementioned terms, using one of the three housing terms at a time. However, there was no literature present focusing specifically on these concepts, which is why the study extended to literature regarding the built environment, planning, and community development in general. References from the reference lists of the found articles were used as well.

3.4.2 SEMI-STRUCTURED INTERVIEWS

The case study research started by conducting 6 semi-structured interviews to answer research sub-questions 1, 2 and 5. In semi-structured interviews, there is a list of questions and fairly specific topics, but the structure is not completely set in stone. This gives the interviewee some room to reply in his or her desired manner, allowing for flexibility of the answers of the interviewee (Bryman, 2012, p. 471). This was useful, because the connection this research intends to make were not yet studied, thus being able to respond to what the interviewee had to say on the specific topic could lead to interesting findings.

In total six semi-structured interviews were conducted, namely with two residents of Stad in de Maak (from different buildings), with two co-founders (as a joint extended interview), and with two employees from housing corporation Havensteder for an outside perspective. This group of interviewees provided a balanced overview of various components that were studied in this research.

The goal of the interviews was to match characteristics of sharing economy to the project, to understand barriers towards the self-organization of Stad in de Maak and to

gain insight in the bonding, bridging and linking capital of the community.

The results from the semi-structured interviews were analyzed with Atlas.ti. Atlas.ti is a software which is used for qualitative data analysis to systematically analyze concepts in this (unstructured) data by use of coding. The analyzed codes were set up beforehand, when the literature study was translated into variables. The variables were set up based on the literature study, to enable measurement of the concepts. After analysis of the data, a validation of the interview findings has been set up and sent to the interviewees.

The operationalization and variables can be found in Appendices A1 and A2, respectively. The operationalization of the conditions for self-organization can be found in Appendix B1. The interview protocols for residents, co-founders and housing corporation employees can be found in Appendices A3, A4 and A5, respectively. The interview protocols for residents and co-founders have been developed in English, the interview protocol for housing corporation employees has only been developed in Dutch. Appendix A6 shows which interview questions correspond with which variable. The used coding framework, accompanied with coding examples, can be found in Appendix A9. The set-up for the validation of the results can be found in Appendix A13.

Below the operationalization of sharing economy, self-organization and social capital is explained.

Operationalization sharing economy

For sharing economy, the goal was determining whether the cohousing project is a sharing economy. As mentioned in section 2.2, sharing economies have three characteristics: 'consumer-to-consumer interaction', 'access rather than ownership (through sharing, exchanging or renting)', and the 'use of under-utilized assets'. These characteristics were translated into five variables.

'Consumer-to-consumer interaction' has been translated into 'communication with other users'.

'Access rather than ownership' has been translated into three variables: 'the presence of sharing', 'the presence of exchanging', and 'the presence of renting'. Only one of these three variables needs to be present, but they are also not mutually exclusive.

The 'use of under-utilized assets' is operationalized by looking at the following variable: 'idleness of the asset/good without use'. This means that the sharing taking place is essential for the use of the room or good.

Furthermore, the interviewees were asked about advantages and disadvantages of the sharing (or lack of) taking place in the cohousing project. This was done in order to answer sub-question 2.

Operationalization self-organization

For self-organization, the goal was to determine whether the cohousing project relies on self-organization. As mentioned in section 2.3, self-organization has 4 main characteristics: '(a common) intrinsic motivation', 'organization through negotiation and soft leadership', 'autonomy', and 'spontaneous emergence and creativity'. Based on literature, these characteristics have been translated into variables.

Intrinsic motivation has been translated into two variables: 'free choice of being part of the activity', and 'interest or enjoyment' (Ryan & Deci, 2000). One of these two variables needs to be present to be able to speak of intrinsic motivation.

Based on Huygen et al. (2012, p. 14), 'organization through negotiation and soft leadership' has been translated into the concept of 'hierarchy'.

'Autonomy' has been translated into 'being independent from the institutional environment' (Huygen et al., 2012, p. 14).

The last characteristic, 'spontaneous emergence and creativity', has been translated into two variables: 'spontaneous development' of ideas, and 'creativity' of ideas (Huygen et al., 2012, p. 14). One of these two variables needs to present to confirm this characteristic.

Furthermore, interviewees were asked about what they thought to be barriers and enablers of Stad in de Maak. This was done in order to answer sub-question 3.

Next to the operationalization of self-organization as a concept, the conditions for self-organization have also been operationalized. The interview findings were applied to these conditions based on the variables that were set up. This operationalization can be found in Appendix B1.

Based on the literature study, six conditions for self-organization were set up. These were: '(a common) Intrinsic motivation', 'Mutual trust within and beyond the organization', 'Rules for collective use and decision-making', 'Definition of boundaries of the initiative', 'Room for initiatives', and 'Financial feasibility'.

'(a common) Intrinsic motivation' has been translated into two variables 'free choice of being part of the activity', and 'interest or enjoyment' (Ryan & Deci, 2000).

'Mutual trust within and beyond the organization' has been translated into the variables 'trust within group' and 'trust in people beyond the organization' (Huygen et al., 2012, p. 35).

'Rules for collective use and decision-making' has been translated into 'Rules for collective use' and 'Rules for decision-making' (Brandsen & Helderman, 2012).

'Definition of boundaries of the initiative' has been translated in whether there is 'collective understanding of the goal of the initiative' (Brandsen & Helderman, 2012; Huygen et al., 2012, p. 34).

'Room for initiatives' has been translated into two variables: 'available space' and 'like-minded people' (Huygen et al., 2012, p. 33-34).

'Financial feasibility' has been translated into one variable, namely a 'financially feasible business case' (Brandsen & Helderman, 2012).

Operationalization social capital

Social capital was analyzed in bonding, bridging and linking capital, as mentioned in section 2.4. To enable setting up variables, literature was analyzed to understand how bonding, bridging and linking capital can be measured.

For bonding capital, literature showed that association with others within the group, and trust in each other, is important (Larsen et al., 2004). Association can be measured by asking to what extent people know what is going one in each other's lives and if they are up-to-date about what people are doing.

For bridging capital, literature showed that communication with or connection to other, external communities is important. In the interviews, it was decided to also focus on trust and association as an extra measurement.

For linking capital, literature showed that communication with and/or connection to those with different levels of power or status is important. Again, it was decided to focus also on trust and association as an extra measurement.

Furthermore, for bonding, bridging and linking capital, the frequency and process of contact was measured, as well as the evaluation of contact.

3.4.3 CREATIVE SESSION

The second step of the research was to carry out a creative session, based on the 'integrated creative problem solving' (iCPS) approach (Buijs & Van der Meer, 2013, p. 81). This approach was developed at the Faculty of Industrial Design Engineering at the TU Delft, and based on existing creative problem solving techniques. A creative session was selected, as collaborative housing research deals with research fatigue. Many residents at Stad in de Maak are artists or designers, and thus might be interested in joining a session that focuses on creative thinking.

In a creative session, a creative facilitator will get together a group of volunteers that will use creativity techniques to solve a serious problem, posed by the problem owner (Buijs & Van der Meer, 2013, p. x). Creative sessions are suitable for open-ended problems which, contrary to close-ended problems, require solutions that are out of the box and unexpected, and of which the boundaries might change (Buijs & Van der Meer, 2013, p. 2).

You can organize creative sessions in any kind of setting, as long as you have at least the following characteristics:
- "an open problem to be solved;
- a group of volunteering participants (the so-called resource group), who are willing to invest time, knowledge and energy to solve this problem;
- a creative facilitator, who is organizing and leading the session, and is applying tools and techniques of the iCPS set of tools;
- a problem owner, the person who feels responsible for solving this particular problem;
- a time-bound project organization (the creative session and its preparation);
- other stakeholders who will be confronted with the implementation of the results."

(Buijs & Van der Meer, 2013, p. 2)

These characteristics matched with the case study.
First of all, the results of the interviews posed several open-ended problems, which interviewees also gave some solutions to, but the solutions were diverse.
Secondly, the co-founder provided an email list of possible participants. Thirdly, as researcher the role of creative facilitator could be taken. Fourthly, one of the co-founders agreed to be problem owner. Fifthly, the creative session was planned and prepared, and carried out. Finally, the results of the creative session would benefit not only the participant, but also other residents of the case study, and external parties such as the housing corporation. Before the creative session, all participants were sent an informed consent (Appendix C1), which they signed before starting the creative session.
Below, the set-up of the creative session is explained.

Set-up of the creative session
The creative session was carried out with 2 co-founders, 4 residents, 2 external design students and a PhD researcher studying cohousing. These three latter participants were selected as, according to Tassoul (2009, p. 134), external participants can bring critical questions or external knowledge to the table.
The problem owner was one of the co-founders. The initial plan was to ask one of the interviewed residents as problem owner, to ensure the problem would really be from the bottom-up and place the residents at the center. However, the interviewed residents did not have time to join the session. Thus, one of the co-founders was asked as problem owner instead, since he is also very knowledgeable of problems within the case. At the creative session, participants were asked for input on the problem statement as well, thus collecting resident input.

Together with the problem owner, the problem statement below was set up:
"There are no clear rules for using the commons, but (for example at the Pieter de Raadtstraat) they are present. The biggest problem is what will happen when the rule is broken. Rules without sanctions do not work, but defining and enforcing mild, democratic sanctions without creating a wedge in the group when sanctioning, is complicated. A flat organization in strived for, in which everyone's consent is important.
The lack of (enforcement of) clear rules complicates for example when people can use the commons, which possibly leads to less activity in the commons. When the size of the commons grows, such as in the Almondestraat, it will become increasingly hard to regulate the commons.
To summarize: the lack of usage rules for the commons and reinforcing of these rules is a problem, especially when the commons or the network grows bigger than the current situation."

The specific set-up of the creative session depends on the problem and the available time. In general, there are three phases in the creative session: problem analysis and problem definition, idea generation and idea selection, and concept development and preparation of acceptance and implementation (Tassoul, 2009, p. 26). Furthermore, the creative session used a sequence of diverging, clustering and converging (Buijs & Van der Meer, 2013, p. 10).
When setting up the creative session, it is important to use a strictly defined time schedule. The planned creative session would have a time span of 120 minutes. The time schedule below indicates the time schedule, leaving 5 minutes time as slack.

Element	Duration
Introduction	5
Briefing problem owner	5
Problem as perceived	5
Purge	10
Warming up	5
Diverging ideas	30
Break	15
Clustering ideas	15
Converging ideas	15
Acceptance finding	10
Total	**115**

1. Introduction round – entire group

All participants get the opportunity to quickly introduce themselves. The facilitator will start with the introduction round to give participants an impression of what they could say.

2. Briefing by the problem owner – problem owner

The problem owner describes the problem that he and the creative facilitator agreed on (i.e. the problem statement).

3. Problem as perceived – entire group

The problem as given is transformed into the problem as perceived (PAP): the entire group is asked what they have to add to the problem description given by the problem owner (Buijs & Van der Meer, 2013, p. 29). The problem statement is written down. There ought to be no criteria in the problem statement, and it should have one simple, concrete objective.

4. Purge – entire group

Before moving on to the creativity techniques, the purge is used to get rid of initial ideas as quickly as possible. This get the brains of the volunteers free for better ideas (Buijs & Van der Meer, 2013, p. 34). The participants write down what they think is important to reach the objective stated in the PAP. When participants have run out of ideas, everyone selects an important idea and places it one the sheet with the PAP to get an overview of aspects that are important for solving the problem.

5. Warming up – entire group

To create a smooth transition between the purge and diverging stage, a warming up is used. This warming up is intended to spark some creativity and get the participants in the right mindset (Tassoul, 2009, p. 40).

In the warming up, the group is divided into pairs. If necessary to make an even number, the creative facilitator will join. Participants get a post it and pen, stand opposite each other and have to draw one another in 10 seconds by looking straight at each other, and not looking at their paper. The drawing is given to the person the participant drew. This is repeated three times.

The group comes together again and everyone selects one of their three portraits and explains the group why they selected this portrait.

6. Diverging ideas – in 2 groups

The group is split into 2 groups. Both groups comprise of a co-founder, an external volunteer, and residents. To diverge and generate ideas, a metaphor is used as creativity technique. Creative people are at ease with metaphors, which is why Buijs & Van de Meer (2013, p.

44) propose to use metaphors to create creative ideas. The metaphor used is the one of 'dream versus nightmare'. In this analogy, a situation is presented. One of the two groups focuses on the dream: the situation runs perfectly smooth. What is needed to make that happen? Ideas are placed on a broad sheet of paper with post-its. The other group focuses on the nightmare: everything goes wrong. What is needed to make that happen? Again, ideas are placed on a broad sheet of paper with post-its. After some time, the groups switch and see if they can add to each other's ideas. The posed dream/nightmare situation is: A group of people lands on Mars. They are the first humans to arrive there and have to set up their own community. What makes this community work? Or what makes it go wrong completely?

7. Clustering – entire group

After a short break, the group comes together again. The next step is clustering. This step provides the input for the converging step. It is a bit of an in-between stage, and the techniques are not as diverse and extensive as for diverging (Buijs & Van de Meer, 2013, p. 55). The group is asked to start matching the positive and negative ideas from the diverging phase: what positive idea/aspect matches with a negative quality? Then, the group is asked to create clusters. This process will flow naturally, but the creative facilitator can help in creating specific clusters, for example based on the content of the ideas, on categories, financial aspects, and so on (Buijs & Van de Meer, 2013, p. 56). When the clustering process is completed, the group gives names to the clusters.

8. Converging – ideas in 2 or 3 groups

In the converging stage the goal is to select ideas and develop these, to come up with a few more specific ideas than the large amount of ideas generated in the diverging stage (Buijs & Van de Meer, 2013, p. 60).

The group is divided into 2 or 3 subgroups, preferably mixed up versus the earlier groups in the diverging stage. Each group selects a cluster, and starts developing ideas based on the ideas in that cluster. The groups develop 2 ideas in more detail and prepare a presentation.

9. Acceptance finding: presentations – entire group

In the acceptance finding stage, the goal is to connect the ideas from the session to the real-life context (Buijs & Van der Meer, 2013, p. 82).

The group comes back together again, and all groups quickly present their 2 ideas.

The findings are summarized by the creative facilitator, who will take all the findings and ideas home to review and analyze them.

3.4.4 COMMUNICATION TOOL TEST

With the interview results and the results of the creative session, a communication tool was developed. This tool was developed to improve the practical applicability of the research outcomes. A small test session was carried out with three residents of Stad in de Maak, specifically of Pieter de Raadtstraat 35B and 37B.

This test had two goals. First of all, the test was used to understand if the communication tool is clear and if the tool fulfills its design requirements. Secondly, input from the test session was used to reflect on the interview findings regarding the sharing economy of Stad in de Maak. This was done by recording the session and making notes. Statements of participants about topics that were addressed in the interviews were compared with statements from the interviewees to check whether they verify or falsify each other.

The test consisted of a short introduction as moderator. Then, the residents were asked to use the tool by using the tool manual (Appendix D1). During the session, photographs were taken, audio recordings were made, and written notes were made.

Before the test session, all participants were sent an informed consent (Appendix D3), which they signed before starting the test session. At the end of the test session, participants filled out a form with reflection questions, which can be found in Appendix D2.

3.5 ETHICAL CONSIDERATIONS

Universities of technology have a great impact on society, which is why ethical considerations were important whilst doing this research. The TU Delft also addresses this in its code of ethics, stating a "process of constant critical reflection on its contributions to society, its own missions and responsibilities, in light of the new problems and challenges confronting us all" (TU Delft, 2012).

Two ethical aspects were considered in this research. Firstly, the research used a case study. Participants took part in an interview, creative session and/or tool test session, for which informed consent was necessary. This means that "prospective research participants should be given as much information as might be needed to make an informed decision about whether or not they wish to participate in the study" (Bryman, 2012, p. 712). Participants signed informed consents before taking part in the research. With the informed consent, they received an information sheet with important details regarding the research. The empty informed consent sheets for the interviews, creative session and tool test session can be found in Appendices A7, A8, C1, and D3. The signed informed consent sheets are kept in the researcher's private database to ensure the participants' privacy.

Secondly, the participants' privacy was considered. Since 25 May 2018, the EU data protection rules have been reformed. Personal data of people needs to be protected and cannot be used without their consent (Regulation 2016/679/EU, 2016). All information and collected data needs to be confidential and anonymity should be ensured (Bryman, 2012, p. 453). Personal addresses of participants were collected for this research. In the data analysis, personal information has been anonymized and no other than the researcher herself had access to data that was not anonymized.

3.6 RELIABILITY & VALIDITY

When setting up a research, it is important to ensure reliability and validity. Reliability is whether an instrument can be interpreted consistently across different situations (Bryman, 2012, p. 46). Validity is whether an instrument actually measures what it sets out to measure (Bryman, 2012, p. 47).

Looking at reliability, several remarks can be made. First, semi-structured interviews were used. With interviewing, there can be a risk that the interviewer influences the interviewee with the manner the questions are formulated (Bryman, 2012, p. 471). Therefore, it was important that a clear list of topics was set up beforehand, as well as a list of questions that have been checked to ensure they are not suggestive. Moreover, analysis of the results of the semi-structured interviews can be influenced by the subjective interpretation of the researcher (Bryman, 2012, p. 405). To mitigate this, several measures were taken. First of all, codes were set up based on the literature study, operationalization and variables to guide the analysis. Next to that, the interview results were validated by sending an overview to the interviewees, together with questions. Lastly, a communication tool was developed which was tested in a session with residents to confirm findings from the interviews.

Lastly, the involvement of the moderator in the tool test session and creative session is a point of attention. The moderator is the person who runs the group session, which in this case was the researcher herself. Bryman (2012, p. 508) states that the moderator should not be intrusive and influence the session too much. Also, group effects might occur, such as people having a very strong opinion or sharing too much or too little (Bryman, 2012, p. 518). In that case, the moderator can step in to steer the group session.

Looking at validity, there is a distinction between internal and external validity. Internal validity is whether there is a good match between the researchers' observations and the developed theoretical ideas. Furthermore, it focuses on if the suggested causal relationship between two concepts is sound (Bryman, 2012, p. 47). External validity is the degree to which findings can be generalized across social settings (Bryman, 2012, p. 390).

Similar to the reliability, the internal validity can be a problem when analyzing the data from the semi-structured interviews. This analysis can be influenced by the subjective interpretation of the researcher (Bryman, 2012, p. 405). Again, this was taken into consideration by using the operationalization and codes, a validation of the interview results with the interviewees, and the development and test of a communication tool to confirm the findings.

External validity often is a problem within qualitative research, as small samples are used (Bryman, 2012, p. 390). In this research, a small sample was used as well. Since the aim of the research is to support empowerment of communities to self-organize, an optimal outcome would be to use the research beyond the case study itself. In the future, both the findings from this research and the communication tool could be tested with other cohousing initiatives to increase the external validity.

In sum, there are some remarks regarding validity and reliability. Using a small sample, and doing qualitative design-based research influenced the level of validity of the research. However, it does increase the applicability of the results, as the outcomes are based on a real-life situation and were tested by developing a communication tool.

4 INTERVIEWS

In this chapter, the results from the interviews are presented in three sections.

Firstly, the results from the interviews are presented, by dividing them into the findings regarding sharing economy, self-organization, and social capital. Section 4.2 presents the outcome of the validation of the interview results as carried out with the interviewees. Lastly, the barriers to self-organization are connected to the conditions for self-organization in section 4.3.

4.1 INTERVIEWS

The first step of this research was to carry out semi-structured interviews. In the Methods chapter (section 3.4.2) the set-up of the interviews was already elaborated on. As stated previously, the operationalization tables and interview protocols can be found in Appendices A1-A6.

In this section, a small summary of the plan of approach of the interviews will be given first. Then, the findings will be presented, starting with the findings regarding sharing economy, followed by self-organization, and concluding with social capital.

4.1.1 OVERVIEW INTERVIEWS

As mentioned, 6 semi-structured interviews were carried out. These interviews focused on the sharing economy characteristics of the Stad in de Maak initiative, on the level of self-organization, and on the social capital the Stad in de Maak community holds.

Residents	2
Resident 1	Pieter de Raadtstraat 37B
Resident 2	Bloklandstraat 190
Co-founders	2
Housing corporation	2
Housing corporation 1	Previous employee/ambassador
Housing corporation 2	Current employee/ambassador

The interviewee pool was a group of 2 residents, 2 co-founders and 2 employees of the housing corporation Havensteder. One resident was living at Pieter de Raadtstraat 37, the other resident at Bloklandstraat 190. When quoting residents, they will be referred to as 'resident 1' and 'resident 2', respectively. The co-founders will be referred to as 'co-founder 1' and 'co-founder 2'. There are no specific distinctions necessary between the two. Looking at the housing corporation employees, one interviewee was previously employed at Havensteder and was Stad in de Maak's most important ambassador for a long time. The interviewee was involved with the project from the start. This interviewee is referred to as 'housing corporation 1'. The second housing corporation interviewee, referred to as 'housing corporation 2', is currently employed at Havensteder and involved in Stad in de Maak as a project. This interviewee was not involved from the start. Together the two employees can cover the entire lifespan of Stad in de Maak.

As mentioned in section 3.4.2, the interview protocols for residents, co-founders and housing corporation employees differ, and can be found in Appendices A3, A4 and A5, respectively. These interview protocols were based on the operationalization of the variables that were found in literature. In this section, variables are elaborated on one by one to determine whether they are present or not. Quotes in the interviewees are given for support, which consent has been given for in the informed consent sheets.

For every section, the results are summarized in venn diagrams. A venn diagram is a diagram consisting of overlapping circles. Every circle represents an interviewee or a group of interviewees. Where the circles overlap, both groups of interviewees have addressed that specific topic. The venn diagrams all have three groups. For the results about sharing economy, the venn diagrams consist of the groups: 'resident 1', 'resident 2', and 'co-founders'. For the results about self-organization and social capital, the venn diagrams consist of: 'residents', 'co-founders' and 'housing corporation'. If words in the venn diagram are in bold, this means the specific topic has an ambiguous meaning in the results. This means the interviewees both addressed the topic, but their opinion differs.

4.1.2 FINDINGS SHARING ECONOMY

The first part of the interviews with the residents and co-founders focused on sharing economy. Interviewees were asked about the three main characteristics of sharing economy, to what extent Stad in de Maak and their specific living situation can be defined as a sharing economy, and about its advantages and disadvantages. The summary of the findings is presented in table 4.1.2.1, and the venn diagrams are visible in figures 4.1.2.1, 4.1.2.2 and 4.1.2.3. The complete table with findings per interviewee can be found in Appendix A10. Below, the characteristics and variables are presented one by one.

Consumer-to-consumer interaction: communication with other users

Regarding the communication with other users, residents and co-founders all agreed that this was a regular part of the sharing taking place at Stad in de Maak.

Resident 2 talked about an extra bedroom at her building, which is not rented out but used occasionally. About how among the residents they manage the process of sharing the bedroom, she stated that they simply check with each other (as roommates) and that does not give problems:

"Het is gewoon een beetje vragen in ons eigen groepje dit pand zeg maar, of hij vrij is en of er iemand kan slapen. Dat gaat wel gewoon soepel."

Resident 1 uses a similar practice in her building, but focused more on how throughout time she and her roommates learned how you can streamline the communication, calling sharing "a learning thing":
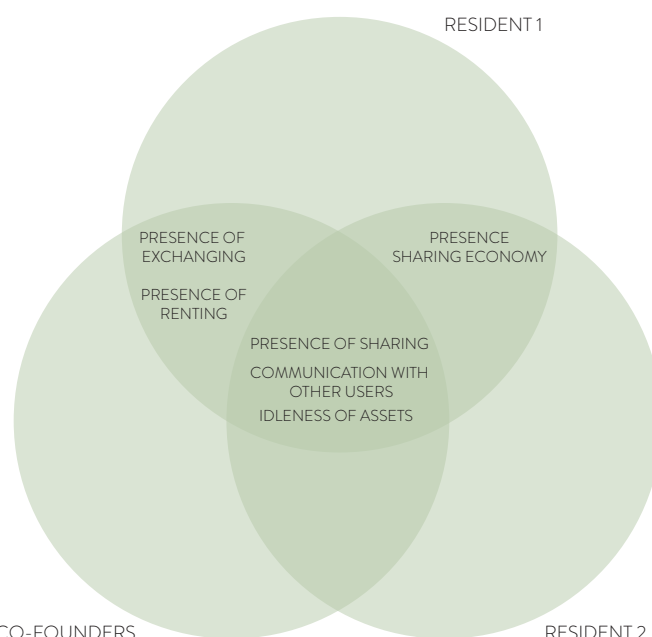
Figure 4.1.2.1. Venn diagram characteristics sharing economy. (own ill.)

"So it's just by talking. Like asking. (...) We don't formalize it too much actually but we learn a bit from previous problems, so we do things a bit more in advance. Like for example, you tend to do one thing two times and then you understand how it is easier or how it is less annoying. Just shared. I mean it's also obvious. It's a learning thing."

The co-founders were asked how they set up the use of the commons. The co-founders stressed the importance of the clean space policy, which is one of the main principles behind the commons at Stad in de Maak (Džokić & Neelen, 2018, p. 116).

Characteristic	Variable	Conclusion
Consumer-to-consumer interaction	Communication with other users	Communication is mostly face-to-face or through WhatsApp; there are some rules for using the spaces, but not strictly defined; unanimous decision-making is used.
Access rather than ownership	Presence of sharing	Most of the access to space/goods within Stad in de Maak is based on sharing.
	Presence of exchanging	Some exchanging takes place within Stad in de Maak.
	Presence of renting	Some renting takes place within Stad in de Maak.
Use of under-utilized assets	Idleness of asset/good without use	Buildings were standing idle; residents use idle spaces and idle goods (within the community or beyond); idle spaces provide opportunities for initiatives.
General information	Presence sharing economy	Yes, but one resident thinks improvements are needed, as people are not aware enough of what happens in the buildings and what is possible.
	Advantages	Saving money/time; creating and being part of a community & having a network.
	Disadvantages	Intensity of relationships; communication is complex; lack of usage of empty spaces.

Table 4.1.2.1. Results sharing economy.

Co-founder 2 stated the following about one of the users at the ground floor at the Pieter de Raadtstraat:
"Ja, maar die heeft bijvoorbeeld een clean desk policy en had ook dat je altijd toegang hebt maar."
Co-founder 1 related the usage of spaces to improvement of spaces, to keep the project affordable. In this way the residents give back to the spaces that are used, and they will not deteriorate:
"En als je hem echt structureel gebruikt, ook verbeteringen aan toevoegen. Dat is de enige manier om verbeteringen betaalbaar te houden, zelf."
Residents were asked to what extent online services were used. Message service WhatsApp was mentioned as a means of communicating. Other than that, no online services were mentioned.
Resident 1 noted a communication problem that exists among users, but also that the communication process usually flows easily as friendship is the basis of her living situation, describing the following:
"There is a lot of things that don't, of course they're not perfect because being constantly confronted with other people is a challenge to yourself."
"It comes naturally because we are friends."
With her statements, resident 1 made clear that sharing for her is not just something which is affordable, but also a way of live that is shaped around the people you share with. She indicated that it is not an individualistic way of living, as you share your day to day life with others.
Communication and consensus is also important when a possible initiative for use in the commons arises. At the Pieter de Raadtstraat, residents want a pizza oven in the commons. However, it is a large and solid piece. According to resident 1, this led to quite some discussion:
"So we have been discussing a lot about the oven, because it is a solid piece. So it will affect the space and how to position it. So a lot of questions, but still just talking to each other."
"We have had those other ideas which didn't happen because not everybody agreed for them and all those arguments should be for the good of the shared space."
Her statements indicate that ensuring everybody agrees with initiatives is very important in their building.
About the same topic, co-founder 1 mentioned that decision-making through consensus is used, but it does not always run as smoothly as they would want:
"Een soort consensus democratie maar ook dat is niet vastgelegd in formele regels. Tot nu toe. En dat gaat zeker niet van een leien dakje, maar het is niet echt goed geregeld."
The statements of the interviewees regarding consumer-to-consumer interaction show that the interviewees have quite similar experiences, and that communication surrounding sharing can be quite complex.

Access rather than ownership: presence of sharing, exchanging and/or renting

Regarding the presence of sharing, exchanging and/or renting, the interviews show that there is mainly sharing taking place at Stad in de Maak. There is some exchanging and renting taking place.

Presence of sharing

Resident 1 explained the process of sharing and facilitating a cinema at the ground floor of the Pieter de Raadtstraat. Everyone is welcome:
"Yes it's public and. It's. Without an entrance fee. It's very improvised. So we just uh take effort to put some chairs on. Then also the policy is that when the program finishes you have to turn it back as it was so the space should be more or less always empty."
This statement indicates that the sharing also comes with rules, namely leaving the space empty afterwards.
Regarding sharing in her apartment, resident 1 stated the following:
"Where we have the living room, which is shared among us, kitchen toilet uh we share common costs. And then. Like our individual unit is limited to the sleeping room."
This means that in her living situation, almost all spaces are shared.
Resident 2 explained about the spaces they share, namely an extra bedroom, a living room, kitchen and downstairs commons, and also about other ways in which they share. Her roommate had a spare bike repair tool, which she was able to have:
"En toen vertelde Luuk dat was ie er zo eentje had ie toen mocht ik er eentje hebben want die had er een over. Gewoon maar zo simpel."
Another example resident 2 gave is about the loom of a grandmother of another resident. She might borrow that loom and start weaving at the common room of the Bloklandstraat. Resident 2 illustrated with her examples that sharing makes some things more easy.

Presence of exchanging

Two forms of exchange were addressed by interviewees, namely for money, and for space.
Resident 1 elaborated that, whenever something needs to be fixed or improved with the buildings, the residents do it. Sometimes, co-founders ask residents if they want to do work in exchange for a fee. She stated:
"So we don't really hire other people to help with improving the building like if there's a problem with the roof or if we want to improve the stairs and stuff like that there's always people from within that work for it. And sometimes when we do it for the sake of Stad in de Maak we also get paid."

This relates to another of her statements, namely that she perceives that all the people living at Stad in de Maak create a skill market, meaning that whenever you need a skill, it can be found within the community.

Co-founder 1 gave another example of an exchange taking place within Stad in de Maak. At the Pieter de Raadtstraat, one resident was offered the apartment for free, in exchange for him renovating it himself. He invested money and time in the apartment to make it livable. Co-founder 1 stated:

"Guido is hier gekomen met de deal van 'nou je kunt 2 jaar zonder huur de ruimte hebben, maar je moet zelf helemaal opknappen.' (...) Hij heeft daar eigenlijk huur betaald door werkzaamheden in zijn eigen woning zou je kunnen zeggen."

Co-founder 1 stated that this was an ad hoc situation, which is exemplary of how every time sometimes needs to be developed within Stad in de Maak, they as a group search for what works and what does not work.

Presence of renting

Sometimes initiatives with a small economy are set up, such as the washing machine at the ground floor of the Pieter de Raadtstraat, or at the ground floor of the Banierstraat. At the Pieter de Raadtstraat, a washing machine has been installed. This is used by residents, but also by some neighbors, as resident 1 described:

"There is a laundry machine which we all use, but we also opened it up to the neighborhoods. There's a lot of people coming and paying very small fee."

Not only goods are rented, but also entire spaces. Co-founder 1 stated that at the Banierstraat it is possible to rent a 'restaurant' (i.e. their commons), a kitchen with tools for 24 people:

"Je kunt voor een avond de hele boel afhuren en voor veel mensen koken daar."

He elaborated that the artists working at the Banierstraat were enthusiastic about this idea, and thus they set it up.

Use of under-utilized assets: idleness of asset/good without use

The third characteristic of sharing economy is whether a good or asset stands idle when it is not used through the sharing economy. All interviewees addressed this characteristic, and one housing corporation employee. The buildings in themselves were standing idle and derelict, until Havensteder decided to join forces with Stad in de Maak to give them a temporary purpose. Furthermore, both spaces but also goods stand idle or were idle before they found a new purpose at Stad in de Maak.

Resident 1 set up a weekly cinema initiative in the commons of the Pieter de Raadtstraat. This commons is freely available, but also the chairs that are used every week were an idle good. She stated the following:

"It was also a coincidence. One of the other residents he was working in Pathé, the commercial cinema. And they have this policy that once in a while they take off some chairs and replace them with new ones. But the idea is that you cannot make profit out of these chairs. So we just said, okay give them to us, we will never sell it but we use them. So we have real cinema chairs actually."

Resident 2 mentioned the loom and the extra bedroom as an example, but also the use of the common space itself. The ground floor at the Bloklandstraat often stands idle, and resident 2 stated that two previous residents who have a printing shop at the Almondestraat sometimes work there:

"Bijvoorbeeld dat Teun en Charlotte hier beneden komen zitten als zij geen ruimte hebben voor hun print shop."

"Die ruimte kan je gewoon gebruiken want die staat hier vrij. (...) Dan kan dat gebruikt worden voor iedereen die via Stad in de Maak daar interesse in heeft zeg maar."

The examples of resident 1 and 2 demonstrate that the idleness of spaces leads to initiaves and can have various outcomes. This has been noted by co-founder 1, stating that the idleness of the spaces is one of the characteristics that leads to new initiatives, as empty space is necessary enable organizing something:

"Het is spontaan ontstaan en door de bewoners zelf vanuit en vanuit hun mogelijkheden. Je kunt wel een cinema bedenken, maar als je geen ruimte hebt, dan heeft het ook geen zin."

Co-founder 2 described the process of getting in touch with Havensteder, starting the project started and how he thought working with 2 empty properties was interesting:

"En toen heb ik in de groep gegooid: jongens ik heb 2 lege panden, slechte panden, in handen gekregen. Vinden jullie het niet interessant om daar de komende 10 jaar projecten mee te doen?"

Housing corporation 1 described a similar experience as co-founder 2, stating the following:

"We zijn eigenlijk met Stad in de Maak in aanraking gekomen, omdat we 2 panden over hadden. Die panden stonden. Die hadden we aangekocht. Die waren heel erg vervallen."

In sum, the responses show that in various ways Stad in de Maak relies on idleness of assets and goods.

Sharing economy: yes or no

At the end of the sharing economy questions, residents were explained the concept of sharing economy and, based on that, whether they would describe Stad in de Maak as a sharing economy.

Resident 1 said that she believes the concept of Stad in de Maak is a sharing economy:

"I mean yes of course. Because I think actually their basic concept is purely like a sharing economy."

Resident 2 also stated she thought it to be a sharing economy, but not on every aspect:
"Ja, ik denk dat het wel op bepaalde levels wel gebeurt, maar dat het misschien wel nog een stuk beter kan."
She stated that people are not aware (enough) of what happens in the buildings and what is possible; the things that can be shared, or how others can help you with things.

Sharing economy: advantages
Residents and co-founders were asked what they thought to be advantages of the sharing economy at Stad in de Maak. In sum, the following two advantages were noted: saving time and money, and having a community and strong network.

Saving time and money
Both residents addressed that sharing allows for savings, either in time or in money.
Resident 1 described Stad in de Maak as a 'skill market', and stated that she thinks sharing makes a lot of sense from a resources perspective:
"Like whenever I need to create something I know someone is printing it, so I don't go out but it just has these people in. I want to build something they asked me and you know things like that. So it's like a skill market or something so."
"So I think the most vibrant place is the kitchen and it makes sense to be shared because there's less waste, less energy consumption, and less objects to people."
Resident 2 stressed that Stad in de Maak makes a lot of things easier for her, such as finding the right tools or setting up an art exposition. These things would probably be expensive if she would not live within Stad in de Maak:
"En dat gaat nu dus allemaal heel makkelijk, maar als ik niet in Stad in de Maak zou wonen, dan kostte het waarschijnlijk ook heel veel geld."
Co-founder 1 stated that the original idea was to create a self-sufficient community with a small economy:
"Waar we het tegenwoordig niet zo vaak meer over hebben maar wat destijds veel meer een rol speelde... was dat op de een of andere manier te proberen in je eigen levensonderhoud te voorzien dus zeg maar een kleine economisch cirkeltje te maken waardoor je niet afhankelijk zou zijn van een uitkering of banen omdat die er toen even niet zo veel waren."
This idea touches upon affordability, and the statements of the residents can to some extent support that Stad in de Maak does help them to save money. However, Stad in de Maak is not a self-sufficient project.

Having a community and strong network
Both residents mentioned the community and network as an advantage of the sharing economy within Stad in de Maak.
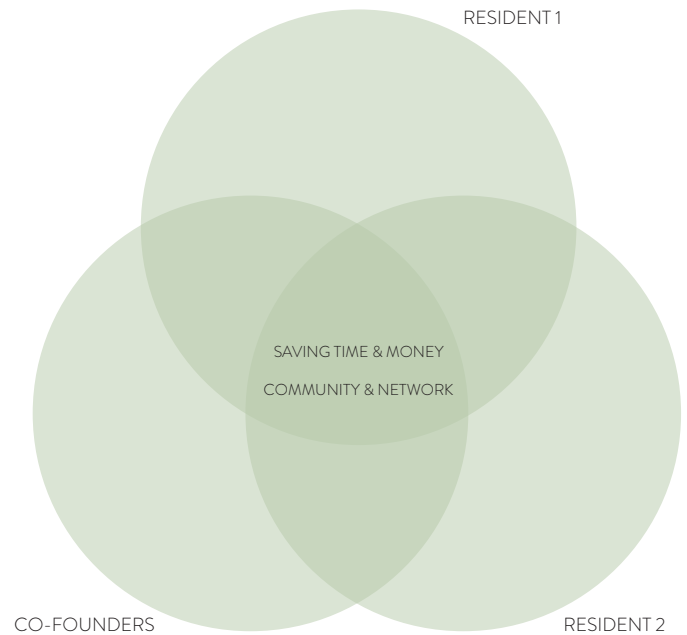
Figure 4.1.2.2. Venn diagram advantages sharing economy. (own ill.)

Resident 1 described it as personal:
"I mean it's the personal relationship actually I like."
Furthermore, she described her relationship with her roommates as a friendship.
Resident 2 stated that she believes her quality of life has increased, because you have a lot more options. The network is essential for her when she runs into problems:
"Denk dat je gewoon je leefkwaliteit ook omhoog gaat, want je hebt veel meer opties. Dat is gewoon, er gaan veel meer deuren voor je open als je echt weet wat er aan de hand is. (...) Het is een sterk netwerk."
"Dat je een enorm netwerk hebt waar je heel veel uit kan putten als je ergens mee in de knoop zit."
Co-founder 1 stated community building as an important advantage, especially towards the outside:
"Soort gemeenschap, dat we meer kunnen laten zien van kijk eens hoe belangrijk dit allemaal is."
This contrast between residents and co-founders illustrates their differing perceptions. It is the daily life of residents, which is why the community is an advantage. For the co-founders, Stad in de Maak is a business project, and the community spirit supports that business.

Sharing economy: disadvantages
Residents and co-founders were asked what they thought to be disadvantages of the sharing economy at Stad in de Maak. In sum, the following three disadvantages were noted: intense relationships, complex communication, and the lack of usage of empty spaces. However, within these disadvantages there was ambiguity in the answers of the interviewees. Some disadvantages were mentioned by several interviewees, but not for every interviewee it is perceived as a problem.

Intense relationships

Sharing spaces leads to more confrontation and intense relationships, according to the residents.

Resident 1 compared it with living alone, describing that combining working and living complexes things:

"There's more confrontation than if you're living alone."

"It's a very intense life if you share it. Especially for us that are all kind of working and living here, because this idea because of the space we have. We are freelancer most of the time so it means that 24 hours of our life is here. (…) It's very intense."

Resident 2 herself did not have any experience with complex communication, but noted that her roommates sometimes did have arguments regarding the usage of the commons. Resident 2 noted that it is very important to have clear rules if you share:

"Je moet heel erg afspraken maken om het een beetje rollende te houden."

Complex communication

The second disadvantage that was noted by resident 1 and resident 2, is complex communication. This disadvantage is close to the first disadvantage, but less focused on relationships and more on actual communication and the problems arising around that.

Resident 1 focused on how sharing a home means being involved with someone else's problems and issues:

"we have our own problems, issues and the home then becomes this kind of stage where everything clashes."

Furthermore, she elaborated that setting up a certain language for rules about sharing is hard, because no one wants to formalize things:

"It took us a long time to understand how to clean. Because our tasks to maintain a home, of course there's different tasks. And nobody wants to really formalize things so it takes a little while to set up certain language."

Resident 2 focused on other aspects of communication, namely finding the time to actually talk to each other, and the lack of willingness of people to share what they are up to within their building.

Her roommates had arguments about the usage of the commons, which according to her could also be attributed to the fact that it is hard to run into each other as everyone has a different schedule:

"Luuk heeft het een paar keer op een briefje geschreven aan de muur, en ze hebben het er ook een paar keer over gehad als ze elkaar tegen kwamen. Maar je loopt het heel vaak mis."

Also, she gave an example of an initiative in which the goal was that in every newsletter via email all Stad in de Maak buldings would give an update in one or two sentences with what they have been up to the past time. However, people did not send in sentences:

"Er zijn gewoon mensen die niet reageren, terwijl dat juist… dat zou echt handig zijn als iedereen het gevoel heeft dat ze zo een steentje kunnen bijdragen."

She thinks this is a shame; she would like to improve the knowledge of what everyone is up to in their building.

Lack of usage of the empty spaces

Thirdly, a noted disadvantage was the fact that the empty (common) spaces are not always used. Resident 2 mentioned that she dislikes emptiness and stagnation:

"En alles dat stilstaat is eigenlijk vervelend, maar wat er wel een beetje gebeurt af en toe beneden tussen de periodes dat er iemand inzit. Dan is het wel heel erg stil. Ik vind het gewoon heel fijn dat er weer iets gebeurt."

However, she also denoted that the fact that a lot of different things happen – if they happen – is an advantage of the sharing taking place at Stad in de Maak.

The co-founders also noted that emptiness or a lack of initiative could be a problem for the commons. However, the opinions on whether or not to motivate residents to organize something differ per co-founder. Some feel they should boost activity, others feel that if nothing happens, nothing happens, period. Co-founder 1 described it as following:

"Erik heeft echt zoiets van, nee dat moeten we aanjagen. Ik heb zoiets van vrije ruimte is vrije ruimte, als er niks gebeurt, dan gebeurt er maar niks. Je hebt de ruimte, als je er niks mee doet, nou jammer dan. Maar goed, daar denkt niet iedereen op dezelfde manier over."
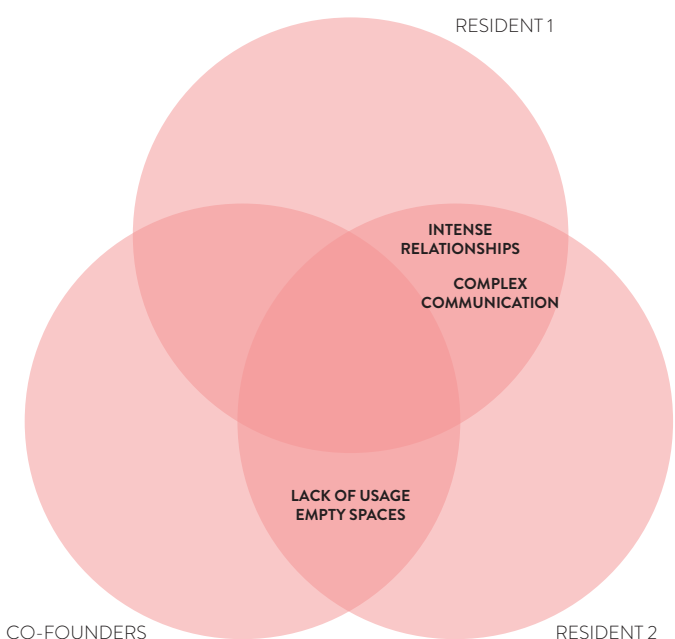

RESIDENT 1

INTENSE
RELATIONSHIPS

COMPLEX
COMMUNICATION

LACK OF USAGE
EMPTY SPACES

CO-FOUNDERS

RESIDENT 2

Figure 4.1.2.3. Venn diagram disadvantages sharing economy. (own ill.)

4.1.3 FINDINGS SELF-ORGANIZATION

The second aspect of the interviews focused on self-organization. Based on the characteristics of self-organization as found in literature, variables were set up that together can confirm whether the cohousing project is based on self-organization. These are: free choice of being part of the activity/interest or enjoyment in the activity, hierarchy, the level of independence from the institutional environment, and creativity or spontaneous development. Also, the interviewees were asked about their intrinsic motivation to check if a common intrinsic motivation can be found. Moreover, residents and co-founders were asked if they could name barriers to the development of Stad in de Maak, and aspects that could enable or have enabled Stad in de Maak.

The summary of the findings is presented in table 4.1.3.1, and the venn diagrams are visible in figures 4.1.3.1, 4.1.3.2 and 4.1.3.3. The complete table with findings per interviewee can be found in Appendix A11.
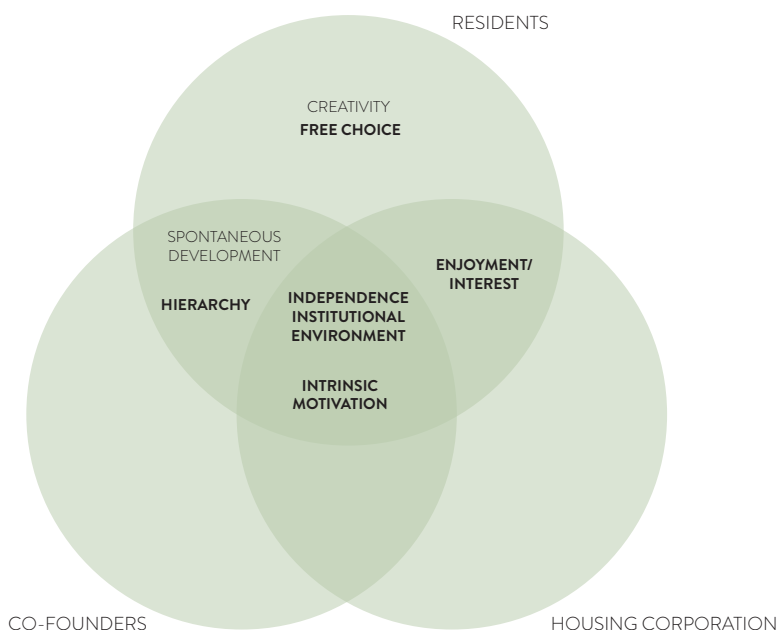
Figure 4.1.3.1. Venn diagram characteristics self-organization. (own ill.)

Characteristic	Variable	Conclusion
(a common) Intrinsic motivation	Free choice of being part of the activity	For one resident, it is free choice, for the other it is not (financial reasons/no alternative).
	Interest, enjoyment in the activity	Fun initiative; learning from others; more fun than regular renting; network makes one resident happy, other resident can feel suffocated.
Organization through negotiation and soft leadership	Hierarchy	There is no hierarchy in role or rights, but co-founders are seen as separate. Residents find it remarkable that co-founders live elsewhere. Co-founders do not want to be 'the boss'.
Autonomy	Level of independence from the institutional environment	There is dependence of Havensteder, and to some extent from the municipality. This creates uncertainty for residents. Co-founders want to acquire property, but finances are complex.
Spontaneous emergence & creativity	Creativity	Several initiatives used creativity: the Bulletin, Wasbuur, cinema and working space.
	Spontaneous development	Activities (should) happen through spontaneous development from the residents, because of the possibilities of the empty spaces.
General information	Intrinsic motivation	Motivations show some overlap. Some are political/societal, others more practical.
	Barrier	Finances, dependence institutional environment; differing motivations; lack of rules for decision-making; setting up rules for sharing; complex communication; image SidM.
	Enabler	Market situation; political situation; feasible business case; knowledge sharing inside or outside the community; contribution to the neighborhood; having self-reliant residents; joining forces (with residents or other communities); novel ideas; working with other housing corporations.

Table 4.1.3.1. Results self-organization.

(a common) Intrinsic motivation
Free choice of being part in the activity
The residents were asked whether they are part of Stad in de Maak out of free choice, or because they don't have another option. The opinion of the residents differed. Resident 1 is bound by her financial situation. She stated:
"If you tell me: you had to leave Stad in de Maak, I'm not sure if I will. Indeed if I would not live in, I would not go to the market and find it."
This illustrates that resident 1 lives at Stad in de Maak because she does not have other options. In the market she cannot find a similar way of living as Stad in de Maak. About investing money in a property together as residents, she stated:
"I barely can pay my rent so it's not something I can allow myself but I can see that it's not impossible."
Thus, she is barely able to pay her rent, and in the market she cannot find something similar. This means that she does not live at Stad in de Maak out of free choice. When resident 2 was asked whether she could leave if she wanted to, she said that she does not want to leave, because she enjoys Stad in de Maak and values the community:
"Het zou best kunnen doen maar ik wil het niet. Ik zit hier heel fijn en ik vind het netwerk heel veel waard."
Thus, she does live at Stad in de Maak out of free will.

Interest/enjoyment in the activity
Regarding enjoyment, especially resident 2 was vocal about how Stad in de Maak makes her happy. Things that contribute to her level of enjoyment are being able to share tools/resources, learning from other residents and their passions, and renting from someone you know instead of a very distant relationship:
"Maar waarschijnlijk eens per half jaar dat ik echt heel blij ben en gelukkig ben."
"Ik vind het ook heel leuk om op dinsdagavond even naar de Almondestraat te gaan en dan kom je gewoon mensen tegen die allemaal een eigen project hebben. Allemaal hun eigen passie en daar leer ik gewoon heel veel van om met hen te praten of te horen wat ze aan het doen zijn."
"Dus niet per se goedkoper, alleen het is gewoon een leuker concept dan huren van iemand die je nauwelijks kent en waar je niets aan hebt."
Resident 1 stated that living at Stad in de Maak can be suffocating:
"There are moments where things become a little bit suffocating. Because we are complex human beings I think."
Not necessarily related to self-organization, but striking was that the housing corporation employees also addressed that they like the solution Stad in de Maak

thought of. Talking about why they decided to make a deal with Stad in de Maak, housing corporation 1 stated:
"We vonden het heel leuk dat zij met deze oplossing kwamen."
Thus, enjoyment provided a motivation to start the collaboration with Stad in de Maak.

Hierarchy
The interviewees stated that there is not really a strict hierarchy within Stad in de Maak. However, the co-founders are viewed as a separate group. This is seen as a shame by the co-founders. The residents elaborated that they did not think it was a problem.
Resident 1 stated:
"We don't really have a hierarchy, but of course there are the founders."
"There's the founders (…) most of them don't live in our places so it's a bit of a weird combination, but maybe healthy because they see things differently."
Resident 2 stated that everyone has similar rights within Stad in de Maak. She stated that she is the contact person within her building, but that does not change her position in the hierarchy:
"Iedereen heeft overal evenveel recht op alleen het enige wat er gebeurt is dat ik vaak degene ben die contactpersoon is, maar dat is niet een hiërarchische keuze of plek."
With regards to the position of the co-founders, she mentioned that they definitely are an integral part of Stad in de Maak, but she does notice a hierarchy. She does not think this hierarchy is a problem.
"Ik kan me er niet aan storen, ze zijn wel degelijk onderdeel van Stad in de Maak, maar daar voel ik wel een hiërarchie in."
Also, she stated that the hierarchy is also visible in the contact with Havensteder. The co-founders are the connection between Havensteder and Stad in de Maak:
"Zij zijn wel de tussenschakel van Havensteder en Stad in de Maak dus dat is best wel een hiërarchische positie."
Co-founder 1 believes it is a pity that the co-founders are seen as the 'boss'. He stated that he (jokingly) views himself as the boss, because he does all the background operations. He stated that another co-founder is more responsible for the contact with the residents.
"Ja, wij worden dan wel helaas nog gezien als oprichters en min of meer de baas."
"Omgekeerd kennen mensen Erik ook beter, want ik ben een beetje de theoreticus, die alle dingen op de achtergrond regelt en eigenlijk stiekem ook de baas is. Dat zeg ik ook wel eigenlijk ben ik de baas."
In sum, the interviewees addressed the separation between co-founders and residents, but not all interviewees view this as problematic or as illustrative of a hierarchy.

Level of independence from the institutional environment

All interviewees addressed that Stad in de Maak is dependent from Havensteder.

According to resident 1, this can lead to stress as it creates uncertainty:

"So there is one building that we know the contract finished but somehow like in this period there you have to get it back there still was a little bit of more extension. So actually it's still going on and people are still living there. But yeah it's real, I mean the deadline is real. Whenever you see that happening, it's like, I think everybody has a sense of reflecting like what should we do not to lose them."

Resident 2 stated that the co-founders are dependent of Havensteder. Regarding the possibility of buying a property, which Stad in de Maak wishes to do, resident 2 stated that that depends on Havensteder and whether they are willing to sell property to Stad in de Maak:

"Niet echt want het heeft te maken met Havensteder, of ze het überhaupt nog willen verkopen en de mogelijkheden binnen Stad in de Maak of ze het kunnen kopen."

Furthermore, as a resident of the Bloklandstraat, resident 2 addressed that her living situation can end at any given moment as the long-term contract with Havensteder has expired and now they have a short-term lease:

"Nu hebben we een nieuw contract waarbij we een opzegtermijn van drie maanden hebben. We zitten te wachten of te hopen dat het nog heel lang duurt."

The uncertainty and temporary nature of the situation at the Bloklandstraat was also addressed by co-founder 1:

"Tijdelijk, kan elk moment afgelopen zijn (...). Een grote kans dat we over 3 maanden opeens horen van Havensteder dat we eruit moeten."

Housing corporation 1 stated that the dependence of Havensteder and specifically the lack of any rent makes Stad in de Maak a success:

"Maar dat kunnen ze natuurlijk alleen maar leveren omdat ze ook geen huur betalen."

Not only the relationship between Stad in de Maak and Havensteder is a dependent one. Stad in de Maak also is dependent of the municipality of Rotterdam and their rules regarding shared living. At the Pieter de Raadtstraat, the co-founders decided to split the apartments, which had consequences for the rules for living together, as stated by co-founder 1:

"Hier lopen wij persoonlijk tegenaan, domweg omdat we die woningen gesplitst hebben."

The co-founders stated that the rules of the municipality do not fit well with collaborative housing.

Another dependent relationship is the one between Havensteder and their higher authority. Havensteder's performance is monitored, meaning they cannot simply give Stad in de Maak a certain property or sell it to them for a lower price, if a market party would be willing to pay more. Selling properties for a higher price could provide Havensteder with the means to build more social housing, as both housing corporation employees stated. Also, Havensteder has to take the interests of the entire neighborhood into account:

"Wij worden getoetst door een autoriteit wonen, dus op die manier kijk je naar de belangen van een plek van een wijk van een buurt."

The answers of the interviewees illustrate the complexity of the dependent relationships that are at play. These can influence Stad in de Maak's long-term development, but also the day-to-day lives of residents of the Bloklandstraat, as their lease can be terminated at any moment.

Spontaneous development and creativity
Creativity

Both residents addressed that creativity functions as a basis for initiatives happening at Stad in de Maak.

Resident 1 gave two examples of creative activities. One was the Bulletin, a journal that one of the residents made for a while to keep everyone up-to-date of activities happening at Stad in de Maak:

"So she used to send this once a month printed and send it to everyone and you could also reply and many things were also left anonymously. So it's uh, it was super nice thing to do. She did like five or six."

Resident 1 also organizes a weekly cinema at the Pieter de Raadtstraat:

"Yes it's public and it's without an entrance fee. It's very improvised."

Resident 2 talked about doing do-it-yourself work in her building together with roommates. Furthermore, she mentioned that she thought that at the Pieter de Raadtstraat a lot of creative initiatives happen. There is the washing machine, cinema, and an open working space.

Spontaneous development

Residents and one co-founder stated that spontaneous development is a part of Stad in de Maak.

Resident 1 explained that things happen when residents talk to one another. She thinks this is nice, and a result of being a group:

"It's really nice. So you know when you are in a group things happen because if you just talk to people or something (...) then things happen."

Resident 2 addressed that at the Pieter de Raadtstraat she thinks there is spontaneous development, but this is lacking within her building (Bloklandstraat). She attributes this to the fact that the commons at the Pieter de Raadtstraat is open, whereas the commons at the Bloklandstraat is closed from the public:

"En dat werkt bij Pieter de Raadtstraat dus heel goed. Hier, dit pand dus wat minder beneden, omdat het gewoon een werkplaats is, dus niet per se open voor publiek."

The co-founders look at it from a more abstract level, describing how they believe the availability of free common space leads to activities. Co-founder 1 stressed that the residents take initiative, and their ability to organize for example the cinema because of the available commons:

"Het is spontaan ontstaan en door de bewoners zelf vanuit en vanuit hun mogelijkheden. Je kunt wel een cinema bedenken, maar als je geen ruimte hebt, dan heeft het ook geen zin."

Intrinsic motivation

The intrinsic motivations of residents, co-founders and housing corporation employees to take part in the project differs a bit per person, but shows some overlap. Some motivations are more political or societal, others are more practical. Comparing the motivations clarifies that for residents it is their place to live, either out of free choice or because of their financial situation, whereas co-founders and the housing corporation have more long-term, idealistic or business-focused motivations.

Resident 1 has political and practical/financial motivations, and is interested in the co-sharing model:

"First of all I cannot afford to buy a home."

"It is also very much in line with my beliefs in general, so like political beliefs."

"It's nice and also because when you're a foreigner here, there's very little possibility especially in the beginning to get access to places which means to have like spaces where you can do things. And I found one of the things that I was really interested in this model was the ground floor that is like co-shared and co-managed."

Resident 2 needed a place to live in Rotterdam, and appreciates the network as she knew no one in Rotterdam. Furthermore, she stated she is interested in the collaborative housing concept:

"Toen was het voor mij gewoon heel fijn om meteen een soort klein netwerkje te hebben, omdat ik natuurlijk niemand kende in Rotterdam, dat was een grote motivatie."

"Ik vind het ook wel interessant wat er eigenlijk gebeurt als je zo woont. Maar in principe betaal ik gewoon een vrij normale huur. Dus niet per se goedkoper, alleen het is gewoon een leuker concept dan huren van iemand die je nauwelijks kent en waar je niets aan hebt."

The co-founders elaborated that they want to provide opportunities for people with limited means, as co-founder 1 stated:

"En we vinden ook (...) dat mensen zonder geld zouden moeten kunnen participeren in zo'n project."

Furthermore, co-founder 2 stated that with the project they wanted do good for the neighborhood:

"En heel breed omschreven, iets goeds doen voor de wijk."

They also elaborated that they perceived it as an interesting way of practicing architecture, and that they question the idea that you should pay as much rent as is possible, instead of using a lot of your income for other things.

The housing corporation was motivated by the fact that Stad in de Maak presented a solution for a temporary problem, and that they presented a business case that did not follow the conventional way of doing things at Havensteder. The societal impact of Stad in de Maak's concept was not a motivation, but they did perceive it as an added benefit.

"Meer een oplossing voor het tijdelijk probleem dan dat wij nou heel erg iets wilden met gedeeld wonen en gedeelde functies. Dat was eigenlijk niet het voornaamste doel voor ons. Dat was mooi meegenomen."

"En het feit dat zij ons zeg maar een business case gaven van: wij passen wel tijdelijk op jullie panden, en je krijgt ze na 10 jaar weer beter terug. Dat ontzorgt ons natuurlijk. En je kan je ook voorstellen, Havensteder is een hele grote organisatie. Die doen alles op een standaardmanier. En dit was nou net even niet standaard."

Housing corporation 2 elaborated that Stad in de Maak can have an impact on the neighborhood and support the relationship with current residents that have to move. Also, they provide a societal benefit and help Havensteder to reach their own goal, creating an inclusive city.

"Maar omdat zij toch dichter staan bij mensen uit de wijk of mensen waar ze iets voor willen betekenen, kan je zo'n kans ook meer betekenis geven voor de stad of de straat of de buurt."

"Inclusieve Stad, iedereen zou mee moeten kunnen doen in de stad. Dat is ook het onderwerp, het maatschappelijke onderwerp waar wij als Havensteder naar kijken."

"Dus als zij een bijdrage leveren aan sociale omstandigheden of hulp bieden of in gesprek gaan met al die bewoners die het soms helemaal niet prettig vinden om te verhuizen."

Self-organization: barriers

Interviewees were asked about barriers to Stad in de Maak's self-organization. Seven barriers were found: differing motivations, complex communication, the dependence from the institutional environment, setting up rules for sharing, the lack of rules/regulations for decision-making, finances, and the image of Stad in de Maak.

Differing motivations

Resident 2 addressed differing motivations as a barrier in two ways. First of all, she noted that the difference in motivation and urgency creates a gap between the residents and co-founders:

"Dat vind ik altijd een beetje grappig want voor hun is het eigenlijk een baan terwijl het voor ons echt leven is. Dus daarvan denk ik altijd wel, dat is wel een beetje gek."

Next to that, she stated that not everyone realizes that everyone can help and do his or her own duty to support the project. She gave the example of a regular mailing in which all buildings would give an update in one or two sentences, stating what's new within their building. However, people did not send the two sentences and the mailing did not work:

"Dat zou echt handig zijn, als iedereen het gevoel heeft dat ze zo een steentje kunnen bijdragen en
dat het niet er net zo goed niet in kan staan."

Furthermore, she gave an example of how her roommates are not aware of a weekly supper event happening at another Stad in de Maak buildings, whereas everyone is welcome there:

"Want ik kom daar nu omdat ik dat hoor van mijn klasgenoten eigenlijk, die er wonen. Maar bijvoorbeeld Ingmar of Daphne of Luuk die zijn er eigenlijk helemaal niet van op de hoogte dat dat iedere dinsdag gebeurt en dat iedereen welkom is."

Complex communication

Communication issues, as have been mentioned before already, were noted as a problem within Stad in de Maak. For one resident, it is about finding a language and communicating, for the other resident, it is about knowledge sharing and being up-to-date of what happens at Stad in de Maak. Resident 1 described that there is limited communication with other buildings, sometimes because of various lifestyles. Furthermore, finding a common language is hard:

"It's been one year and I don't see one person from the other building you know."

"But then with the others, we try to organize events where everybody can come once in a while but it's quite hard because people have really different lifestyles and engagements."

"Finding the right language, a common language, is a challenge."
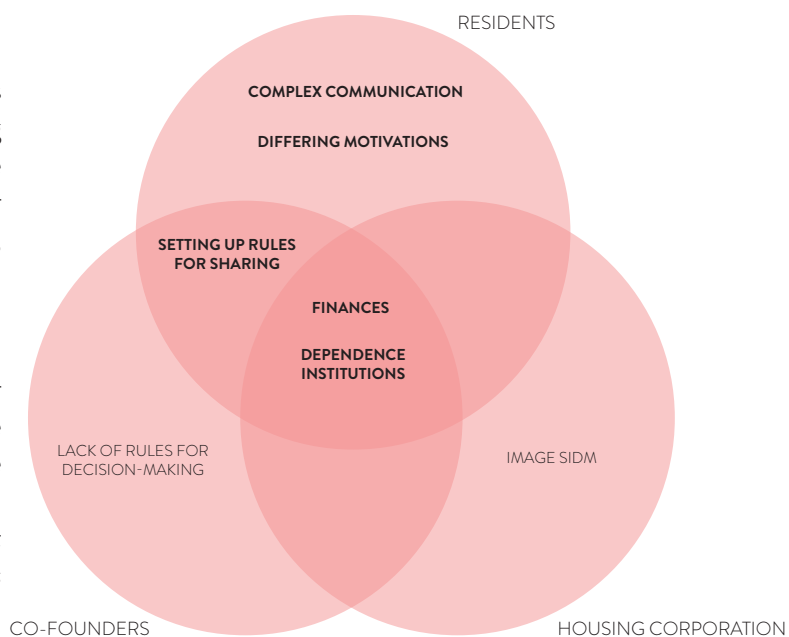
Figure 4.1.3.2. Venn diagram barriers self-organization. (own ill.)

Resident 2 detailed about sharing among buildings what is happening at the Stad in de Maak buildings. Residents do not know that at the Almondestraat there is a weekly supper event, whereas everyone is welcome there:

"Want ik kom daar nu omdat ik dat hoor van mijn klasgenoten eigenlijk, die er wonen. Maar bijvoorbeeld Ingmar of Daphne of Luuk die zijn er eigenlijk helemaal niet van op de hoogte dat dat iedere dinsdag gebeurt en dat iedereen welkom is."

Dependence from the institutional environment

Dependence from the institutional environment was again mentioned as a problem by all interviewees.

Housing corporation 1 noted that money in the end has a decisive role, and that they have to take several perspective into account when making a decision, not only societal perspective:

"Omdat op dat moment geld toch een doorslaggevende rol toch had."

"Je moet als corporatie een besluit, vind ik, vanuit verschillende perspectieven nemen."

This was confirmed by housing corporation 2, who stated that Havensteder is being checked by higher authorities and should be able to motivate their decisions to work with Stad in de Maak:

"Als wij hier een notitie zouden maken waarin staat dat zij maar een andere prijs betalen, zijn er altijd controles die zeggen 'ja waarom dan?'. Dus dat zou je dondersgoed moeten kunnen motiveren."

As mentioned, the co-founders struggle with municipal rules and regulations. Co-founder 1 stated that the municipal policy is not supportive of Stad in de Maak:

"Gemeenteraadsleden no problem, maar het beleid is nog steeds... nog steeds niet zodanig dat wij daar ook maar iets te zoeken hebben."

Setting up rules for sharing

Setting up rules for sharing can be a problem among residents, and has a practical dimension. Resident 1 describes it has an impact on day-to-day activities such as cleaning:

 "We don't have a structure. (...) And cleaning is really important I think that's something that needs to be discussed."
She connected this to coming from various cultures and not wanting to be disrespectful or create a hierarchy:
"And also trying to know your limits: how to not be disrespectful, because there's a lot of cultures and you're trying not to be pushing people because they can be hurt."

The lack of rules for decision-making

Another barrier to self-organization is the lack of rules and regulations regarding decision-making. This lack of rules for decision-making leads to irritation among residents. Co-founder 1 described it as being too informal and ad hoc:
"Heel veel dingen worden echt wel collectief besloten en niet formeel collectief van er is een algemene vergadering besluit dat. Maar het gaat nog steeds allemaal heel erg informeel en tussen de bedrijven door."

Finances

Finances were also noted as a barrier, in several dimensions, by a resident, co-founder and a housing corporation employee. Resident 1 stated that in order for things to happen, money should be invested. But it is a temporary project, so investing money might not be a good idea as it is a short-term investment:
"So this means that uh because in order to do some stuff they need to invest a lot of money. And also because we are staying here temporarily so there's not an idea to do that also."
Co-founder 1 stated that the restrictions and goals Stad in de Maak sets for themselves make the financial feasibility more complicated. Wanting a common space is more

expensive. In sum, it means that only the most dilapidated properties are available to Stad in de Maak:
"We leggen ons zelf natuurlijk ook wel allerlei restricties op en wat betreft die betaalbaarheid en daarna ook nog eens collectieve ruimte erin. Waardoor we eigenlijk alleen maar, dat lukt alleen maar als we bagger kopen."
Housing corporation 2 stated that he believes Stad in de Maak focuses more on societal goals than a feasible business case:
"Wat ik zelf soms het idee heb is dat, en dat gaat Pension Almonde bewijzen, is dat zij minder gefocust zijn op een goede business case dus dat zij meer hun sociale doelstellingen nastreven."
This is in line with the co-founder stating that their commons make the financial feasibility more complex.

Image Stad in de Maak

Lastly, both housing corporation employee noted that the image of Stad in de Maak might be a barrier.
Housing corporation 1 stated that Stad in de Maak could work on their image towards the housing corporation, hinting towards how co-founders present themselves:
"Je moet ook rekeninghouden met je imago."
Imagery was also mentioned by housing corporation 2. Howeever, he did not focus on presentation, but on being a trustworthy business partner. He stated that he got the impression that Stad in de Maak quickly turns towards Havensteder when their financial situation gets difficult. He hopes that with the development of the Almondestraat this will change:
"Dus bij Pension Almonde is het wel van belang dat zij blijven volgen: hoe zorgen we ervoor dat die opbrengsten zo zijn dat het allemaal positief door kan gaan en als we een tegenvaller zien in de opbrengsten, dat zij dan niet automatisch - dat gevoel heb ik soms - niet automatisch weer met enigszins natte ogen naar de corporatie kijken. Zovan, het is financieel heel erg moeilijk."

Self-organization: enablers

Nine enablers of self-organization were found in the interviews: the political situation, knowledge sharing (within the community or beyond), having self-reliant residents, working with other housing corporations, joining forces, the novel ideas of Stad in de Maak, the market situation, the contribution to the neighborhood, and a feasible business case.

In the interview analysis, enablers and barriers were sometimes hard to distinguish. Enablers sometimes followed from barriers or problems that interviewees noted, and they presented a solution for improving or dealing with this. Thus, enablers are mostly things that could help Stad in de Maak in the future.

Political situation

Resident 1 stated that the political situation is an enabler, and that she believes Stad in de Maak could send a signal to politicians:

"I think that going for a permanent building would be a good solution because apparently it's not just enough to occupy these spaces for a short period, because in a larger scale you don't really make a stand."

This statement is in line with the idealistic approach of resident 1 towards Stad in de Maak. However, it is not clear whether Stad in de Maak does actually make a stand regarding local politics.

Knowledge sharing

According to the residents, knowledge sharing could be important to enable self-organization. However, they differ in opinions on how this knowledge sharing should take place. Resident 2 focuses on knowledge sharing on the inside, thus knowledge sharing with neighbors. Resident 1 focuses on knowledge sharing with other collaborative housing communities, and learning from each other in that process.

Resident 2 was also vocal about her nuisances regarding knowledge sharing. She mentioned that she felt it could be improved, and if it would, there would be more opportunity for growth within Stad in de Maak:

"Dat je in een email in twee zinnen, letterlijk hoefde maar twee zinnen te zijn, zeggen waar je mee bezig was in je pand en dan iets van nieuws."

"Je wel echt eerst weten wat je aan elkaar hebt, als je daar niet helemaal van op de hoogte bent, dan kan er moeilijk iets groeien."

Knowledge sharing with other collaborative housing communities is also perceived as an enabler. As benefit of a meeting with another collaborative housing project in Brussels, resident 1 stated:

"I think it would be just pure knowledge sharing and experience."
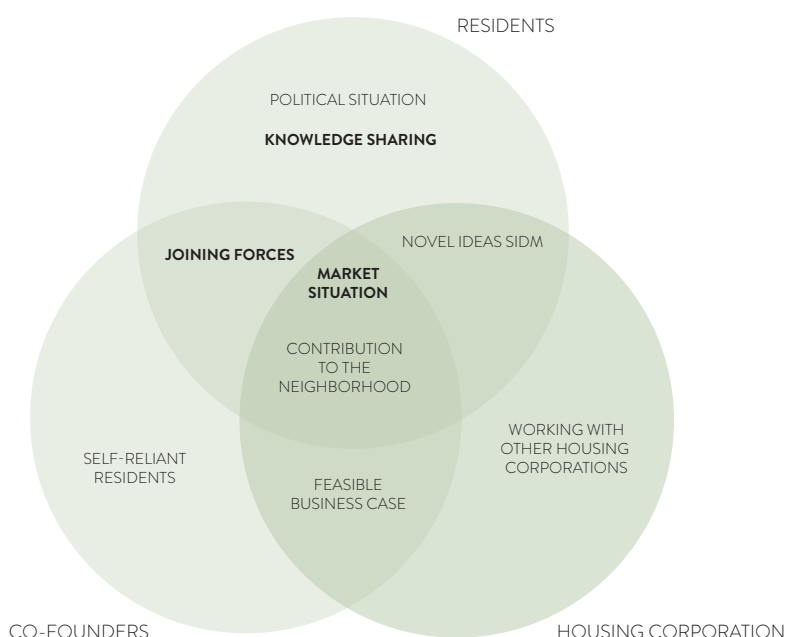
Figure 4.1.3.3. Venn diagram enablers self-organization. (own ill.)

Self-reliant residents

Talking about the commons and whether something happens in these spaces or not, co-founder 1 elaborated that self-reliant residents are necessary for a sharing model like Stad in de Maak to work. He stated that the relatively high number of artists and designers living at Stad in de Maak makes this process easier, as he believes they are more familiar with being self-reliant and organizing by themselves.

"Het zou zichzelf moeten organiseren, soms gaat dat goed, de kunstenaars zijn dat van zichzelf al gewend."

Co-founder 1 also stated that he experienced that initiatives that involved the residents have a higher chance of sticking around. An friend outside of Stad in de Maak set up a great project according to him, but the result was not long term. Initiatives within Stad in de Maak, with residents involved, stuck around more often:

"Een vriend van ons heeft een tocht door de stad georganiseerd wat voor de verbeelding heel helder, fantastisch was. Maar dat heeft geen duurzaam resultaat opgeleverd."

"Bijna alles waar bewoners, en wij, bij betrokken waren, heeft uiteindelijk vervolg gekregen."

These examples illustrate that the organization most likely revolves around the motivation and contribution of residents.

Working with other housing corporations

Both housing corporation employees addressed that they believe it would be a good idea if Stad in de Maak would start working together with other housing corporations than only Havensteder. This is a different solution than the co-founders propose, which is acquiring property together through the VrijCoop syndicate.

Housing corporation 1 stated that it would be good if they would work with another housing corporation:
"Het zou wel goed zijn voor hun als ze met een andere corporatie ook wat zouden gaan doen."
Housing corporation 2 proposed Woonstad, a corporation also present in the area, as a possible second partner of Stad in de Maak. He thinks working with Woonstad could help Stad in de Maak become more independent:
"Wat volgens mij zou kunnen helpen is als zij behalve Havensteder kijken wat ze nog meer kunnen doen met een Woonstad. Ze hangen nu een beetje aan de samenwerking met ons eigen locatie dus zijn daardoor wellicht ook een beetje afhankelijk. Ik weet niet wat ze nog meer doen dan met ons hoor. Er zit een bepaalde afhankelijkheid van hun naar Havensteder toe. Dat zouden ze moeten proberen te doorbreken."

Joining forces
As a possible solution to the dependent position of Stad in de Maak, both residents and co-founders proposed joining forces as a solution. However, for resident this would mean joining forces among the, and for co-founders it would mean joining forces through the VrijCoop syndicate.
Both residents stated that joining forces to buy a property could be a possibility. Resident 1 stated:
"Like you don't have to have so much money, but at the same time once you put it all together don't lose so much."
However, resident 1 did address that she is actually not financially able to join forces, as she can barely make rent. Resident 2 called it joining forces, which can be a result of having a stronger network with more knowledge sharing:
"Dan kan je samen gaan werken en dan heb je weer sterker netwerk, wat extra krachten."
"Krachten bundelen, dus je koopkracht bundelen denk ik echt."
When asked whether resident 2 discussed this with the co-founders, she said that she had not taken it up with them. Co-founder 1 also spoke of joining forces, but through the VrijCoop syndicate.

Having novel ideas
Within the collaboration between Stad in de Maak and Havensteder, both employees of Havensteder mentioned that they think the novel ideas Stad in de Maak presents are positive.
Housing corporation 1 enjoyed the unconventional way of thinking of Stad in de Maak. He stated that Stad in de Maak inspired him and that he thinks that Stad in de Maak can develop accordingly to what the market calls for because they are entrepreneurs.
"Ik werd er ook gewoon door geïnspireerd, ik werd er ook wakker door gehouden."

"Zij zullen misschien zich ook weer mee ontwikkelen met wat de vragen zouden kunnen zijn weet je wel. Daar zijn ze natuurlijk ook wel ondernemers voor. Op een bepaalde manier zijn het natuurlijk wel ondernemers. Sterker nog, het zijn ondernemers."
Housing corporation 2 described it as positive that Stad in de Maak is very enthusiastic:
"Positief dat ze heel enthousiast zijn met die dingen, dus dat vind ik mooi. Niets lijkt te gek."

Market situation
Resident 1 was vocal about how the market situation has a lot of influence on Stad in de Maak, as they are a result of the market:
"So Stad in de Maak tries to be independent from the market, but actually it's the main force I think and the main threat."
"Minimize all the outside forces because if the market is actually the main force then if that's your property then you're just free to go and just you know what I mean."
This was also described by co-founder 1, who noted vacant offices as an opportunity for initiatives:
"Toen had je ook, zo midden in die periode dat al die kantoren leeg waren, ja daar had je heel veel initiatieven daaromheen."
Thus, the market situation presented the conditions for Stad in de Maak to come into being, and now could enable or disable the plan to acquire own property.

Contribution the neighborhood
The interviewees stated that having a contribution to the neighborhood or being essential in the neighborhood is very important for Stad in de Maak.
About the help and resources Stad in de Maak makes openly accessible for neighbors, such as the laundromat at the Pieter de Raadtstraat, resident 2 stated:
"Ik denk dat dat gewoon onmisbaar is in een stad."
Resident 1 stated she wants to contribute to a diverse neighborhood with resources available and she explained how Stad in de Maak contributes to that:
"I think it really helps a neighborhood to have more diversity and become more alive. You know, when we have the cinema everybody's out doing some beer and laundry's always open and Guido works in the woodwork shop so you see things happening you know."
Co-founder 2 explained that doing something good for the area was one of the starting goals of the collaboration of Stad in de Maak and Havensteder, next to dealing with the derelict properties:
"Waar we geen huur voor hoefden te betalen. Waar we de verantwoordelijkheid hadden voor het beheer. En heel breed omschreven, iets goeds doen voor de wijk."

Housing corporation 1 used the laundromat as an example of how he thinks Stad in de Maak contributed to the area and how it exceeded his expectations:

"Een klein voorbeeld van die wasmachine die dan toch door veel buurtbewoners wordt gebruikt. Ik denk dat ze daar best wel meer aan de woonkwaliteit in zo'n straat hebben bijgedragen dan ik misschien vooraf had verwacht."

Housing corporation 2 stated he was curious to see what the added value is of the commons at the Almondestraat for the neighborhood:

"Maar ik ben wel benieuwd naar die gemeenschappelijke ruimte of die als meerwaarde door de buurt wordt gezien want dat zou je wel willen."

The responses of the interviewees show that this connection with the neighborhood was a starting point, but is still an important aspect of Stad in de Maak today. It is also still relevant for the relationship with Havensteder today, as housing corporation 2 is still curious to see what the added value of the commons of the Almondestraat is.

Feasible business case

Improving the financial conditions is another enabler for Stad in de Maak.

This could improve the level of trust with Havensteder, as housing corporation 2 elaborated on. He also stated that Stad in de Maak could try to expand the financial model they use at the Almondestraat to become a real financial model:

"Omdat ze nu ook willen onderzoeken of zo'n model echt beter uitgewerkt kan worden als een businessmodel wat je vaak in kan zetten."

According to co-founder 1, originally Stad in de Maak was set up to work as a micro-economy. It does not work like that right now, but that does not mean that it is impossible, as it for example already works like that in the Banierstraat:

"Zover is het op hele grote schaal niet gekomen, maar bij de Banierstraat gebeurt het wel, maar dan hebben ze het in het pand zelf geregeld."

4.1.4 FINDINGS SOCIAL CAPITAL

The third aspect of the interviews focused on the social capital of Stad in de Maak in the form of bonding, bridging and linking capital. According to literature, the level of association and the level of trust are variables that can indicate the level of bonding, bridging or linking capital. Interviewees were also asked about the frequency of the contact. The interviews showed that interviewees often described the communication process when asked about frequency, and made statements about how they evaluated the communication.

The summary of the findings is presented in table 4.1.4.1, and the venn diagrams are visible in figures 4.1.4.2, 4.1.4.3, 4.1.4.4, and 4.1.4.5. The complete table with findings per interviewee can be found in Appendix A12. The communication findings have also been translated into a communication network which can be found at the end of this chapter (figure 4.1.4.1).
Below, bonding, bridging and linking capital are presented. Bonding capital has been split into two aspects, between the residents, and between the residents and the co-founders, as the interviewees stated that there is a distinction between residents and co-founders.

Characteristic	Variable	Conclusion
Bonding among residents	Association	Knowledge sharing could be better; association depends on lifestyle; identified as friends.
	Trust	There is trust, but it depends on the person how much.
	Frequency & process	Frequent communication; regular meetings with all residents might be good.
	Evaluation	Relationships can be intense, but are enjoyed; there are people you like and dislike.
Bonding between co-founders and residents	Association	Co-founders provide snowflakes of information.
	Trust	There is a level of trust.
	Frequency & process	Communication whenever's needed; co-founders are seen as separate.
	Evaluation	No fixed process; there is an open and personal relationship; possibly strange the co-founders are not resident
Bridging	Association	Co-founders have the most connections with other communities. Can be useful for learning (knowledge and experience sharing); low-key relationship with neighbors, dependent on the building.
	Trust	There is trust, but could be improved.
	Frequency & process	Contact at events from SidM or on the street.
	Evaluation	Contact can be useful, might be improved; positive relationship with the neighbors.
Linking	Association	Co-founders try to stay on top of what Havensteder is up to; residents gain information on the relationship through the co-founders. Havensteder knows to some extent what Stad in de Maak is up to (e.g. at Almondestraat), but not for every property.
	Frequency & process	Havensteder trusts the co-founders, but is unsure of the financial feasibility of their plans; co-founders are dependent
	Process	No contact between residents and Havensteder; perceived as an informal process by Havensteder. Previously no regularity in meetings, now regular evaluation meetings for Almondestraat
	Evaluation	SidM has to stay on top of Havensteder and keep the contact and housing project going; other way of thinking is enjoyed by Havensteder; resident perceives the relationship between co-founders and Havensteder as fragile.

Table 4.1.4.1. Results social capital.

Bonding capital among residents

In general, residents were positive about the relationships with other residents.

The level of association differs a lot per person and how close the relationship is. From roommates, residents 1 and 2 stated that you often know what the other is doing, but it depends on how often you see each other. Thus, the intensity in the relationship differs per resident.

Resident 1 stated:

"Especially in this building, yeah. Most of the times. Yeah. To some general knowledge yeah what everyone is up to or doing."

Resident 2 addressed that she thinks it is valuable to have regular meetings with all buildings together to discuss what everyone is up to in their building, know what everybody looks like, and so on:

"We moeten dus gewoon, eigenlijk moet je gewoon meetings hebben, in ieder geval één keer in het half jaar ofzo, dat je iedereen ziet. Het hoeft echt niet iedere week te zijn, maar dat je gewoon weet wat er speelt, wie er is en hoe iedereen eruit ziet. Ik denk dat dat dus echt heel belangrijk is."

Resident 2 stated that she believes learning about each other is very valuable:

"Allemaal hun eigen passie en daar leer ik gewoon heel veel van om met hen te praten of te horen wat ze aan het doen zijn."

Resident 2 stated that the contact with other buildings used to be limited, but has become stronger since the Almondestraat has become part of Stad in de Maak.

Resident 1 stated that it is hard to organize meetings with other buildings, because everybody has different lifestyles and engagements.

Looking at the evaluation of the relationships, both residents addressed that it differs per person what your relationship is like, because you have people you like more and you like less. Resident 2 described it as similar to being in school:

"Dat is gewoon steady, je hebt natuurlijk mensen die elkaar niet per se heel erg mogen maar dat hoort er gewoon bij. Net als in een klas ofzo."

Resident 1 addressed that it can be a constant challenge and can become suffocating:

"There is a lot of things that don't, of course they're not perfect because being constantly confronted with other people is a challenge to yourself."

"I think there are moments where things become a little bit suffocating. Because we are complex human beings I think."

When asked how she deals with these suffocating situations, she stated that she talks about it.

Lastly, regarding trust, the residents were both positive about it. Resident 2 was vocal about that she believes trust is normal, and had a hiccup with a roommate when
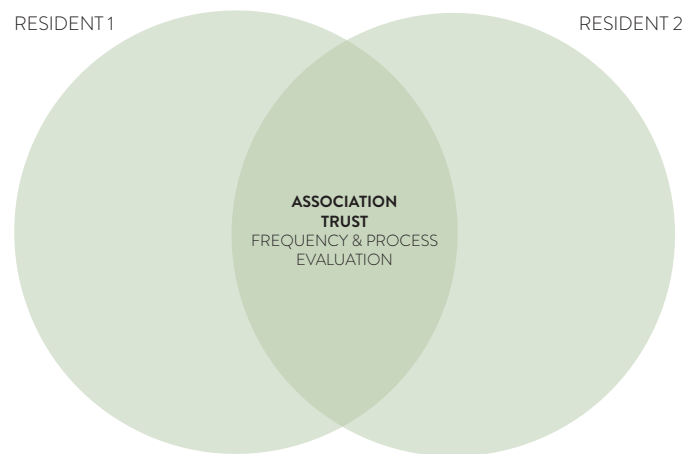
Figure 4.1.4.2. Venn diagram bonding capital. (own ill.)

the roommate had another perception of trust than she had. She described her confusion:

"Dat ik dacht, huh, maar dat is toch heel vanzelfsprekend dat je elkaar gewoon vertrouwt."

Other than that, the interviewees were positive about the trust with their roommates/other residents.

In sum, it can be stated that the level of trust and association might be improved, but findings on this differ per interviewee.

Bonding capital between residents and co-founders

The relationship between the residents and co-founders is perceived as positive, by residents and co-founders alike. Resident 1 described the relationship as personal:

"I think it's great. No I don't just say it because I have to say it. But I mean they're nice people, they're open. They try to be as much in contact with us as possible. I mean I'd say it's just like it's a personal relationship."
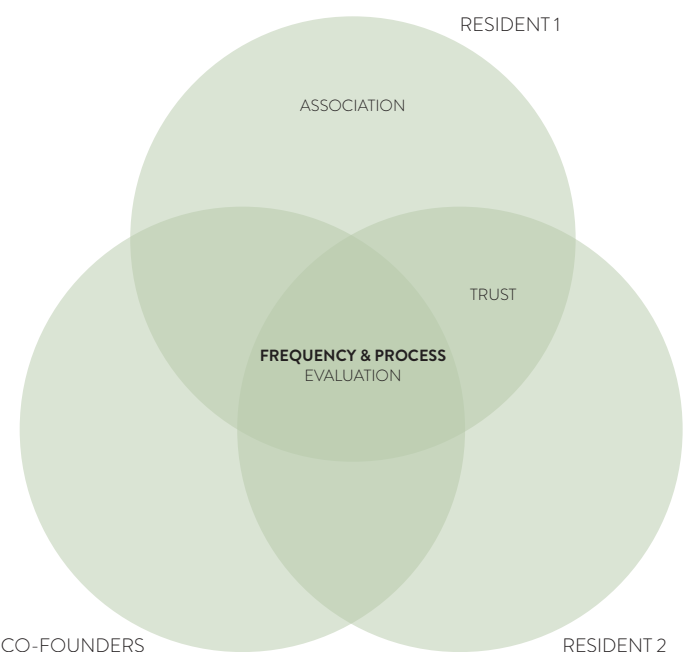
Figure 4.1.4.3. Venn diagram bonding capital with co-founders. (own ill.)

Also, she told how the co-founders asked them to do some work at another Stad in de Maak building:

"I've worked with Erik and Piet. So when the Almondestraat project came and they needed to clean it up, they didn't ask for workers, but they asked us like okay guys and there's this amount of money available."

Regarding association and knowing what they are up to, resident 2 described information she received as 'snowflakes'. She would like to know more about the relationship with Havensteder and the projects they are working on, but she understands that it is a precarious and fragile relationship. Resident 2 also described how she has a more close relationship with the two co-founders that are always in the Netherlands. Two of the co-founders also live abroad part of the time:

"Dus wanneer ze iets moeten weten of wanneer wij iets moeten weten dan ben ik meestal degene die Erik of Piet contact en dat is weer omdat Marc en Ana vaak weg zijn. Automatisch neig ik dan naar Piet of Erik en andersom neigen zij naar mij of Luuk."

This has been confirmed by co-founder 1:

"Ja, door hun afstand letterlijk fysieke afstand zijn ze (i.e. Marc and Ana) er lang niet altijd."

Another thing all the interviewees described was the separation between the co-founders and residents, which also has been touched upon in section 4.1.3 regarding hierarchy. The co-founders are the ones in control. Co-founder stated that he describes himself as the boss, and another co-founder as the people manager. However, they say that as a joke, with the intent of residents responding to it:

"Erik is the people manager, ik ben de rest, dat zeggen we altijd gekscherend met de bedoeling van: kom daartegen in opstand."

This separation is also mentioned by resident 1 and resident 2:

"There's the founders which, because most of them don't live in our places so it's a bit of a weird combination, but maybe healthy because they see things differently." (R 1)

"Zij zijn wel deel van alle bewoners denk ik. Maar ja zij wonen niet in de Stad in de Maak. Dat vind ik altijd een beetje grappig want voor hun is het eigenlijk een baan terwijl het voor ons echt leven is. Dus daarvan denk ik altijd wel, dat is wel een beetje gek. Want je distantieert jezelf wel van de groep daardoor." (R 2)

Co-founder 1 described that he thinks it is a pity the co-founders are seen as a separate group. Also, he worries that they might be essential for Stad in de Maak. He wonders what will happen when they (the co-founders) all suddenly have to quit.

"Ik weet niet wat er zou gebeuren als Erik en ik morgen ineens zouden weglopen hè. Geen idee, dat is natuurlijk stom hiervan, we roepen zelf altijd je moet jezelf misbaar maken. Dat als je inderdaad weg gaat. Maar heb helaas vaak meegemaakt dat ik onmisbaar bleek, terwijl ik dat helemaal niet zo ervaren had."

Regarding trust, both resident 1 and resident 2 state that they trust the co-founders and believe others trust them as well. However, resident 2 stated that one of the reasons for the high level of trust is also because the co-founders are careful with promises, as the relationship with Havensteder is complex and precarious:

"There's a lot of trust here and with the other residents." (R 1)

"Jahoor, ik kan ze wel vertrouwen, maar dat is ook omdat ze natuurlijk wel voorzichtig zijn met beloftes." (R 2)

In conclusion, there is a separation between residents and co-founders, which is not necessarily a problem but the co-founders thinks this is a shame, and one residents described it as 'odd'.

Bridging capital

The bridging capital can be split into two tiers: the communication with neighbors, and the communication with other housing communities.

Neighbors

The communication with neighbors differs per Stad in de Maak building, as every building has their own street/ neighborhood. About the activities in their commons and whether neighbors engage, resident 1 stated:

"It's very targeted because I mean our neighborhood is more like a residential family-based. So nobody on Mondays want to watch an independent movie and they just can take care of their kids. But they're kind and all, but nothing really practically engaging."
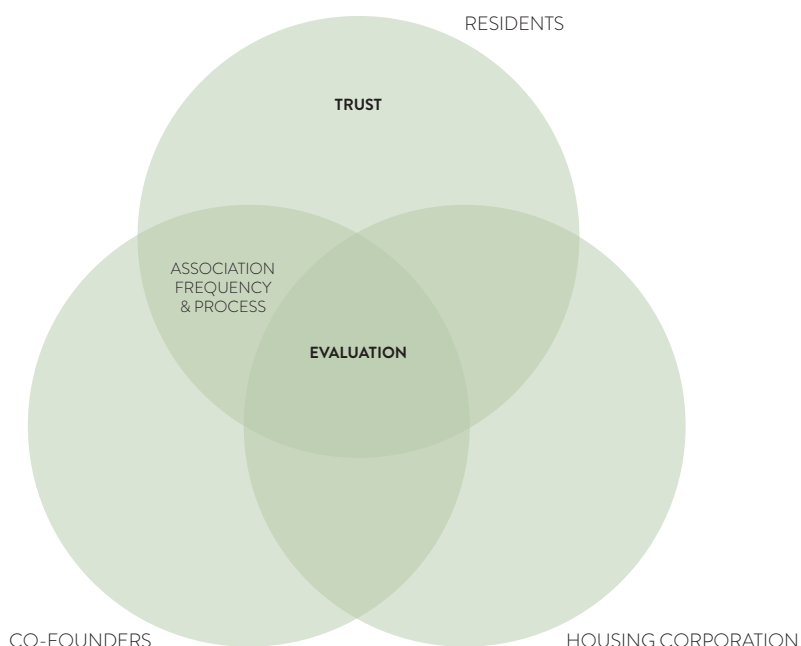

Figure 4.1.4.4. Venn diagram bridging capital. (own ill.)

Co-founder 1, who shared the building with resident 1 (at Pieter de Raadtstraat) stated something similar:
"We hebben nooit problemen met de buren, dus dat is al heel wat. We hebben communicatiemiddelen. Ik wil niet zeggen dat ze dat de deur plat lopen."
He stated that the relationship is good, but not very close. He stated that some neighbors use the washing machine in the commons of the Pieter de Raadtstraat, and that at the Banierstraat a garden outside has been created to make contact with the neighbors. Initiatives in the commons might thus help to build a relationship with neighbors. Resident 2 described that the relationship with neighbors is distant, and consists of greeting each other, the usual way of contact in a city according to her. She thinks that is a pity:
"Ik ken een paar mensen, die zeg je gedag, maar dat is een beetje zoals iedereen die in de stad woont. Er is niet echt buurtcontact hier eerlijk gezegd, vind ik wel jammer."
One of the reasons for this distant contact is the closed common spaces at the ground floor of her building, the Bloklandstraat. Her roommate likes to keep the windows and curtains closed, as he has expensive machinery in the commons. He is distrustful of neighbors, and she thinks that could change. According to her, there is potential to create more activity if their commons would be more open, also because their building is on the regular route of a lot of people:
"Een raam open hebben en misschien wekt het nieuwsgierigheid, dat hoop je dan, dat je een beetje kan kletsen. Je moet gewoon de ramen open zetten en leuke dingen gaan doen. En dan krijg je vanzelf wel mensen die het interessant vinden denk ik. Het is natuurlijk een vaste route voor veel mensen in zo'n straat."
Housing corporation 2 addressed that he would like to research whether the neighborhood indeed benefits from Stad in de Maak's presence and its commons, as that is one of the goals of Stad in de Maak:
"Maar ik ben wel benieuwd naar die gemeenschappelijke ruimte of die als meerwaarde door de buurt wordt gezien want dat zou je wel willen."

Other collaborative housing communities
Residents and co-founders also elaborated on the relationship with other collaborative housing communities. Resident 1 stated that she personally does not have contact with other collaborative housing communities, apart from one meeting with a community from Brussels. She did note possible positive benefits of knowledge sharing and why collaborative housing communities might be willing to share their best practices:
"I'm not deep into it, but I can see it's a little bit like the squatting scene you know like information is really accessible,

because you're stronger when there are other examples like you around in a larger scale. You tend to share your knowledge, it's not like a business model where nobody shares because there's competition for this kind of thing. The more there is, the more you strive for a legacy so you tend to share this knowledge I guess."
Also, she stated that mainly the co-founders are involved with other communities:
"They're also being like continuously involved with other models to try to understand if there's some sort of communication or knowledge they can get to develop it and we are not really part of it of course individually."
Resident 2 shared similar stories as resident 1. She also was not in contact with other cohousing communities, apart from the event with a community from Brussels. She thinks knowledge sharing is important. The Brussels community appeared to have fixed meetings, and resident 2 stated that Stad in de Maak could learn from that:
"Nou daar zouden wij ook wel nog wat van kunnen leren omdat het gewoon wel wat structureler informatie over en weer is. Dus wat dat betreft kan je gewoon leren van anderen die iets soortgelijks doen, maar misschien iets wat wel werkt of wat niet werkt. Of je ziet dat het goed bij je past of helemaal niet."
Co-founder 1 elaborated on their syndicate VrijCoop and how important it is to create a sound base of several housing communities wanting to buy together, as you have more experience together:
"We krijgen het alleen maar van de grond als dat tenminste 2 of 3 of 4 groepen ook daadwerkelijk gaan doen. Dan heb je collectief voldoende ervaring om de volgende groep ook wat makkelijker te helpen."
Apart from VrijCoop, co-founder 1 stated that there is some contact with the Woongenootschap Rotterdam, a housing community that is setting up collective private commissioning.
To conclude bridging capital, the relationship with neighbors might be improved. Open initiatives in the commons might lead to more contact with the neighbors. Furthermore, the amount of knowledge sharing and benefit gained from relationships with other cohousing communities could be improved. Residents could become a part of this. Currently, the co-founders have a more significant relationship with other cohousing communities.

Linking capital

Looking at linking capital, the most important and prevalent linking relationship is the one between the co-founders of Stad in de Maak and Havensteder. The residents have no relationship with Havensteder, nor the municipality of Rotterdam.

Resident 1 stated:

"I don't even know how they look like. No really, we have zero contact."

Resident 2 stated that the co-founders do not encourage having contact with Havensteder, because it is a precarious and dependent relationship, essential for Stad in de Maak's existence:

"We hebben geen contact met Havensteder zelf en dat sporen ze ook niet aan. Het is best een spannende relatie."

"Ja, want ze zijn natuurlijk best wel afhankelijk van Havensteder. En of zij het nog leuke projecten vinden en of ze nog enthousiast worden voor Stad in de Maak. Als je dat verpest ja dan is dat eigenlijk ook niet echt iets."

However, resident 2 stated that she did want to help with the continuation of Stad in de Maak, but from the inside out:

"Maar ik ga het er nog wel een keer over hebben met Erik, of met Mark of met Piet. Ik ben best wel benieuwd wat de opties zijn zeg maar. Misschien kunnen we wel helpen maar dan van binnenuit Stad in de Maak."

Regarding the process of communication, co-founder 1 stated that especially their first ambassador at Havensteder really helped them. However, as the market has changed and with it the real estate situation for Havensteder, the problem which Stad in de Maak helped solve is gone. As a result, the communication is mainly one-sided from the co-founders to Havensteder. They try to stay in the loop and jump at chances to create new collaborations with Havensteder:

"Communicatie met Havensteder was in het begin eigenlijk uitstekend omdat Mark van de Velde, die kwam hier regelmatig langs. (…) zij zeiden van, ja goh in het begin hadden wij een probleem en jullie waren de oplossing, maar dat probleem is weg. (…) Alle alle communicatie komt nu bijna van één kant, wij hebben een vraag aan Havensteder."

Housing corporation 1 was positive about the relationship with Stad in de Maak, which arose because they moved within the same Rotterdam network for a long time. He stated he enjoyed the informal way of working together, instead of a tough business relationship. The relationship differs a bit per co-founder, and housing corporation 1 described Erik Jutten as the 'networking type'.

The frequency of contact varied, from once a week to once a year. Housing corporation 2 also elaborated on frequent contact, and how that can help for Stad in de Maak to recognize opportunities:
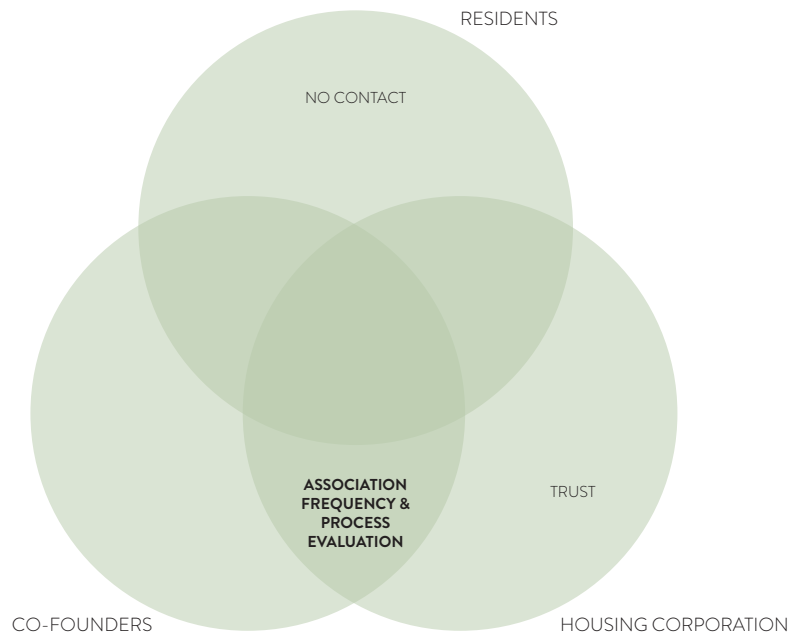
Figure 4.1.4.5. Venn diagram linking capital. (own ill.)

"Het is dat je elkaar regelmatig spreekt. Dan heb je het wel eens ergens over, of zij ruiken een kans, dat kan."

At the Almondestraat, the goal is to set frequent evaluation meetings, housing corporation 2 stated:

"Zat geen patroon in, maar nu met de Almondestraat dat we wel evaluatiemomenten hebben gepland of gaan inplannen."

Other than that, Havensteder leaves the management of the buildings op to Stad in de Maak. They are free to do as they please, as long as it fits within their collaboration agreement. Not all employees at Havensteder are happy with Stad in de Maak. Housing corporation 2 elaborated that some perceive them as odd ones, because the ideas of Stad in de Maak do not fit in a box:

"Sommige medewerkers (…) die vinden dat ze helemaal doordraaien, socio gedoe, maar rare snuiters. Zij passen niet in een standaard hokje dus ik denk niet dat ze door iedereen hetzelfde gewaardeerd worden."

Looking at trust, housing corporation 1 stated he perceived their relationship as trustworthy:

"Ik heb daar wel een goeie vertrouwensband mee opgebouwd. Ik ken hen ook lang hè, dus dat scheelt."

However, their imagery, as has been mentioned previously, could be a problem:

"Want ja, kun je nog zo intelligent zijn, maar als je als een soort verstrooide professor eruit ziet, wordt er toch weer anders naar je gekeken."

This has also been stated by housing corporation 2, who is of the opinion that experimental housing organizations often do not know how to keep their financial situation feasible:

"Als wij in zee gaan met partijen die meer experimenteel bezig zijn en creatief bezig zijn, is dat het ze vaak niet lukt om financieel de zaken op orde te houden."

Also, he stated that he has the impression that Stad in de Maak quickly turns to Havensteder for help when they struggle with the financially feasibility of their project.

Housing corporation 2 also stated that Stad in de Maak is not the only experimental organization Havensteder works with. They also work with de Keilewerf, for example: *"Wij vinden het nog steeds prettiger om met een partij iets te doen, en dat kan behalve Stad in de Maak ook de Keilewerf zijn, dat zijn ook mensen die voor een bepaald doelgebied woningen beheert."*

Lastly, both housing corporation 1 and 2 stated that they think it could be beneficial if Stad in de Maak would try to work with other housing corporation in Rotterdam as well, such as Woonstad. This would make them less dependent of Havensteder.

"Het zou wel goed zijn voor hun als ze met een andere corporatie ook wat zouden gaan doen." (HC 1)

"Wat volgens mij zou kunnen helpen is als zij behalve Havensteder kijken wat ze nog meer kunnen doen met een Woonstad. Ze hangen nu een beetje aan de samenwerking met ons eigen locatie dus zijn daardoor wellicht ook een beetje afhankelijk." (HC 2)

Apart from the relationship with Havensteder, the relationship with the municipality of Rotterdam is a linking relationship. It was shortly mentioned by co-founder 1. He stated that the municipal policies and rules do not match with collaborative housing. They tried to set up a lobby group with others to see if they could get the municipal council to change the rules, but Stad in de Maak noticed that they were the ones trying to get forward with the lobby group:

"We hebben ook wel geprobeerd om met een aantal mensen zo'n soort lobbygroep van de grond te tillen, maar dan merkten we, ja dan zijn wij weer degene die alles moeten trekken."

In sum, the most important form of linking capital is the relationship with Havensteder, which is limited to the co-founders. The level of trust in this relationship could be improved. The relationship with the municipality of Rotterdam is limited. Residents of Stad in de Maak have zero to no linking capital. Furthermore, Stad in de Maak could work towards buildings relationships with other housing corporations.
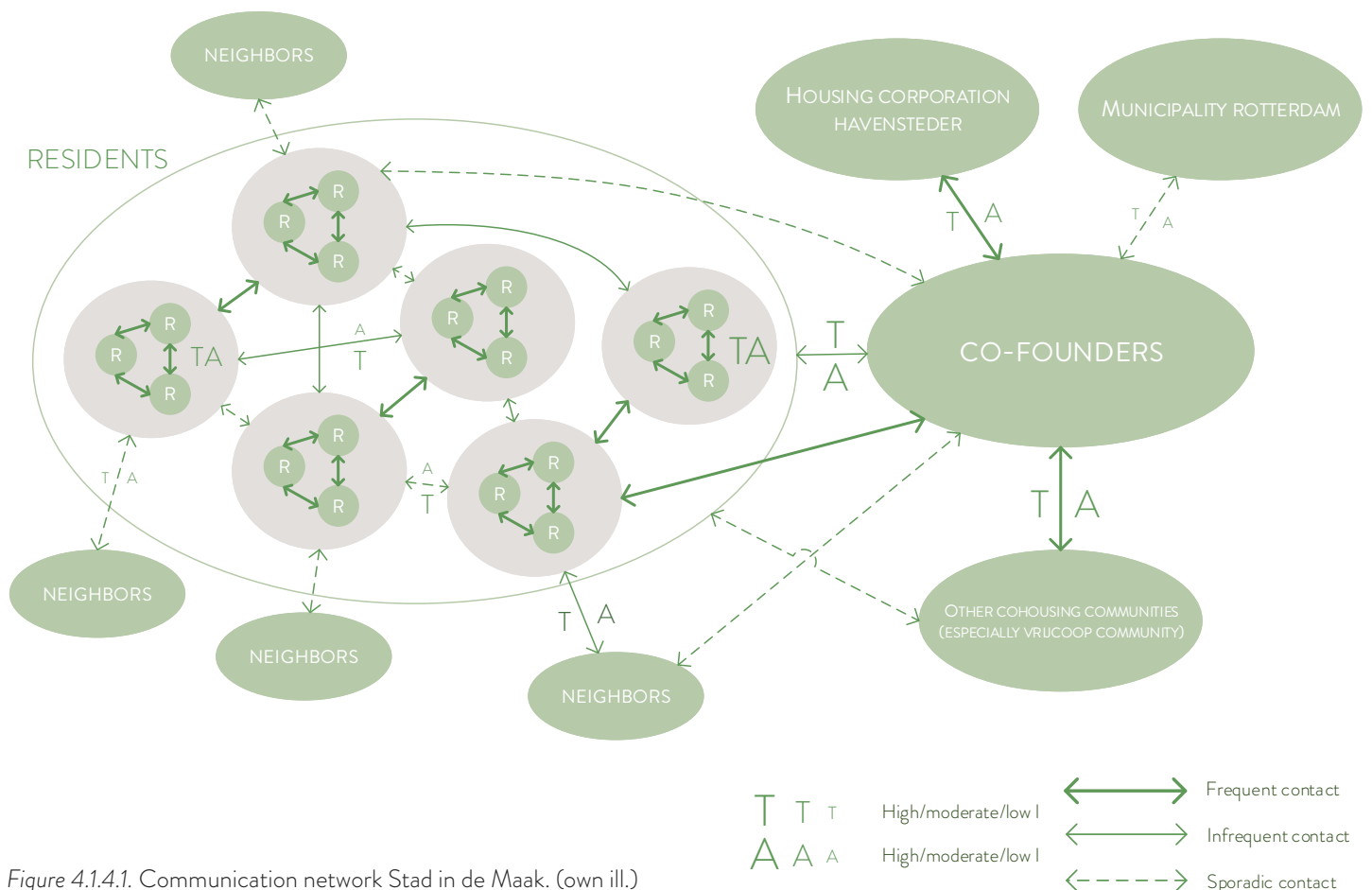
Figure 4.1.4.1. Communication network Stad in de Maak. (own ill.)

In this section, the validation of the interview results is presented. A summary of the findings of both sharing economy and self-organization has been sent to all interviewees through email, including a set of reflection questions. The summary of the findings that has been sent to the interviews, and the accompanying questions can be found in Appendix A13.

Residents and co-founders were sent an overview of both sharing economy and self-organization. For sharing economy, a description was given, as well as the advantages and disadvantages that were found in the interviews. For self-organization, a description of the self-organization was given, as well as the barriers and enablers that were found.

Housing corporation employees were sent an overview of the barriers and enablers of self-organization.

The table below shows which interviewees responded to the validation. Both residents and both housing corporation employees responded. No co-founders responded.

Resident 1	Yes
Resident 2	Yes
Co-founder 1	No
Co-founder 2	No
Housing corporation 1	Yes
Housing corporation 2	Yes

In section 4.2.1, the responses are presented for both residents, co-founders and the housing corporation. In section 4.2.2 the responses are brought together in conclusions for both sharing economy and self-organization. Apart from one disadvantage of the sharing economy (residents: sharing economy, question 2), the interviewees did not deny any of the results. The validation provided a deepening of the findings of the interviews.

4.2.1 RESPONSES INTERVIEWEES RESIDENTS

Residents answered questions about the sharing economy and self-organization results.

Sharing economy
The results that were presented to the residents regarding sharing economy are visible in table 4.2.1.1. The residents answered the following questions, of which the responses are presented separately below:

1. Does the description of the sharing economy within Stad in de Maak match with your perception of how sharing takes place within Stad in de Maak?
2. Do the advantages and disadvantages of the sharing economy within Stad in de Maak match with your perception of advantages and disadvantages of sharing within Stad in de maak?
3. The opinions on disadvantages were ambiguous: some interviewees view the disadvantages as a problem, others do not. Do you think that residents of Stad in de Maak have varying ideas of what the disadvantages of sharing are?

1. Does the description of the sharing economy within Stad in de Maak match with your perception of how sharing takes place within Stad in de Maak?
Both residents confirmed that the description matched with their perception.

2. Do the advantages and disadvantages of the sharing economy within Stad in de Maak match with your perception of advantages and disadvantages of sharing within Stad in de maak?
Resident 1 confirmed that these advantages and disadvantages matched with her perception.

Advantages	Saving time and money	By sharing, you can save time and money.
	Having a strong community & network	The sharing taking place within Si/dM leads to a strong community and network.
Disadvantages	Intense relationships	Daily sharing of living spaces can intensify the relationships with those your share the spaces with.
	Complex communication	Residents have other wishes and backgrounds, which makes communication complex.
	Lack of usage of empty spaces	The empty common spaces are not necessarily used.

Table 4.2.1.1. Validation table sharing economy results. (own ill.)

Resident 2 answered that the advantages and disadvantages were fairly similar to her perception. She noted that she did not perceive the following problem: "Residents have other wishes and backgrounds, which makes communication complex."

3. The opinions on disadvantages were ambiguous: some interviewees view the disadvantages as a problem, others do not. Do you think that residents of Stad in de Maak have varying ideas of what the disadvantages of sharing are?
Resident 1 answered: "I only see that reflected on intense relationships - which is both an advantage and disadvantage in my view. And yes, indeed I do think the residents of Stad in de Maak have different ideas of what disadvantages of sharing are."
Resident 2 answered: "Ja, ik denk dat je in iedere situatie waarin meerdere mensen betrokken zijn verschillende ideeën zal hebben." To paraphrase, she stated the every situation which involves several people, will lead to having varying ideas.

Self-organization
The results that were presented to the residents regarding self-organization are visible in table 4.2.1.2. The residents answered the following questions, of which the responses are presented separately below:
1. Does the description of the self-organization of Stad in de Maak match with your perception of how Stad in de Maak is organized?
2. Do the barriers and enablers of self-organization of Stad in de Maak match with your perception of what the barriers and enablers of self-organization of Stad in de Maak are?
3. The opinions on barriers were ambiguous: some interviewees view the barriers as a problem, others do not. Do you think that within Stad in de Maak there are varying opinions of what the barriers to its organization are?

Barriers	Complex communication	There is limited communication between Si/dM buildings and finding a common language is hard.
	Setting up rules for sharing	Developing rules for sharing is complex.
	Differing motivations	Motivations to be part of Si/dM differ between residents and co-founders, and among residents.
	Decision-making	Collective decision-making about Si/dM is informal and ad hoc.
	Dependence institutions	Si/dM is dependent of Havensteder for having property.
	Finances	Si/dM is not financially feasibly without borrowing Havensteders' property.
	Image Stad in de Maak	The image of Si/dM may hamper connections with other parties.

Enablers	Political situation	The political climate influences policies and thus Si/dM.
	Knowledge sharing	Knowledge sharing among residents or with other cohousing initiatives can help.
	Joining forces	Residents can join forces to buy a building together, or Si/dM can join forces with the VrijCoop syndicate.
	Market situation	Si/dM is a result of the crisis, and the market can help in the future.
	Self-reliant residents	Self-reliant residents are essential for setting up initiatives in the commons.
	Contribution to the neighborhood	Si/dM wants to contribute to the area, and for Havensteder it provides added societal value.
	Working with other housing corporations	Working with other corporations could lead to more properties and make Si/dM less dependent.
	Novel ideas Si/dM	Havensteder is inspired by the ideas of Si/dM.
	Feasible business case	Creating a feasible business case can support Si/dM.

Table 4.2.1.2. Validation table self-organization results. (own ill.)

1. Does the description of the self-organization of Stad in de Maak match with your perception of how Stad in de Maak is organized?
Both residents confirmed that the description matched with their perception.

2. Do the barriers and enablers of self-organization of Stad in de Maak match with your perception of what the barriers and enablers of self-organization of Stad in de Maak are?
Both residents confirmed that the barriers and enablers matched with their perception.

3. The opinions on barriers were ambiguous: some interviewees view the barriers as a problem, others do not. Do you think that within Stad in de Maak there are varying opinions of what the barriers to its organization are?
Resident 1 stated: "Yes, I do think we have different views, but indeed some of the barriers you mention can become problematic at some point."
Resident 2 stated: "Hier zou ik hetzelfde antwoord willen geven als hierboven. Ik denk dat het onvermijdelijk is verschillende ideeën te hebben in een groep. Maar dit maakt het juist zo interessant om in de wonen/werken." To paraphrase; she referred to her answer for question 3 of sharing economy and thinks it is inevitable to have varying ideas. She thinks that is what makes Stad in de Maak so interesting to live in/work at.

The responses of residents thus confirmed most of the findings. However, especially the answers of resident 2 on questions 3 for both sections, did again stress the ambiguity of the findings; many of the barriers, enablers, advantages and disadvantages can be positive or negative.

CO-FOUNDERS
The co-founders did not fill out the validation.

HOUSING CORPORATION
The results that were presented to the residents regarding self-organization are visible in table 4.2.1.2. Housing corporation employees answered one question about the barriers to and enablers of self-organization, namely:
1. Do the barriers and enablers of self-organization of Stad in de Maak match with your perception of what the barriers and enablers of self-organization of Stad in de Maak are?

1. Do the barriers and enablers of self-organization of Stad in de Maak match with your perception of what the barriers and enablers of self-organization of Stad in de Maak are?
Housing corporation 1 stated that most of the barriers and enablers seemed logical to him. However, he had some remarks regarding two enablers.

First of all, he responded to the enabler 'Political situation', stating: "Ok, het politieke klimaat beïnvloedt Si/dM, die snap ik, maar wat zegt dat verder? Is er nu een positief politiek klimaat dat benut kan worden of juist niet? Wat voor politiek klimaat is een enabler voor Si/dM en wat voor politiek klimaat niet? Links versus rechts? Lokaal versus landelijk? Conservatief versus progressieve politiek? Zonder deze duiding zegt deze conclusie niet zoveel..." In his response he outlined that, without specifically stating what kind of political climate helps Stad in de Maak, and whether that political climate is present right now, it does not contribute anything specific.
Furthermore, he responded to the enabler "market situation". Instead of an enabler, he believes it is a barrier. He stated: "Ik denk juist dat de marktwerking of het marktdenken Si/dM in de weg zit. Vind Si/dM bij uitstek een niet-markt of niet-neoliberaal initiatief. Zij gedijen juist bij minder marktwerking en bij meer sociaal maat-schappelijke politiek en/of economisch systeem." To paraphrase, he thinks market forces hamper Stad in de Maak, as it is an initiative that stands apart from the market and from neoliberal ideas. Less market forces and a more societal approach in politics and in the economic system would be more beneficial for Stad in de Maak.
Housing corporation 2 stated: "Ik kan me prima vinden in het opgeschreven resultaat." To paraphrase, he stated that he agreed with the results.

4.2.2 CONCLUSION VALIDATION
In sum, many of the validation responses confirmed the findings of the interviews. However, the validation was unfortunately not a complete set, as the co-founders did not respond.
Below, the most important findings for both sharing economy and self-organization are presented.

Sharing economy
Looking at sharing economy, the validation shows that the description of sharing economy matches the perception of the residents, as well as most of the advantages and disadvantages. The disadvantage "complex communication" was only confirmed by one resident.
Regarding the ambiguity of the advantages and disadvantages, the responses of residents reflected this ambiguity as well. The residents confirmed that residents have varying ideas, but one resident also noted that this is something that will always happen whenever multiple people are involved.
The responses of the residents thus speak to the complexity of the results which also had been discovered when analyzing the interviews.

Self-organization

Looking at self-organization, both residents confirmed that the description of the organization of Stad in de Maak matched with their perception.

Furthermore, regarding barriers and enablers, both residents and housing corporation 2 agreed with the barriers and enablers. Housing corporation 1 raised questions for two enablers, 'political situation' and 'market situation'. He thinks the former should be more clearly defined. This means stating what that political situation should look like to be an enablers, and whether that political situation is present currently. For 'market situation', he argued that this is more of a barrier, as Stad in de Maak would benefit from less market forces. This can be connected to one of the responses of the residents in the interviews, who stated that the market is a force behind Stad in de Maak, but also a threat.

Lastly, residents spoke about the ambiguous opinions of people regarding barriers to the self-organization of Stad in de Maak. Both confirmed this. However, resident 1 does not think this is a problem, but an inevitable result of being in a group. She thinks this is what makes Stad in de Maak interesting. Resident 1, on the other hand, described that some of the barriers can be "problematic". The responses of the interviewees thus already show an ambiguity in whether the differences in ideas have a positive or negative effect.

To match the barriers and enablers of self-organization to the conditions for self-organization, variables for the conditions for self-organization have been set up based on literature (Appendix B1). In a table, the found barriers and enablers have been matched to these variables by using quotes from the interviewees. The complete tables can be found in Appendix B2.

Table 4.3.1 illustrates how the table works with an example. On the top, the conditions for self-organization and accompanying variables are given. On the left, barriers or enablers are given – barriers in this example. The table is filled out based on how many interviewees spoke of a certain barrier in relation to a specific variable. In this example, three interviewees spoke of barrier, in relation to variable 1. Only one interviewee spoke of barrier 1 in relation to variable 3. The column 'Total barrier' counts how many times interviewees mentioned the barrier in relation to a variable. The column 'Number of conditions' shows for how many conditions this barrier has been mentioned. This difference has been made to understand if a barrier is mentioned a lot in relation to one condition, or on several places, but less. For example, barrier 2 has been mentioned 5 times, but only for one condition. This could indicate a stronger relationship than if the barrier has been mentioned 5 times, for 5 conditions. The bottom rows follow the same logic, but then for how many the variables and conditions have been mentioned, and for how many barriers. It must be noted that this analysis of the interview responses is only about statements that interviewees made that can be related to the variables for the conditions for self-organization. It can be the case that a barrier has been noted by more interviewees previously in section 4.1.3, but less statements can be connected to the conditions for self-organization.

This section consists of three subparagraphs. In section 4.3.1, the results for the barriers to self-organization are presented. In section 4.3.2, the results for the enablers to self-organization are given. Lastly, the results of the barriers and enablers are compared and conclusions are presented in section 4.3.3.

CONDITION	CONDITION 1		CONDITION 2			
VARIABLE	VARIABLE 1	VARIABLE 2	VARIABLE 3	VARIABLE 4	TOTAL BARRIER	NUMBER OF CONDITIONS
Barrier 1			1		1	1
Barrier 2	3	2			5	1
…					0	0
TOTAL VARIABLE	3	2	1	0		
TOTAL CONDITION	5		1			
NUMBER OF BARRIERS	1		1			

Table 4.3.1. Empty connection table. (own ill.)

4.3.1 BARRIERS

As stated, the following barriers to self-organization were found in the interviews: differing motivations, complex communication, the dependence from the institutional environment, setting up rules for sharing, the lack of rules/regulations for decision-making, finances, and the image of Stad in de Maak. The findings have been visualized in figure 4.3.1. In this figure, the seven boxes represent the barriers, and the colored circles below the boxes represent which condition is connected to what barrier.

'Complex communication' and 'finances' are the barriers that were mentioned most in relation to conditions for self-organization, and together with 'Setting up rules for sharing' hampered the most conditions, namely four conditions in total. 'Public imagery' was mentioned the least and hampered the least amount of conditions; it had one mention for one condition.

Looking at conditions, 'Room for initiatives' and 'Rules for collective use and decision-making' had the most variables that were hampered. However, '(a common) Intrinsic motivation' and 'Mutual trust within and beyond the organization' were hampered by the most barriers, namely five in total. This could indicate that the relationship between the barriers and 'Room for initiatives' and 'Rules for collective use and decision-making' is stronger than between the barriers and '(a common) Intrinsic motivation' and 'Mutual trust'.

Below, the barriers are presented. For every barrier, it is addressed which variables and conditions it is connected to, based on which response, and the paraphrased content of the interviewee's response. This is summarized in tables, accompanied by interviewee quotes. Table 4.3.2 presents the findings per barrier.

Differing motivations
Differing motivations was addressed 6 times, for 3 conditions, and addressed by residents 1 and 2. The differing motivations concern motivations of residents themselves that vary, but also the difference in perspective of residents and co-founders. This could lead to problems in collective understanding, but also in having a common intrinsic motivation. Furthermore, as the motivations of residents differ, it is more complex to find like-minded people to self-organize with. About the distinction between residents and co-founders, resident 2 stated:

"Dat vind ik altijd een beetje grappig want voor hun is het eigenlijk een baan terwijl het voor ons echt leven is."

Condition	Variable	Interviewee	'Differing motivations' content response interviewee
(a common) Intrinsic motivation	Free choice	Resident 2	Stad in de Maak is a job for the co-founder, but life for the residents.
	Interest/enjoyment	Resident 1	Motivation of why people live within Stad in de Maak differs.
Definition of boundaries of the initiative	Collective understanding	Resident 1	There is very little contact between the Stad in de Maak buildings.
		Resident 2	Stad in de Maak is a job for the co-founder, but life for the residents.
Room for initiatives	Like-minded people	Resident 1	Not everyone lives within Stad in de Maak out of the same motivation.
		Resident 2	Not everyone has the same willingness to share what they are doing (i.e. initiatives in the commons) within Stad in de Maak.

Condition	Variable	Interviewee	'Complex communication' content response interviewee
Mutual trust within and beyond the organization	Trust within group	Resident 2	The trust within the group is hampered because communication does not always run smoothly.
	Trust beyond group	Resident 2	There is limited contact with neighbors, and not all residents in her building trust the neighbors.
Rules for collective use and decision-making	Rules collective use	Resident 1	It is hard to make rules about cleaning, because living together can be intense.
		Resident 2	Roommates of resident 2 have had discussions about how to use the commons and this communication did not run smoothly.
Definition of boundaries of the initiative	Collective understanding	Resident 1	There is very little contact with other Stad in de Maak buildings, and people are unaware what everyone is up to.
		Resident 2	Because of limited communication, not everyone is up to speed of what happens (i.e. initiatives in the commons) within Stad in de Maak.
Room for initiatives	Like-minded people	Resident 1	With some people the bond is closer, with others it is less close.
		Resident 2	Because of limited communication, not everyone is up to speed of what happens (i.e. initiatives in the commons) within Stad in de Maak.

Condition	Variable	Interviewee	'Dependence institutional environment' content response interviewee
(a common) Intrinsic motivation	Free choice	Resident 2	Residents may have to move when Havensteder terminates the contract.
Mutual trust within and beyond the organization	Trust beyond group	Resident 2	The relationship with Havensteder is perceived as fragile and residents are not a part of it.
		Housing corporation 2	Stad in de Maak looks towards the housing corporation when it gets hard financially, hampering the trust of the housing corporation in them.
Room for initiatives	Available space	Co-founder 1	Having property available depends on Havensteder.
		Housing corporation 2	The opportunities to work together with Stad in de Maak have become smaller because of the market.

Condition	Variable	Interviewee	'Setting up rules for sharing' content response interviewee
(a common) Intrinsic motivation	Interest/enjoyment	Co-founder 1	Because there are no formal rules, residents are getting annoyed.
Mutual trust within and beyond the organization	Trust within group	Resident 2	A situation in her building with unclear rules led to a trust problem among the residents.
Rules for collective use and decision-making	Rules collective use	Resident 1	There need to be rules for cleaning among residents.
		Co-founder 1	No rules have been formalized for the common spaces.
		Co-founder 2	It is hard to make rules about what happens when you claim to much shared space.
Definition of boundaries of the initiative	Collective understanding	Co-founder 1	Not everyone has the same perception of how the common space should be used.

Table 4.3.2. Barriers and conditions for self-organization. (1/2) (own ill.)

Condition	Variable	Interviewee	'Lack of rules for decision-making' content response interviewee
(a common) Intrinsic motivation	Interest/enjoyment	Co-founder 1	Because there are no formal rules, residents are getting annoyed.
Rules for collective use and decision-making	Rules collective use	Co-founder 1	No rules have been formalized for the common spaces.
		Co-founder 2	It is hard to decide rules about what happens when you claim too much shared space.
	Rules decision-making	Co-founder 1	There are no formal rules on how decision-making is organized within Stad in de Maak.

Condition	Variable	Interviewee	'Finances' content response interviewee
(a common) Intrinsic motivation	Free choice	Resident 1	She has no other place she can afford to live in.
Mutual trust within and beyond the organization	Trust beyond group	Housing corporation 2	Stad in de Maak looks towards the housing corporation when it gets hard financially, hampering the trust of the housing corporation in them.
Room for initiatives	Available space	Resident 2	The building she lives in might be sold and renovated and then rented expensively.
		Co-founder 1	Stad in de Maak did not win a bidding with Havensteder because another party offered more money.
		Housing corporation 1	Stad in de Maak made an offer on a property, but the highest bid was the decisive factor.
		Housing corporation 2	SidM has a societal value, but that does not necessarily outweigh the lack of a feasible business case.
Financial feasibility	Feasible business case	Housing corporation 1	Stad in de Maak made an offer on a property, but the highest bid was the decisive factor.
		Housing corporation 2	SidM has a societal value, but that does not necessarily outweigh the lack of a feasible business case.

Condition	Variable	Interviewee	'Image Stad in de Maak' content response interviewee
Mutual trust within and beyond the organization	Trust beyond group	Housing corporation 1	Stad in de Maak can influence the level of trust of external parties by the way they present themselves.

Table 4.3.2. Barriers and conditions for self-organization. (2/2) (own ill.)

Complex communication

Complex communication was addressed 8 times, for 4 conditions, by residents 1 and 2. The responses of interviewees regarding communication were complex and ambiguous at times. Resident 2, for example, gave an example of her roommates having discussions about rules in the commons, but she herself did not think these rules were a problem. Analyzing interviewee responses shows complex communication may influence trust, the rules of use (e.g. rules about cleaning the commons), the collective understanding of what Stad in de Maak does, and finding like-minded people. The complexity of communication was illustrated by resident 1, who went from the large scale to the small scale in her quote by moving from the complexity of the various backgrounds of people to a day-to-day chore as cleaning: *"And also trying to know your limits how to not be disrespectful, because there's a lot of cultures and trying not to be pushing people because they can be hurt or I don't know. And cleaning is really important I think that's something that needs to be discussed."*
In sum, complex communication may influence deeper layers of self-organization such as trust, but also the more

practical aspects of self-organization as setting up rules for usage of your home.

Dependence institutional environment

This barrier was addressed 5 times, for 3 conditions, by resident 2, co-founder 1 and housing corporation 2. The dependence of the institutional environment hampers the organization on a quite abstract level, namely in the free choice of residents and in the available space, but also in the level of trust between Havensteder and Stad in de Maak. At the Bloklandstraat, Havensteder arranged a three-year contract. This contract has ended, and resident 2 described how the contract has been arranged since then: *"En na die periode wilden ze hier gaan renoveren, maar dat is nog steeds niet echt gelukt dus nu hebben we een nieuw contract waarbij we een opzegtermijn van drie maanden hebben. We zitten te wachten of te hopen dat het nog heel lang duurt."*
One can argue that having an uncertain situation like this influences the organization as there is not a lot of potential for future development.

Setting up rules for sharing
This barrier was addressed 6 times, for 4 conditions, by co-founders and residents. The influence of this barrier is more practical in nature, but can also be connected towards more complex issues such as having a collective understanding of what Stad in de Maak aims to achieve, and having a level of trust among residents.

Co-founder 1 captured this ambiguity well in the following statement about making decisions and setting up rules: *"Het gaat nog steeds allemaal heel erg informeel en tussen de bedrijven door. En daar beginnen opzich mensen zich daar ook zo langzamerhand aan te ergeren, dat het allemaal zo informeel gaat en moeten we geen regels maken waardoor dit allemaal wat soepeler en makkelijker kan."*

This quote illustrates the need for rules, but also the effect it has on the residents, who are getting annoyed.

Lack of rules for decision-making
This barrier was addressed 2 times, for 2 conditions, by the co-founders. The influence is quite similar to the previous barrier ('setting up rules for sharing'), but only quotes of the co-founders can be attributed to variables for conditions for self-organization. Again, in the responses a more practical component can be distinguished, as well as the influence on enjoyment of the residents.

Finances
This barrier was addressed 8 times, for 4 conditions, by co-founders, residents and housing corporation. This barrier also has a multi-faceted influence on the conditions. It influences the free choice of resident 1, as she stated she cannot afford to live elsewhere. Furthermore, it influences the available space of the self-organization, as termination of contracts with Havensteder leaves Stad in de Maak without property. It also influences the (trust in the) relationship between Havensteder and Stad in de Maak.

Speaking of a bidding in which Stad in de Maak participated, housing corporation 1 stated that in the end, money was the decisive factor and as a result, Stad in de Maak did not win the bid: *"Omdat op dat moment geld toch een doorslaggevende rol toch had. Er is altijd wel een verschil in zeg maar. Ja. Stel dat ze allebei 4 ton hadden geboden, dan was misschien logisch geweest om voor Stad in de Maak te kiezen."*

Image Stad in de Maak
This barrier was addressed 1 times, for 1 condition, by housing corporation 1. He discussed a bidding which Stad in de Maak lost and talked about the little things that contribute to the whole, such as the way Stad in de Maak presents themselves. However, he did describe these things as marginal: *"Kun je nog zo intelligent zijn, (...). Maar als je als een soort verstrooide professor eruit ziet, wordt er toch weer anders naar je gekeken. Maar goed dat is. Dat vind ik iets heel marginaals hoor."*

Conclusion
In sum, the connection between the barriers and the variables for conditions for self-organization is complex, but can be divided into two aspects: practical aspects for the organization, and deeper layers of the organization such as trust and motivation. Looking at the results, it is interesting to note that the relationship with the practical conditions 'Rules for collective use and decision-making' and 'Room for initiatives' is stronger, but there are more barriers being connected to '(a common) Intrinsic motivation' and 'Mutual trust within and beyond the organization'.

Furthermore, the quotes of interviewees illustrated that the practical aspects and deeper layers are often connected as well.
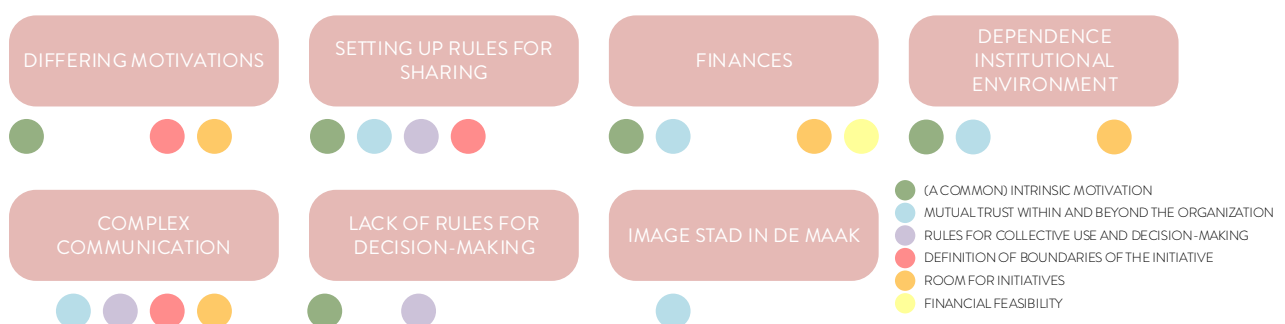

Figure 4.3.1. Barriers and conditions for self-organization visualized. (own ill.)

4.3.2 ENABLERS

As stated in section 4.1.3, the following enablers of self-organization were found in the interviews: the political situation, knowledge sharing (within the community or beyond), having self-reliant residents, working with other housing corporations, joining forces, the novel ideas of Stad in de Maak, the market situation, the contribution to the neighborhood, and a feasible business case. The findings have been visualized in figure 4.3.2. In this figure, the circles below the enabler indicate which conditions the enabler is connected to.

General notes
'Contribution to the neighborhood', 'knowledge sharing' and 'market situation' were enablers that were noted most times in relation to variables to conditions for self-organization. The former two also influenced the most conditions, namely four. However, 'market situation' influenced only 1 condition, namely 'Room for initiatives'. This is the lowest score, together with 'political situation' (mentioned 1 time) and 'self-reliant resi-dents' (mentioned 2 times).
'Room for initiatives' and 'financial feasibility' were the conditions connected to enabler the most times, and together with '(a common) intrinsic motivation' and 'mutual trust within and beyond the organization' were the most enabled, namely by 4 enablers. Table 4.3.3 presents the findings per barrier.

Market situation
Market situation was addressed 5 times, for 1 conditions, and addressed by resident 1, co-founders and housing corporation 1 and 2. The market situation was an enabler for self-organization as it helped Stad in de Maak acquire its current property.
Resident 1 described the positive influence of the market on Stad in de Maak's existence, but also noted how it could be a threat: *"I think the project itself is like an outcome of, like some maligne market because of the crisis I think, and the vacancy. So Stad in de Maak tries to be independent from the market, but actually it's the main force and the main threat."*

Political situation
Political situation was addressed 1 time, for 1 condition, by resident 1. According to resident 1, the political situation had a positive effect on the existence of Stad in de Maak, and thus on the variable 'available space'.
When asked what she thought were enablers, she stated: *"The cracks I think of the government back then I think was one of the main factors and I think that's very interesting because it means that we can only operate within the system."*

Joining forces
This enabler was addressed 4 times, for 2 conditions, by residents and co-founder 1. The combination of variables shows an influence on the personal level according to resident 1, namely influencing her free choice, but also an influence on a practical level, namely on the feasible business case. Resident 1 mentioned joining forces as an enabler. When asked about her reasoning behind that, she stated the following: *"Minimize all the outside forces because if the market is actually the main force then if that's your property then you're just free to go."*
This illustrates the influence of joining forces on the feasible business case, but also on her free choice.

Knowledge sharing
This enabler was addressed 5 times, for 4 conditions, by residents 1 and 2. The influence of this enabler on conditions for self-organization is again quite complex and multi-faceted. There is a connection with building trust and strengthening the network, but also on feasibility, as shared knowledge can be accessed as a resource.
The Bulletin, a regular journal, worked for knowledge sharing. Resident 2 was positive about this and its influence on Stad in de Maak. She described how it can help to know what you can get from everyone, thus contributing to finding like-minded people and collective understanding:
"Dat was er, de bulletin, maar die heb ik al heel lang niet meer gezien. Beetje doodgebloed denk ik. Nee, die vond ik eigenlijk heel erg handig want dan krijg je dus wel, was volgens mij eens per 2 maanden, en dan krijg je een overzicht van wat iedereen aan het doen is en dan weet je ook veel beter waar je dus terecht kan voor iets."
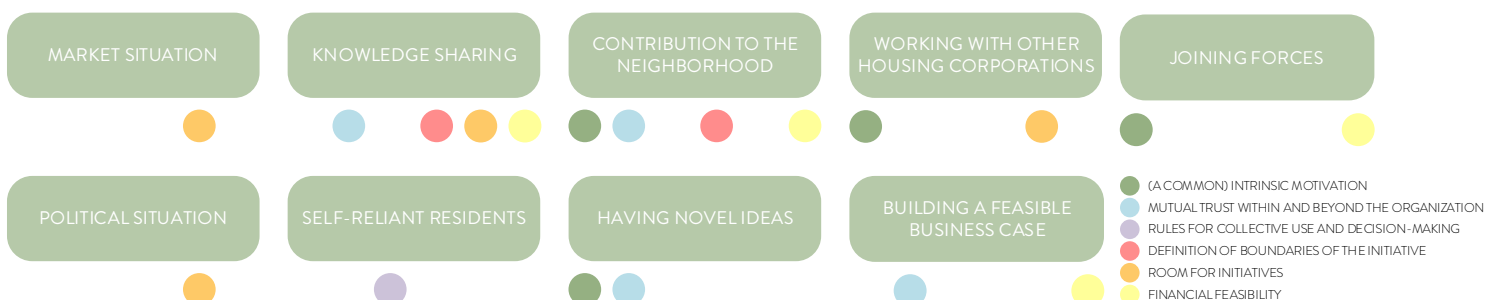

Figure 4.3.2. Enablers and conditions for self-organization visualized. (own ill.)

Condition	Variable	Interviewee	'Market situation' content response interviewee
Room for initiatives	Available space	Resident 1	Stad in de Maak acquired their first property because of the crisis.
		Co-founder 1	There was a lot of vacancy during the crisis.
		Co-founder 2	Havensteder approached him during the crisis with a property.
		Housing corporation 1	Stad in de Maak can use the current supply and demand of the market to acquire new property.
		Housing corporation 2	The Bloklandstraat might provide an opportunity for staying.

Condition	Variable	Interviewee	'Political situation' content response interviewee
Room for initiatives	Available space	Resident 1	Stad in de Maak came into being because of the cracks of the government.

Condition	Variable	Interviewee	'Joining forces' content response interviewee
(a common) Intrinsic motivation	Free choice	Resident 1	By buying property with residents you can minimize outside influence and become free.
Financial feasibility	Feasible business case	Resident 1	When you buy a property together, you do not lose money on rent anymore.
		Resident 2	As a group, you can bundle your financial powers to buy a property.
		Co-founder 1	Buying together takes property off the market, so you're not subject to market dynamics anymore.

Condition	Variable	Interviewee	'Knowledge sharing' content response interviewee
Mutual trust within and beyond the organization	Trust within group	Resident 1	Sharing what everyone is doing within Stad in de Maak would make the network stronger.
Definition of boundaries of the initiative	Collective understanding	Resident 2	Stad in de Maak would run more smoothly if everyone would know what everyone is up to or working on.
Room for initiatives	Like-minded people	Resident 1	Sharing what everyone is doing within Stad in de Maak would make the network stronger.
		Resident 2	Resident 2 uses what people are up to/passionate about to bond with them.
Financial feasibility	Feasible business case	Resident 2	Through knowledge sharing with other cohousing communities you can define what works and what doesn't for their financial feasibility.

Condition	Variable	Interviewee	'Self-reliant residents' content response interviewee
Rules for collective use and decision-making	Rules collective use	Co-founder 1	Self-reliant residents are more resourceful with setting up shared spaces and organizing it by themselves.
	Rules decision-making	Co-founder 1	Self-reliant residents are more resourceful with setting up shared spaces and organizing it by themselves.

Condition	Variable	Interviewee	'Contribution to the neighborhood' content response interviewee
(a common) Intrinsic motivation	Interest/enjoyment	Resident 1	The neighborhood can enjoy the common spaces and activities Stad in de Maak offers.
Mutual trust within and beyond the organization	Trust beyond group	Resident 1	Neighbors sometimes drop by to use the laundry room, strengthening their bond with Stad in de Maak.
		Resident 2	Havensteder can see that Stad in de Maak is valuable if the bond with the neighborhood is strong.
		Housing corporation 1	Stad in de Maak delivered something beyond expectation, with value for the neighborhood.
Definition of boundaries of the initiative	Collective understanding	Co-founder 2	The starting point for Stad in de Maak was, among other things, to do something good for the area.
Financial feasibility	Feasible business case	Resident 1	The initiatives you set up that are open for the neighborhood promote a small scale economy, such as the laundry room which can be used by neighbors.

Table 4.3.3. Enablers and conditions for self-organization. (1/2) (own ill.)

Condition	Variable	Interviewee	'Having novel ideas' Content response interviewee
(a common) Intrinsic motivation	Interest/enjoyment	Housing corporation 1	He addressed that he was inspired by the ideas of Stad in de Maak, they even kept him up at night.
		Housing corporation 2	The co-founders explain their ideas perfectly, which is why you work with them as a housing corporation.
Mutual trust within and beyond the organization	Trust beyond group	Resident 1	Because of their ideas, the co-founders were able to convince other parties (e.g. Havensteder) to work with them.

Condition	Variable	Interviewee	'Working with other housing corporations' content response interviewee
(a common) Intrinsic motivation	Free choice	Housing corporation 1	Working with other corporations might allow Stad in de Maak some freedom.
Room for initiatives	Available space	Housing corporation 1	Working with other corporations might allow Stad in de Maak some freedom.
		Housing corporation 2	Working with for example Woonstad would help with creating opportunities for property.

Condition	Variable	Interviewee	'Building a feasible business case' content response interviewee
Mutual trust within and beyond the organization	Trust beyond group	Housing corporation 2	If Stad in de Maak can show positive financial statements, the housing corporation will more easily trust them.
Financial feasibility	Feasible business case	Co-founder 1	The original idea was to create a micro economy within Stad in de Maak, and this could still happen.
		Housing corporation 2	They could extend the financial model used at Pension Almonde to become a financial model.

Table 4.3.3. Enablers and conditions for self-organization. (2/2) (own ill.)

Self-reliant residents
This enabler was addressed 2 times, for 1 condition, by co-founder 1. According to him, having self-reliant residents supports the organization. This is easier for artists according to him. The buildings in which artists live, already work better:
"Het zou zichzelf moeten organiseren, soms gaat dat goed, de kunstenaars zijn dat van zichzelf al gewend."

Contribution to the neighborhood
This enabler was addressed 6 times, for 4 conditions, by co-founder 1, residents 1 and 2, and housing corporation 1. This enabler combines practical conditions, such as the feasible business case and allowing neighbors to use the resources of Stad in de Maak (e.g. the washing machine), with deeper communication aspects such as trust within and beyond the community or interest and enjoyment of residents and neighbors. The diversity of this positive impact was illustrated by the surprise and positive response of the housing corporation: *"Ik denk dat ze daar best wel veel voor de woonkwaliteit in zo'n straat, best wel meer aan hebben bijgedragen dan ik misschien vooraf had verwacht."*

Having novel ideas
This enabler was addressed 3 times, for 2 conditions, by housing corporation 1 and 2, and resident 1. It contributed to the intrinsic motivation of the housing corporation. Housing corporation 2 thinks the explanation of their ideas is the reason why you work with an organization as Stad in de Maak. Furthermore, according to resident 1 the ideas of Stad in de Maak helped form the bond with Havensteder.Housing corporation 1 admitted the ideas and inspiration kept him up at night: *"Die andere manier van denken vond ik ook een prettige. Ik werd er ook gewoon geinspireerd, ik werd er ook wakker door gehouden."*

Working with other housing corporations
This enabler was addressed 3 times, for 2 conditions, by housing corporation 1 and 2. This enabler can be connected to self-organization conditions from a practical perspective, helping Stad in de Maak to gain freedom and access to property. This helps the self-organization as it supports finding available space and the free choice of Stad in de Maak. According to housing corporation 2, this can help end their dependency of Havensteder and thus support their autonomy: *"Er zit een bepaalde afhankelijkheid van hun naar Havensteder toe. Dat zouden ze moeten proberen te doorbreken."*

Building a feasible business case

This enabler was addressed 3 times, for 2 conditions, by housing corporation 2 and co-founder 1. This enabler can have an influence on the trust between Stad in de Maak and Havensteder, but also on the practical side, namely building a feasible business case.

Housing corporation 2 said Stad in de Maak can try to work towards having everything under control both socially and financially:

"Als zij het beter onder controle hebben. En ze hebben daar positieve geluiden over dan zal ik eerder wellicht bij een ander project denken, van: oke ze hebben zowel sociaal als financieel onder controle."

Conclusion

Similar to the connection between the barriers and the conditions for self-organization, the connection between enablers and conditions for self-organization is also complex and can be divided into practical organizational aspects and deeper layers such as trust and motivation. However, less enablers than barriers have this complex connection. Several enablers also are either more on the practical side, or on the side of the deeper communication aspects.

4.3.3 COMPARISON AND CONCLUSION

To conclude, several remarks can be made.

First of all, '(a common) intrinsic motivation' and 'mutual trust within and beyond the organization' are the most hampered by the found barriers. Furthermore, 'room for initiatives', and specifically the variable 'available space', was mentioned most in relation to the barriers. The variable 'rules collective use', part of the condition 'rules for collective use and decision-making', was connected the most to the found barriers. In sum, the overall division of the influence of barriers on the conditions for self-organization proved to be quite evenly spread, but 'definition of boundaries of the initiative' and 'financial feasibility' stayed a bit behind.

Secondly, looking at the enablers, four out of six conditions were connected to four enablers. 'Rules for collective use and decision-making' and 'definition of boundaries of the initiative' were connected to one and two enablers, respectively. 'Available space', a variable part of 'room for initiatives', was connected to barriers eight times, the most of all variables.

Thirdly, comparing the barriers and enablers, it is interesting to note that, even though 7 barriers were found and 9 enablers, more connections were made for barriers than for enablers, namely 37 versus 32 in total, respectively.

Next to that, especially for barriers, the division in conditions for self-organization related to practical aspects (e.g. rules) versus communication aspects (e.g. trust) blended. Several barriers had influence on communication aspects, as well as practical aspects. In several interviewee statements these different aspects blended, for example when the lack of rules for use of the commons also led to irritation or trust challenges.

In sum, Stad in de Maak can work on the following conditions: '(a common) intrinsic motivation', 'mutual trust within and beyond the organization', 'room for initiatives', and 'rules for collective use and decision-making'. Thus, both practical and communication-related aspects can be improved. The enablers the interviewees proposed can support: '(a common) intrinsic motivation', 'mutual trust within and beyond the organization', 'room for initiatives' and 'financial feasibility'. There is thus a partial overlap between the hampered conditions and what the enablers can improve.

5 CONNECTION SHARING ECONOMY

In this chapter, the results of the analysis of two connections are presented: between Stad in de Maak's sharing economy and its conditions for self-organization, and connection between Stad in de Maak's sharing economy and its social capital. For the analysis, the variables for the conditions for self-organization (Appendix B1) and the variables for social capital (Appendix A2) were used.

Interviewee responses regarding the characteristics, advantages, and disadvantages of sharing economy were used to discover if a connection to the self-organization and/or social capital variables is present. This analysis used the same table set-up as has been explained in section 4.3. In section 5.1, the connection between Stad in de Maak's sharing economy and its conditions for self-organization is presented. This is followed by the connection between Stad in de Maak's sharing economy and its social capital in section 5.2.

5.1 SHARING ECONOMY & SELF-ORGANIZATION

In this section, the connection between Stad in de Maak's sharing economy and its conditions for self-organization is presented. The connection was made based on what interviewees stated about the characteristics, advantages and disadvantages of the sharing economy at Stad in de Maak. The results are presented in section 5.1.1, 5.1.2, and 5.1.3, respectively. Section 5.1.4 concludes the analysis with comparisons and conclusions.

The complete table with the connection of sharing economy to the conditions for self-organization can be found in Appendix B3. The findings have been visualized in figure 5.1.1. In this figure, the circles below the characteristic/(dis)advantage indicate which conditions the characteristic/(dis)advantage is connected to.

Condition	Variable	Interviewee	'Use of idle assets' content response interviewee
Room for initiatives	Available space	Resident 1	The commons in her building is always available.
		Resident 2	The commons in her building is always available.
		Co-founder 1	The commons in the buildings are available if people need them.
	Like-minded people	Resident 2	Through the shared commons, an artist temporarily joined Stad in de Maak, allowing for an exchange of ideas.
Financial feasibility	Feasible business case	Resident 1	Through a friend, old cinema chair were used for free to set up an event at Stad in de Maak.

Condition	Variable	Interviewee	'Consumer-to-consumer interaction' content response interviewee
(a common) Intrinsic motivation	Interest/enjoyment	Resident 1	Through sharing, the residents have become friends, which resident 1 likes.
		Resident 2	Resident 2 enjoys talking to and learning from a diverse group of people.
Mutual trust within and beyond the organization	Trust within group	Resident 2	Resident 2 feels comfortable sharing her home with others because she trusts them.
Rules for collective use and decision-making	Rules collective use	Co-founder 1	One user of the commons decided to set up rules for the spaces he uses regularly.
Definition of boundaries of the initiative	Collective understanding	Resident 1	Sharing spaces leads to a flat organization creating an atmosphere in which everyone should be heard.
		Co-founder 1	Sharing leads to a community which can show their ideas to the outside world.
Room for initiatives	Like-minded people	Resident 2	Through interaction, a big network arises which you can tap into whenever you need it.

Condition	Variable	Interviewee	'Acces rather than ownership' content response interviewee
Mutual trust within and beyond the organization	Trust within group	Resident 1	Sharing of spaces creates a community spirit, within and beyond Stad in de Maak.
	Trust beyond group	Resident 1	Sharing of spaces creates a community spirit, within and beyond Stad in de Maak.
Room for initiatives	Available space	Resident 1	The commons in her building is always available.
		Resident 2	The commons in her building is always available.
	Like-minded people	Resident 2	Through the shared commons, an artist temporarily joined Stad in de Maak, allowing for an exchange of ideas.

Table 5.1.1. Sharing economy characteristics and conditions for self-organization. (own ill.)

Condition	Variable	Interviewee	'Saving time and money' content response interviewee
Room for initiatives	Available space	Resident 1	She wanted to set up a cinema, which was easily possible because of the available space.
		Resident 2	She wanted to set up an exposition and it was possible through the commons.
Financial feasibility	Feasible business case	Resident 1	Sharing things and spaces means you have to invest less money.
		Co-founder 1	Through sharing a micro economy can rise.

Condition	Variable	Interviewee	'Having a strong community & network' content response interviewee
(a common) Intrinsic motivation	Interest/enjoyment	Resident 1	She enjoys the personal relationship with other residents.
		Resident 2	She enjoys knowing what everyone is up to and having the opportunity to share spaces or resources.
Definition of boundaries of the initiative	Collective understanding	Resident 1	Sharing spaces leads to a flat organization in which there is a vibe that everyone should be heard.
		Co-founder 1	Sharing leads to a community which can show their ideas to the outside world.
Room for initiatives	Like-minded people	Resident 1	Within Stad in de Maak you can find residents who are working on things you are also interested in.
		Co-founder 1	Sharing leads to a community which can show their ideas to the outside world.

Table 5.1.2. Sharing economy advantages and conditions for self-organization. (own ill.)

Condition	Variable	Interviewee	'Intense relationships' content response interviewee
(a common) Intrinsic motivation	Interest/enjoyment	Resident 1	Sharing spaces and sharing a life leads to intense relationships.
		Resident 2	Her roommates struggled with making and reinforcing rules for the commons, which led to irritation.
Rules for collective use and decision-making	Rules collective use	Resident 2	Her roommates struggled with making and reinforcing rules for the commons.

Condition	Variable	Interviewee	'Complex communication' content response interviewee
Mutual trust within and beyond the organization	Trust within group	Resident 2	The trust within the group is hampered because communication does not always run smoothly.
	Trust beyond group	Resident 2	There is limited contact with neighbors, and not all residents in her building trust the neighbors.
Rules for collective use and decision-making	Rules collective use	Resident 1	It is hard to make rules about cleaning, because sharing can be intense.
		Resident 2	Roommates of resident 2 have had discussions about how to use the commons and this communication did not run smoothly.
Definition of boundaries of the initiative	Collective understanding	Resident 1	There is very little contact with other buildings, and people are unaware what everyone is up to.
		Resident 2	Because of limited communication, not everyone is up to speed of what happens within Stad in de Maak.
Room for initiatives	Like-minded people	Resident 1	With some people the bond is closer, with others it is less close.
		Resident 2	Not everyone has the same willingness to share what they are doing within Stad in de Maak.

Condition	Variable	Interviewee	'Lack of usage empty spaces' content response interviewee
(a common) Intrinsic motivation	Interest/enjoyment	Resident 2	She gets annoyed when nothing happens in the free common spaces.
Rules for collective use and decision-making	Collective understanding	Co-founder 1	When the common spaces are not used, the discussion arises whether as co-founder you should actively motivate residents to organize events in the commons.

Table 5.1.3. Sharing economy disadvantages and conditions for self-organization. (own ill.)

5.1.1 CHARACTERISTICS SHARING ECONOMY

Based on the analysis, it became clear that all conditions for self-organization can be connected to the sharing economy characteristics, apart from 'definition of boundaries of the initiative'. 'Room for initiatives' was the condition which has the strongest connection with the characteristics of sharing economy. 'Consumer-to-consumer interaction' is the sharing economy characteristic which can be connected to most conditions. Table 5.1.1 presents the findings per characteristic.

Use of idle assets
This characteristic was addressed 5 times, for 2 conditions, by both residents and co-founder 1. This characteristics can create room for initiatives, as commons in the buildings of residents stand idle. This benefits the organization itself, but can also broaden the network through finding outside people who are in need of a space. Resident 2 explained that an external artist got the opportunity to do an exposition at her building: *"Marijke Brinhof geloof ik, die kwam hier om een expositie te doen en dat is dan dus wel gewoon dat pakketje van sharing economy, want die ruimte kan je gewoon gebruiken want die staat hier vrij. Dan moet dat gewoon. Dan kan dat gebruikt worden voor iedereen die via Stad in de Maak daar interesse in heeft zeg maar."*
Co-founder 1 elaborated that initiatives can take flight if the space is available: *"Het is spontaan ontstaan en door de bewoners zelf vanuit en vanuit hun mogelijkheden. Je kunt wel een cinema bedenken, maar als je geen ruimte hebt, dan heeft het ook geen zin."*

Consumer-to-consumer interaction
This characteristic was addressed 7 times, for 5 conditions, by both residents and co-founder 2. Consumer-to-consumer interaction can be connected to interest/enjoyment, trust, rules for collective use, collective understanding and finding like-minded people. This characteristic of sharing economy is more connected to communication aspects of self-organization, and less so to the practical aspects. Resident 2 illustrates the impact of the network of Stad in de Maak's sharing economy on her daily life: *"Dat je een enorm netwerk hebt waar je heel veel uit kan putten als je ergens mee in de knoop zit. Heel fijn dat ik gewoon iemand kan bellen om te vragen of ze me kunnen helpen met dagelijkse problemen."*

Access rather than ownership
This characteristic was addressed 5 times, for 2 conditions, by residents 1 and 2. The fact that spaces are accessible can support trust, but also exchange of ideas with others in the organization. The connection of 'access rather than ownership' with conditions for self-organization is quite similar to the connection of 'use of idle assets' with

conditions for self-organization. Resident 1 described how sharing leads to different levels of community; with her roommates but also with the neighbors: *"So there's like different levels of community, let's say. So if there are other people that want to make use of the space for an event or workshop or talk or whatever. They have the right to do."*

5.1.2 ADVANTAGES SHARING ECONOMY

Based on the analysis, it became clear that both advantages can be connected to three conditions. However, the advantage 'saving time & money' is only connected to variables 4 times, whereas 'having a strong community & network' is connected 6 times.
The condition 'room for initiatives' is influenced by both advantages, and is also connected the most. '(a common) Intrinsic motivation', 'definition of boundaries of the initiative' and 'financial feasibility' can be connected to one advantage; the former two by 'having a strong community and network' and the latter by 'saving time and money'.
Both advantages influence 3 conditions, though 'saving time & money' is only referred to 4 times and 'having a strong community & network' 6 times. 'Room for initiatives' is influenced by both advantages, and is also mentioned the most times. '(a common) Intrinsic motivation', 'definition of boundaries of the initiative' and 'financial feasibility' can be influenced by one advantage; the former two by 'having a strong community and network' and the latter by 'saving time and money'. Table 5.1.2 presents the findings per advantage.

Saving time and money
This advantage was addressed 4 times, for 3 conditions, by both residents and co-founder 1. The idle assets provide opportunities for initiatives, and the fact that time and money are saved, might contribute to the financial feasibility of Stad in de Maak. However, this is not the case currently. Co-founder 1 did address that the restaurant for rent, in the commons of the Banierstraat, did already create a micro-economy which covers the fixed charges for the room: *"Het restaurant bijvoorbeeld is wel zo een beetje het idee dat daar in elk geval de vaste lasten van die commons mee betaald worden."*

Having a strong community & network
This advantage was addressed 6 times, for 3 conditions, by both residents and co-founder 2. Similar to the characteristic 'consumer-to-consumer interaction', this advantage can be connected to the communication-related aspects of self-organization. Resident 1 addressed the personal relationships and that everyone should be heard: *"It's the personal relationship actually Ilike. (...) We tend to not occupy space individually you know like in discussions. So there's this vibe that everybody is to be heard."*

5.1.3 DISADVANTAGES SHARING ECONOMY

Analyzing the results makes clear that the disadvantage 'complex communication' can be connected to the most variables (8) and conditions for self-organization (4). 'Intense relationships' and 'lack of usage empty spaces' both can be connected to 2 variables, but the former is linked to 2 conditions and the latter only to 1 condition.

All conditions, apart from 'financial feasibility' can be linked to the sharing economy disadvantages. None of the conditions can be linked to all disadvantages. The other conditions are linked either to one disadvantage or two, but otherwise no big differences can be noted. Table 5.1.3 presents the findings per disadvantage.

Intense relationships

This disadvantage was addressed 3 times, for 2 conditions, by both residents. The two remarks that were made, were that intense relationships can arise because of sharing, and that setting up rules and reinforcing rules was a bit of a struggle for the roommates of resident 2. This lead to irritations: *"Ik weet wel dat Luuk het dus beneden af en toe een beetje irritant vond dat Charlotte de ruimte niet opruimde nadat ze hadden gedrukt daar, dat soort dingen. Je moet heel erg afspraken maken om het een beetje rollende te houden."*

Complex communication

This disadvantage was addressed 8 times, for 4 conditions, by both residents. Problems such as knowledge sharing or limited contact can influence trust and finding like-minded people, but also more practical aspects such as setting up rules for collective use. This result is quite similar to the 'complex communication' barrier to self-organization mentioned in section 4.3.1. This barrier also showed an ambiguity between practical aspects and communication aspects regarding the conditions for self-organization.

Lack of usage empty spaces

This disadvantage was addressed 2 times, for 2 conditions, by resident 2 and co-founder 1. The lack of usage leads to irritation for resident 2, as she does not like the empty spaces. Furthermore, the lack of usage of the empty spaces creates differences in opinions of the co-founders, which could hamper collective understanding. Co-founder 1 addressed these difference with the following statement: *"Erik heeft echt zoiets van, nee dat moeten we aanjagen. Ik heb zoiets van vrije ruimte is vrije ruimte, als er niks gebeurt, dan gebeurt er maar niks. Je hebt de ruimte, als je er niks mee doet, nou jammer dan. Maar goed, daar denkt niet iedereen op dezelfde manier over."*

5.1.4 COMPARISONS AND CONCLUSIONS

In section 4.3.3, it was concluded that the conditions '(a common) intrinsic motivation' and 'mutual trust within and beyond the organization' are the most hampered by the found barriers to self-organization. In this section, it is analyzed whether characteristics and (dis)advantages of sharing economy can be connected to the conditions for self-organization. The goal was to understand if sharing economy can support the conditions that are hampered by the barriers. Below, conclusions on how sharing economy might support conditions for self-organization are given per condition.

A common intrinsic motivation

The variable 'free choice' is hampered by several barriers to self-organization. None of the sharing economy characteristics or (dis)advantages can be connected to free choice. The variable 'interest/enjoyment' is hampered by several barriers, namely 'differing motivations', 'lack of rules for decision-making' and 'setting up rules for sharing'. The characteristics and advantages of the Stad in de Maak's sharing economy can be connected to 'interest/enjoyment'. Disadvantages can be connected as well. The characteristics and advantages that can be connected are 'having a strong community & network' and 'consumer-to-consumer interaction'. Disadvantages are 'intense relationships' and the 'lack of usage of empty spaces'.

Thus, there are many barriers that could hamper this condition, but the aspects having a strong community & network and consumer-to-consumer interaction of the sharing economy might have a positive effect.
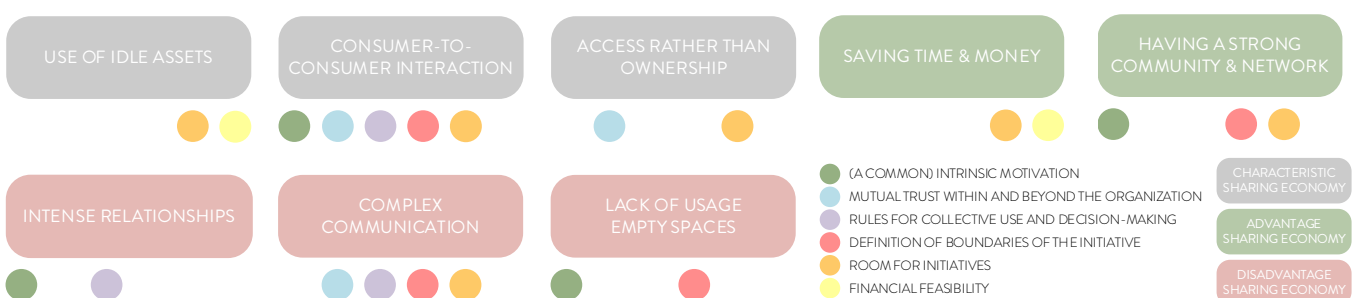

Figure 5.1.1. Sharing economy and self-organization. (own ill.)

Mutual trust within and beyond the organization

Both variables - trust within group and trust beyond group – are hampered by the found barriers, but the latter variable is connected most to the found barriers to self-organization. The sharing economy characteristic 'access rather than ownership' can be connected to this condition. There are no sharing economy advantages that can be connected to this condition. Regarding disadvantages of Stad in de Maak's sharing economy, 'complex communication' can influence both forms of trust. This disadvantage was also noted as a barrier to self-organization.

Thus, communication might be a problem for trust within and beyond the organization. The characteristics 'consumer-to-consumer interaction' and 'access rather than ownership' might contribute positively to trust.

Rules for collective use and decision-making

The variable 'rules for collective' is hampered several times by the barriers to self-organization as found in the interviews. This could be mostly attributes to the lack of rules within Stad in de Maak, and to complex communication.

Sharing economy, i.e. the characteristic 'consumer-to-consumer interaction', can be connected to this condition. However, the disadvantages 'intense relationships' and 'complex communication' can also be connected to this condition. There are no advantages of the sharing economy that can be connected to this condition.

In sum, the disadvantages 'intense relationships' and 'complex communication' need to be reduced in order for the sharing economy to have a positive influence on this condition.

Definition of boundaries of the initiative

This condition is hampered by barriers regarding motivation, communication and rules for sharing.

From sharing economy perspective, the characteristic 'consumer-to-consumer interaction' and the advantage 'having a strong community & network' might be able contribute to this condition. However, the disadvantages 'complex communication' and 'lack of usage of empty spaces' were also connected to this condition.

In sum, the disadvantages 'complex communication' and 'lack of usage of empty spaces' need to be reduced in order for the sharing economy to have a positive influence on this condition.

Room for initiatives

'Room for initiatives' is the condition which can be connected most to the found barriers to self-organization. Finances and the dependence of the institutional environment are big influence on the condition. Furthermore, motivations and complex communication are mentioned in relation to these variables.

All sharing economy characteristics can be connected to this condition, especially to the variable 'available space'. Also, both sharing economy advantages can be connected to the variables. The advantage 'saving time and money' can be connected to 'available space', and 'having a strong community & network' can be connected to 'like-minded people'. The characteristic 'consumer-to-consumer interaction' can also be connected to 'like-minded people'. Even though all advantages and characteristics can be connected to this condition, the disadvantage 'complex communication' can also be connected to this condition, namely to the variable 'like-minded people'.

In sum, the disadvantage 'complex communication' needs to be addressed to improve the variable 'like-minded people'. Creating more space or making more use of idle assets are options to improve the variable 'available space', as this connection proved to be quite strong.

Financial feasibility

The condition 'financial feasibility' was hampered by the barrier 'finances'. The sharing economy characteristic 'use of idle assets' and advantage 'saving time and money' have been addressed in relation to this condition. No disadvantages of Stad in de Maak's sharing economy have been addressed in relation to the condition 'financial feasibility'.

In sum, optimizing the use of idle assets might help support this condition.

Conclusion sharing economy & self-organization

In conclusion, there is some overlap between the hampered conditions and the influence that Stad in de Maak's sharing economy could have on these conditions. However, disadvantages of its sharing economy are often connected to these conditions as well. The condition 'room for initiatives' had the most clear connection to Stad in de Maak's sharing economy, as it was connected to all sharing economy characteristics and advantages.

Communication and rules were noted as barriers that hamper Stad in de Maak's conditions for self-organization. Stad in de Maak's sharing economy might have a positive influence on these hampered conditions. However, the disadvantages of Stad in de Maak's sharing economy also affect these conditions, most notably the disadvantage 'complex communication'. To create a maximum positive effect of Stad in de Maak's sharing economy, its disadvantages need to be reduced. The communication tool will focus on this, as will be explained in chapters 6 and 7.

5.2 SHARING ECONOMY & SOCIAL CAPITAL

In this section, the analysis of the connection between Stad in de Maak's sharing economy and its bonding, bridging and linking social capital is presented. The analysis of the connections was carried out based on what interviewees stated about the characteristics, advantages and disadvantages of the sharing economy at Stad in de Maak. These statements were connected to variables for social capital. The results are presented in section 5.2.1, 5.2.2, and 5.2.3, respectively. Section 5.2.4 concludes the analysis with comparisons and conclusions.

The complete table with the connection of sharing economy to social capital can be found in Appendix B4. The findings have been visualized in figure 5.2.1. In this figure, the squares below the characteristic/(dis) advantage indicate which forms of social capital the characteristic/(dis)advantage is connected to.

5.2.1 CHARACTERISTICS SHARING ECONOMY

Looking at the sharing economy characteristics, all forms of social capital have been addressed in relation to them. Bonding capital had the biggest prevalence. It was noted 9 times, and all characteristics of Stad in de Maak's sharing economy have been mentioned in relation to bonding capital. Bonding with co-founders had the least prevalence. The characteristic 'consumer-to-consumer interaction' is connected to both forms of bonding capital and to bridging capital. 'Use of idle assets' and 'access rather than ownership' were connected to bonding and linking, and bonding and bridging, respectively. The table shows quite a difference between bonding capital and the other three forms of social capital. The relationship between sharing economy and bonding (with co-founders), bridging and linking capital is quite weak. Table 5.2.1 presents the findings per characteristic.

Form of social capital	Variable	Interviewee	'Use of idle assets' content response interviewee
Bonding	Communication	Resident 2	The group worked together to think about what to organize in the free spaces, creating a community feeling.
		Co-founder 1	The idle commons resulted in a small-scale initiative to be extended to the larger scale. This improved the community spirit.
	Association	Resident 1	Regularly borrowing stuff from other people led to more knowledge about what everyone is doing.
Linking	Communication	Co-founder 1	The relationship with Havensteder was based on the fact that Havensteder had property standing idle.
		Housing corporation 1	The relationship with Stad in de Maak was based on the fact that Havensteder had property standing idle.

Form of social capital	Variable	Interviewee	'Consumer-to-consumer interaction' content response interviewee
Bonding	Communication	Resident 1	Through sharing, resident 1 learns from other people.
	Association	Resident 1	Through sharing, resident 1 became friends with the others.
		Resident 2	Resident 2 is happy because she talks to a lot of people through sharing and knows what these people are up to with their lives.
	Trust	Resident 2	Resident 2 feels comfortable sharing her home with others because she trusts them.
Bonding with co-founders	Communication	Co-founder 1	The co-founders have their offices close to the common spaces, and share these spaces with the residents of that specific building.
Bridging	Trust	Resident 1	The open commons, for example the laundry room, creates a connection with the neighborhood.

Form of social capital	Variable	Interviewee	'Access rather than ownership' content response interviewee
Bonding	Communication	Co-founder 1	Actively sharing a common space contributes to a community feeling.
		Resident 1	Actively sharing a common space contributes to the community spirit.
Bridging	Communication	Resident 1	The spaces are available for everyone, also outside the building,
		Resident 2	An external artist came to Stad in de Maak for an exposition.

Table 5.2.1. Sharing economy characteristics and social capital. (own ill.)

Use of idle assets

This characteristic was addressed 5 times, for bonding and linking social capital, by both residents, co-founder 1 and housing corporation 1.

Looking at bonding capital, the idle assets trigger the group to set up initiatives in the commons, and improve the community spirit. Furthermore, regular borrowing from roommates leads to more association among them. Resident 1 described that Stad in de Maak comes together for new ideas: *"Because we come together only when there's like common issues to be discussed or when we see each other in the stairs. When we discuss new ideas."*

Looking at linking capital, the fact that the properties of Havensteder were idle assets, was what started the collaboration with Stad in de Maak in the first place. In this way, it helped form linking capital.

Consumer-to-consumer interaction

This characteristic was addressed 6 times, for both forms of bonding social capital and for bridging capital, by both residents and co-founder 1.

'Consumer-to-consumer interaction' is connected to bonding capital as it helps people to stay up-to-date of each other's lives, residents learns from one another, build friendships and start trusting each other.

Resident 1 enjoys learning what everyone is doing, especially during the Tuesday dinner at the Almondestraat: *"En ik word gewoon heel erg gelukkig van weten wat mensen aan het doen zijn, in zo'n groep bijvoorbeeld. Ik vind het ook heel leuk om op dinsdagavond even naar de Almondestraat te gaan en dan kom je gewoon mensen tegen die allemaal een eigen project hebben. Allemaal hun eigen passie en daar leer ik gewoon heel veel van om met hen te praten of te horen wat ze aan het doen zijn."*

Access rather than ownership

This characteristic was addressed 4 times, for bonding and bridging social capital, by both residents and co-founder 1. The process of access, thus sharing, renting or exchanging, allows residents to bond and create a community spirit. This extends beyond the boundaries of Stad in de Maak, as neighbors or other external people are also allowed to take part in Stad in de Maak and use the commons. Resident 2 believes it is indispensable that these opportunities are present in a neighborhood: *"Dat zijn gewoon allemaal dingen waar ook de buurt van mee mag genieten. Niet dat er zomaar een buurman bij die werkplaats aan de slag gaat, maar wel, er kan hulp gegeven worden. Ik denk dat dat gewoon onmisbaar is in een stad."*

5.2.2 ADVANTAGES SHARING ECONOMY

The connection between the noted advantages of Stad in de Maak's sharing economy and social capital is quite weak. Only 'having a strong community & network' was connected to social capital, and solely to bonding capital. Table 5.2.2 presents the findings per advantage.

Saving time and money

This advantage was not addressed in relation to bonding, bridging or linking capital.

Having a strong community & network

This advantage was addressed 3 times, for bonding social capital, by both residents. The themes that were addressed were quite similar to the findings for the sharing economy characteristic 'consumer-to-consumer interaction'. Residents stay up-to-date of each other's lives, learns from one another and can build friendships.
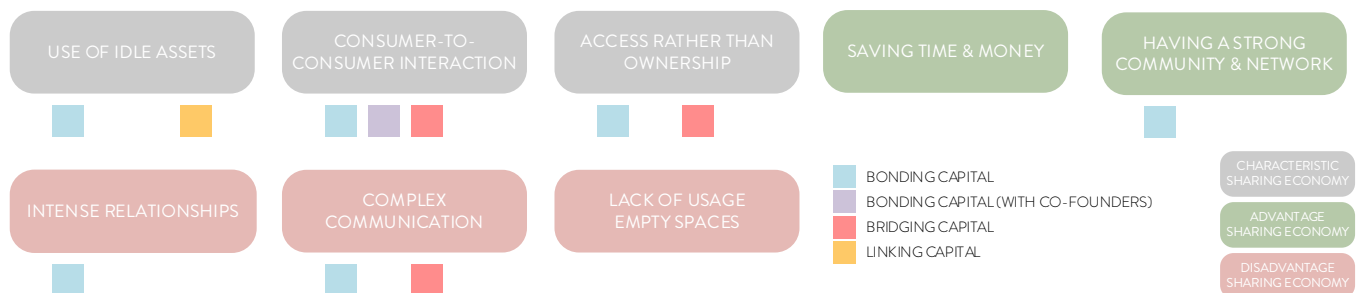
Figure 5.2.1. Sharing economy and social capital. (own ill.)

Form of social capital	Variable	Interviewee	'Having a strong community & network' content response interviewee
Bonding	Communication	Resident 1	Through sharing, resident 1 learns from other people.
	Association	Resident 1	Through sharing, resident 1 became friends with the others.
		Resident 2	Resident 2 is happy because she talks to a lot of people through sharing and knows what these people are up to with their lives.

Figure 5.2.2. Sharing economy advantages and social capital. (own ill.)

5.2.3 DISADVANTAGES SHARING ECONOMY

The analysis shows that two disadvantages can be connected to bonding capital, and one to bridging capital. However, the connection with bridging capital only consists of one response (for the disadvantage 'complex communication), and is thus a quite weak link. No connection was found between the disadvantages and bonding (with co-founders) or linking capital. Furthermore, the disadvantage 'lack of usage empty spaces' was not connected to any form of social capital. The link between the disadvantage 'intense relationships' and bonding capital was also quite weak, consisting of one response. The relationship between the disadvantage 'complex communication' and bonding capital was the only quite strong relationship, consisting of five connections. Table 5.2.3 presents the findings per disadvantage.

Intense relationships

This disadvantage was addressed 1 time, for bonding capital, by resident 1. She stated that living together means getting involved in other people's problems: *"And we have our own problems, our own issues and the home then becomes this kind of stage where everything clashes. You know, sometimes you get affected also from other people's problems. It can become problematic, it's something personal to you."*

Complex communication

This disadvantage was addressed 6 times, for bonding and bridging capital, by both residents and co-founder 1. Communication issues hamper the relationship among residents, and lead to trust issues, for example. Resident 2 addressed a situation in her room at the Bloklandstraat regarding the empty bedroom she shares with her roommates. A friend of hers wanted to stay in that room, and she expected that not to be a problem. When she discussed it with her roommates, it turned out that her roommate did not feel completely comfortable. Resident 2 noticed that there are varying levels of trust with her and her roommates: *"We hebben dus laatst tijdens dat etentje, hebben we het er wel over gehad dat er iemand boven in de kamer zou komen slapen. Via best wel ver. Iemand die ik helemaal vertrouw, maar voor Ingmar voelde dat bijvoorbeeld iets te ver weg. Die zei, ik wil niet dat de deuren op slot moeten. Dus ik zei nee maar dat hoeft ook niet, want je kan mij gewoon vertrouwen. We moeten op elkaar vertrouwen dat dat goed zit."*

Resident 2 shared a similar situation with the neighbors. The commons in her building is closed to the neighbors, as her roommate is afraid that neighbors would want to steal his expensive woodworking machinery: *"Wat er nu met Luuk gebeurt en zijn werkplaats, is dat hij zo veel dure apparatuur heeft en gewoon een beetje bang is dat als hij de gordijnen openzet dat mensen daar naar binnen gaan gluren en dingen willen jatten."*

Lack of usage empty spaces

This disadvantage was not addressed in relation to bonding, bridging or linking capital.

Form of social capital	Variable	Interviewee	'Intense relationships' content response interviewee
Bonding	Communication	Resident 1	Resident 1 gets involved in other people's problems, because you share your living space.

Form of social capital	Variable	Interviewee	'Complex communication' content response interviewee
Bonding	Communication	Resident 1	Sharing means that you need to make decisions about spaces with a lot of people.
		Resident 2	Sharing sometimes leads to irritation among residents.
		Co-founder 1	Setting up rules for sharing is not easy, people get annoyed because of the lack of these rules.
	Association	Resident 2	Not everyone is aware of what everyone is doing within their commons.
	Trust	Resident 2	She had a situation with roommate where trust along the sharing of the spaces was compromised.
Bridging	Trust	Resident 2	Her roommate does not trust the neighbors to access the commons.

Table 5.2.3. Sharing economy disadvantages and social capital. (own ill.)

5.2.4 COMPARISONS AND CONCLUSIONS

In section 4.1.4, several findings on the social capital of the residents and co-founders of Stad in de Maak were presented. The main points of improvement for all forms of social capital are listed below.

For bonding capital, the level of trust and association between residents could be improved. Bonding capital between residents and co-founders shows a division between residents and co-founders. The findings on bridging capital showed a difference in capital between residents and co-founders. Furthermore, the relationship with neighbors could be improved, and residents have limited relationships with other collaborative housing communities. Lastly, there were several remarks made for linking capital. Residents have zero to none linking capital, whereas the co-founders do have linking capital. Furthermore, The level of trust between Stad in de Maak and Havensteder could be improved, the relationship with the municipality could be improved, and Stad in de Maak could start building relationship with other housing corporations.

Below, conclusions about whether sharing economy might support social capital are given. The section concludes with statements whether sharing economy could facilitate the social capital improvements mentioned above.

Conclusion bonding capital

Bonding capital among residents is the form of social capital that sharing economy can be most connected to. All characteristics can be connected to bonding capital, especially regarding communication and to a lesser extent association.

'Having a strong community & network' is an advantage of Stad in de Maak's sharing economy that can be connected to communication and association. Looking at its disadvantages, 'intense relationships' and 'complex communication' can be connected to bonding social capital.

In sum, there is a relatively strong connection between Stad in de Maak's sharing economy and bonding capital, but this relationship is present for both positive and negative (i.e. its disadvantages) aspects.

Conclusion bonding capital (with co-founders)

There is a weak relationship between Stad in de Maak's sharing economy and bonding capital with co-founders. There is one connection between the characteristic 'consumer-to-consumer interaction', as at the Pieter de Raadtstraat the co-founders also take part in sharing the commons, which supports bonding with the co-founders. There are no connections for the advantages and disadvantages of Stad in de Maak's sharing economy.

Conclusion bridging capital

For bridging capital, there is a weak connection as well. Some relationships with neighbors can be attributed to the sharing economy characteristic 'access rather than ownership'. 'Consumer-to-consumer interaction' is connected to a level of trust with neighbors. However, 'complex communication' is a disadvantage which also can be connected to the level of trust with neighbors. No advantages can be linked to bridging capital.

In sum, the sharing economy might contribute to building more bridging capital with neighbors. However, this relationship is quite weak. Also, trust is an issue that needs to be addressed.

Conclusion linking capital

Looking a linking capital, there is a very weak relationship between sharing economy and linking capital. Stad in de Maak uses spaces that Havensteder does not use, and thus idle assets. This is the only linking relationship that can be attributed to sharing economy.

Conclusion sharing economy & social capital

To conclude, Stad in de Maak's sharing economy only has a relatively strong connection to bonding capital. In section 4.1.4, it was found that the level of trust and association between residents could be improved. Strengthening Stad in de Maak's sharing economy might help to support this. However, the disadvantages of the sharing economy of Stad in de Maak, especially 'intense relationships' and 'complex communication', were also linked to bonding capital. As a result, the disadvantages of Stad in de Maak's sharing economy need to be reduced, before the sharing economy can positively contribute to the level of bonding capital among the community. The communication tool will focus on this, as will be explained in chapters 6 and 7.

6 CREATIVE SESSION

The first step from the empirical phase to the synthesis phase, consisted of carrying out a creative session with co-founders and residents of Stad in de Maak, and external participants. This creative session is the step from interview findings to designing the communication tool.

In section 6.1, the starting point of the creative session and the problem statement the session focused on are described. It is explained how the input from the previous chapters led to the creative session and to the communication tool. In section 6.2, the results from the creative session are presented. A reflection on the creative session from several perspectives is presented in section 6.3.

Photographs of the creative session are given in Appendix C2.

Before presenting the creative session, it is important to elaborate how the input from chapters 4 and 5 has been used as a starting point for both the creative session and the communication tool. The results from the interviews showed that Stad in de Maak faces a diversity of barriers, as well as disadvantages of its current sharing economy.

It was found in section 5.1 that sharing economy might help to support conditions for self-organization. However, the responses about Stad in de Maak's sharing economy were also ambiguous. To give an example, sharing among residents leads to a stronger community, but also makes relationships more intense. Thus, the characteristics of Stad in de Maak's sharing economy were often simultaneously a benefit and a problem. To be more specific, communication-related issues among residents such as a lack of trust, setting up rules, streamlining communication and creating a willingness to share need to be solved. Only then, Stad in de Maak's sharing economy can support its conditions for self-organization.

Furthermore, it was found in section 5.2 that sharing economy can help build bonding capital among Stad in de Maak's residents. However, the aforementioned communication challenges complicate this relationship – between Stad in de Maak's sharing economy and its bonding capital – as well.

This relationship is visualized in figure 6.1.1, on the left. This diagram shows that Stad in de Maak's sharing economy characteristics and advantages can have a positive influence on Stad in de Maak's self-organization and bonding social capital. This is visualized with green arrows. However, Stad in de Maak's sharing economy disadvantages negatively influence this positive relationship. This influence has been visualized with a red arrow. The diagram on the right in figure 6.1.1 then presents what the communication tool should do: it should positively influence Stad in de Maak's disadvantage and as a result lessen them. As a result, the negative influence on the positive relationship between Stad in de Maak's sharing economy and its self-organization/bonding social capital will lessen.

One current challenge for Stad in de Maak's sharing economy was selected as starting point for the creative session and development of the communication tool. This was done, as focusing on all challenges Stad in de Maak faces is not feasible within the boundaries of this research. The selected challenge was set up with one of the co-founders from Stad in de Maak, and was: problems regarding rules for the commons and reinforcement of these rules. This challenge is a component of the disadvantages of the sharing economy that were found, namely 'intense relationships', 'complex communication', and to a lesser extent 'lack of usage of empty spaces'. For that reason, it fits well with the proposed improvements of Stad in de Maak's sharing economy as presented in sections 5.1.4 and 5.2.4.

Below, the problem statement that was the starting point for the session is stated:

"There are no clear rules for using the commons, but (for example at the Pieter de Raadtstraat) they are present. The biggest problem is what will happen when the rule is broken. Rules without sanctions do not work, but defining and enforcing mild, democratic sanctions without creating a wedge in the group when sanctioning, is complicated. A flat organization in strived for, in which everyone's consent is important.

The lack of (enforcement of) clear rules complicates for example when people can use the commons, which possibly leads to less activity in the commons. When the size of the commons grows, such as in the Almondestraat, it will become increasingly hard to regulate the commons.

To summarize: the lack of usage rules for the commons and reinforcing of these rules is a problem, especially when the commons or the network grows bigger than the current situation."

This can be summarized in the following question, which was the starting point for the creative session:
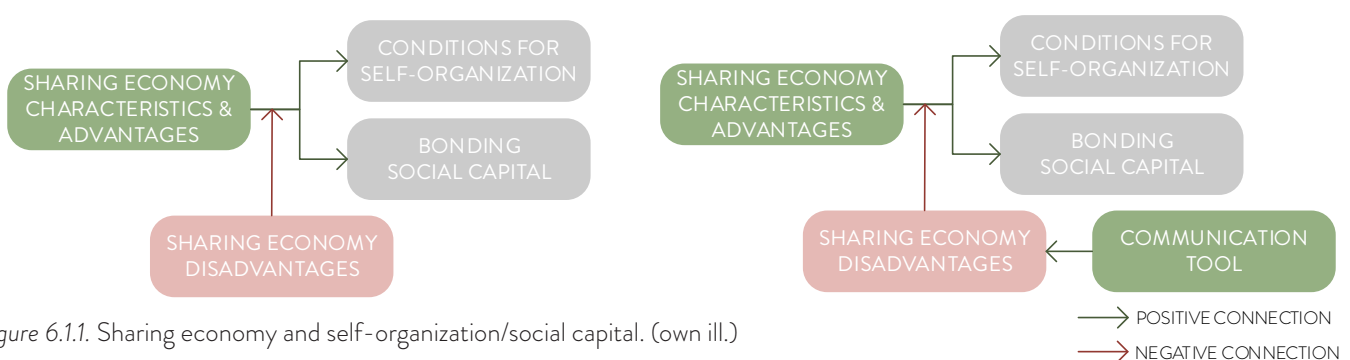*How can we govern the commons by creating and reinforcing rules?*

Figure 6.1.1. Sharing economy and self-organization/social capital. (own ill.)

6.2 RESULTS

The session started with a discussion of what the governance of the commons entails according to participants. During this discussion it became clear that the opinions of what the boundaries of the problem are, are diverse. The problem is hard to demarcate.

Nevertheless, a list of components was set up, visible in table 6.2.1. In this table, 'governance' is used as the umbrella term for rules and reinforcement of rules.

IDEAS

During the session, several ideas have been put forward. By participants Some were one post-it, other ideas were more elaborate. The ideas are presented in table 6.2.2. The right column, 'Contributes to', clarifies which aspects of governance of the commons the idea supports, according to the participants. For example, if an idea contributes to 7, it contributes to 'Equal investment of time'.

CONCEPTS

Halfway through the session, the group was split into two to develop ideas from the dream-nightmare scenario into more thought-out concepts. However, both groups stayed on a quite abstract level.

Below, both concepts are explained, and it is stated what aspects of governance these ideas could contribute to.

Concept 1: God in a machine

A god-like machine with artificial intelligence will be built, which does the thinking for you. As Stad in de Maak tries to steer clear from hierarchy, this concept addressed that a form of organization and governance is necessary, but no one wants to take the lead or enforce ideas upon others. This AI machine will do it for them.

Using new technologies, the AI tool can be an app/online tool which is created through open source technology and uses blockchain. The app is programmed and fed within a diverse and equal environment. Another important aspect is to have an endless loop of feedback processes.

Within the app, the elements that the community deem most important, must be included. It will focus on the resources of the community: the available knowledge, time schedule, planning and management, building trust. The makers can integrate enforcement techniques, but afterwards the app will take over.

To sum up, the concepts consists of an app which will function as an all-encompassing management tool for the commons.

This concept contributes to: 1, 3, 4, 5, 6, 8

Concept 2: Eco governance

The second group focused on ecology as a starting point of how to use the commons and make rules in the commons. One participant stated: "The ecological dictate creates a hierarchy based on what the building would want. How would the building want to be used?" Another idea behind their concept was the statement: "You can use me for free but you cannot harm me."

The group had discussions about the visual form of the dictate: the ecological dictate could be a pyramid, a circle, a square. If formulated as a pyramid, the group created the following hierarchy: TIME – THE COMMONS – CITY – NEIGHBORHOOD – PEOPLE – NATURE (figure 6.2.1). The rationale would be to follow this line of thinking when organizing something in the commons or using the commons: 'How would nature want me to use the commons?' Followed by: 'How would people want me to use the commons?' Followed by: 'How would the neighborhood want me to use the commons?' And so on. Using this hierarchy allows users to address all components that are important for and have to do with the commons. However, the main point of discussion within the group was how to define this hierarchy. The conceptual output is clear, but how to shape this output was still a problem. Furthermore, some group members felt a big aversion towards the word hierarchy.

To solve this, the group concluded that, in order for the ecological dictate to work, a meeting would need to be organized to think about the hierarchy.

This concept contributes to: 1, 2, 3, 4, 8, 9.

PERSONAL IDEAS BASED ON INPUT

Based on the ideas and concepts developed in the creative session, I formulated some personal ideas as well. These are visible in table 6.2.3.
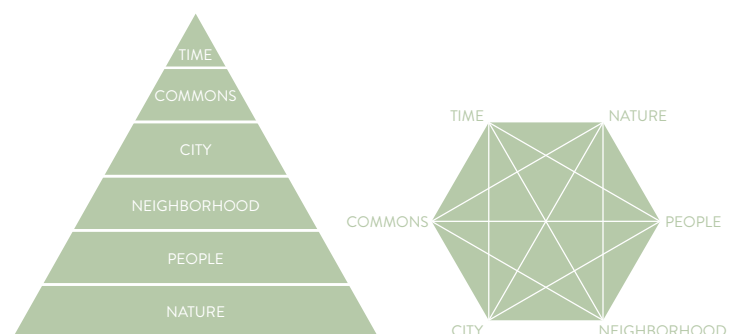

Figure 6.2.1. Eco governance. (own ill., based on participants' drawings)

WHAT IS PART OF THE GOVERNANCE OF THE COMMONS?

#	GOVERNANCE ASPECT	REQUIREMENT (ACCORDING TO PARTICIPANTS)
1	Scalable	Stad in de Maak will most likely grow. Rules and governance should be able to **adjust to the scale**, either big or small.
2	Support diversity	Governance and rules should **support using the commons for all sorts of purposes**.
3	Reinforcement through consensus	Reinforcement should **be developed in consensus**, to ensure rules are lived by.
4	Flat organization	Governance should consist of a **non-hierarchical, flat system**.
5	Efficient decision-making	Governance should **facilitate efficient decision-making**, possibly by laying out a standardized system for decision-making.
6	Efficient conflict-solving	Governance structure **supports conflict-solving**, possibly by laying out a standardized system for decision-making.
7	Equal investment of time	All people involved should **invest an equal amount of time** in the commons.
8	A common vision on sharing	There needs to be **a common vision on what sharing means** within the commons among the group.
9	Forming a community	Governance should support **being a community**. Individuals as a result not only feel responsible for their own gain, but for the gain of the community.

Table 6.2.1. Components of governance of the commons, according to participants. (own ill.)

IDEA	CONTRIBUTES TO
Problem voting The session showed that often participants (the ones involved within Stad in de Maak) were unable to agree on a problem, or disagreed on which problems were the most important. This results in a lack of focus. The proposed idea is a 'problem voting'. Residents and co-founders can send a problem they experience within Stad in de Maak to a neutral moderator. He or she bundles the problems, and makes a list of problems. This list is presented, either online or in a group meeting, and everyone can vote one time on a specific problem. The problem with the most votes will be the one to be solved first. There can be no discussion whether that problem is important or not. This technique might trigger the group to get started on solving problems, instead of merely discussing what the problems are.	3, 4, 5, 6
Creative session without co-founders present During the session, it was apparent that the co-founders have quite a strong opinion on how things within Stad in de Maak should be solved. However, in the interview they addressed that they want the residents to be initiators and the ones working on improving Stad in de Maak. Organizing a creative session without co-founders present, for example to solve the problem found with the 'problem voting' technique, could contribute to empowering residents.	2, 7, 9
Idea jar in the commons One of the ideas above was focused on using collective knowledge. This idea builds upon that. Every (two) week(s), a problem is selected, for example by using the problem selection method above. In the commons at the Pieter de Raadtstraat, an idea jar is placed. Residents and visitors can leave ideas on pieces of paper in the idea jar. At the end of the one or two week period, all ideas are brought together and used to form a solution.	2, 4, 6

Table 6.2.3. Personal ideas, based on creative session input. (own ill.)

IDEA	CONTRIBUTES TO
Have an open online calendar (e.g. Google, Facebook) for the usage of the commons By creating a calendar which is easily accessible for every user, the usage of the commons can be streamlined. When someone wants to organize something in the commons, (s)he can put it in the calendar. In this way, the room is reserved for the activity, and others can see what is happening in the commons, making it serve as a form of knowledge sharing as well.	4, 5, 6
Set up a charter using a participatory process Not all users/people involved are on the same page regarding the commons. A participatory meeting can be used to create a charter (manifesto) about the commons and the rules for the commons. It must be noted that rules like these are already present, but possibly a revision is necessary to be on the same page.	2, 3, 4, 8, 9
Make a list of suggestions for rules and vote on them using dot voting With dot voting, red round stickers are used to vote on ideas. As a group, Stad in de Maak can think of rules. These can be hung on the walls, and then red dots can be placed by residents/co-founders on the rules they deem important. This system will easily show which rules have most backing.	3, 4, 5, 6
Use rotating governance systems Stad in de Maak wants to steer clear from hierarchical and top-down governance solution. One way to keep things fresh, is by using a rotating system, thus applying changing every 6 months, for example. This can be executed in several ways, by using a board which rotates, or using a different governance system. In every new time period, fresh energy will ensure the residents/co-founders stay sharp on how the commons is governed.	4
Create committees Committees can be set up for specific purposes within Stad in de Maak, e.g. activities, finances, facility management, and so on. These committees take the lead on that specific topic, and are responsible for penalties on wrongdoings in that specific department as well. To avoid strong hierarchy, these committees can regularly rotate as well.	3, 4, 5, 6, 9
Set up a protocol revision every 6 months In order to shape and reshape the governance protocol, a revision can be instated every 6 months. At the revision, the past 6 months are reviewed and future goals and rules are set up.	4
Create a get-to-know-each-other spot, for example a coffee corner A coffee machine or other vending machine can be used for bonding among residents/co-founders.	9
Organize sessions with timed talking slots Could it be that the people who talk the loudest have the worst ideas? Or that those with the best ideas are the most silent? By creating sessions in which everyone gets and equal opportunity to talk, great ideas might be heard.	1, 3, 4, 5, 6
Base the sharing of tasks on time and ability Tasks within Stad in de Maak can be divided based on the ability and available time of people to do these tasks. In this way, talent and potential can be used optimally. So, instead of looking at who 'wants' to do the task, you can look at who is best fitted to do the task.	1, 2, 5, 6, 7
Start testing governance ideas, simply to learn Stad in de Maak has very clear ideas on the characteristics of the governance, but no on the actual content. These constraints might be limiting. Test driving governance systems can help to learn about what works and what doesn't, thus learning by doing.	2
Use collective knowledge to solve problems Stad in de Maak is a diverse group of people. This leads to a vast amount of knowledge. Tapping into collective knowledge can be helpful to solve problems. This can be done by making an overview of people's expertise or interests, or actively sharing problems that are encountered with each other to see who might be able to help.	4, 6, 7, 9

Table 6.2.2. Ideas of participants. (own ill.)

6.3 REFLECTION

This section consists of a reflection on the process of the creative session. The reflection consists of three aspects: general, the role of the co-founders, and the problem statement. This second aspect has been highlighted, because after the creative session, two participants shared their reflection on the role of the co-founders during the creative. The remarks that are made in this section, are used in the following chapter for setting up design requirements for the communication tool.

6.3.1 GENERAL

Five remarks can be made regarding general aspects.
First of all, in the problem as perceived stage, it became clear that there was a broad interpretation of the problem of Stad in de Maak. Participants kept adding on aspects, and as facilitator it was hard to keep the problem demarcated.
Secondly, in the nightmare-dream stage, it was striking that it was much easier to get ideas for the nightmare scenario than for the dream scenario. This is not necessarily good or bad, but it might illustrate that it is more complex to think of things that are 'good' or contribute to 'good things' than it is to think of things that are 'bad' or make things go wrong.
Thirdly, some participants struggled with thinking outside of their paradigm and spawning ideas. Many times, the phrase 'Postpone judgment' had to be stated out loud, either as facilitator or by other participants. Some words were also off limits, such as the word 'hierarchy', but also ideas such as using a pyramid, as a pyramid is vertical which suggests hierarchy. Participants noted afterwards that this discourse limited their idea freedom.
Moreover, the final products were quite abstract, and proposed more of a goal than how to reach that goal. Still, this could be a start to think about the road towards the goal.
Lastly, looking at the atmosphere of the session, it can be noted that everyone was active and engaged during the session. Apart from the friction with trying to postpone judgment, the atmosphere was good.

6.3.2 THE ROLE OF THE CO-FOUNDERS

After the session, two participants shared their thoughts on the role of the co-founders during the session.
First of all, one participant stated that she noted that the co-founders don't want to create a hierarchy but do present hierarchical solutions. She stated that it could be useful to revisit the relationship between self-organization and hierarchy, believing that hierarchy is necessary to make self-organization thrive.
Secondly, both participants noted that co-founders were convinced by and actively promoting their own ideas. This was clear in the final stage, namely the clustering & converging stage. In this stage, the co-founders chose clusters, instead of letting the residents choose, which also lead to quite similar final concepts. The clusters they chose, consisted of mainly their own ideas. This action did not match with the opinion of the co-founders expressed in the interviews that they want the residents to take charge.
Lastly, the cleanup of the session was mainly done by co-founders and me as facilitator. This could be a sign that residents do not feel responsible for the commons.

6.3.3 PROBLEM STATEMENT

In this session, the goal was to find solutions to the following problem:
How can we govern the commons by creating and reinforcing rules?
In this section, it is elaborated on whether the developed ideas and concepts can contribute to dealing with this problem. Furthermore, it is stated whether this session, regarding content, provides a good starting point for designing the communication tool.

In the session, fourteen ideas (of which three personal ideas) and two concepts were developed. The concepts were not necessarily more thought out or elaborate than the ideas, even though that was the goal of the session.
At the beginning of the session, nine aspects of governance were formulated. Table 6.3.3.1 shows how many times ideas or concepts have contributed to these aspects. The right column states the amount of times this aspect has been 'contributed to' by a formulated idea or concept resulting of the creative session. This connection is made based on the comments from participants regarding the aspects of governance.

The requirements were elaborated on in table 6.2.1. The results show that 'flat organization' is often contributed to, as many ideas and concepts discourage the idea of hierarchy.

Three aspects, namely 'efficient conflict-solving', 'efficient decision-making', and 'reinforcement through consensus' are often contributed to. This is positive, as the main goal was to focus on setting up rules and reinforcing these rules. 'Equal investment of time' and 'a common vision of sharing' were less often contributed to by ideas.

However, even though the ideas may contribute to Stad in de Maak's governance of the commons, it has been mentioned that the ideas and concepts were still quite abstract. They cannot be easily translated into actual solutions. Thus, on content-level, the creative session did not lead to tangible output useful for the communication tool. However, it did provide valuable insights into Stad in de Maak, as discussed in section 6.3.1 and 6.3.2. These insights can be used for setting up design requirements for the communication tool.

	GOVERNANCE ASPECT	MENTIONS
1	Scalable	4 times
2	Support diversity	6 times
3	Reinforcement through consensus	7 times
4	Flat organization	12 times
5	Efficient decision-making	7 times
6	Efficient conflict-solving	9 times
7	Equal investment of time	3 times
8	A common vision on sharing	3 times
9	Forming a community	6 times

Table 6.3.3.1. Mentions of governance aspects in ideas (own ill.)

7 COMMUNICATION TOOL

In this chapter, the communication tool which has been developed based on the findings of this research are elaborated on.

In section 7.1, the step from the research findings to the design requirements is elaborated on. In section 7.2, these design requirements are used to brainstorm initial idea and match/mismatch these ideas to the design requirements. In section 7.3, the prototype '(Im)Perfection Puzzle' is elaborated on by stating how the tool works, what the essence is, and why it has been designed in this way. The communication tool test is elaborated on in section 7.4, including the set-up, findings from the test, proposed adjustments to the tool, and reflections on the findings of the research based on the findings from the tool test.

As mentioned in chapter 5, Stad in de Maak's sharing economy might support its conditions for self-organization. Furthermore, Stad in de Maak's sharing economy can help build bonding capital among its residents. However, Stad in de Maak's sharing economy also faces challenges, which have been defined as disadvantages. These are: 'intense relationships', 'complex communication' and the 'lack of usage of empty spaces'. Especially the former two hampers the positive relationship between Stad in de Maak's sharing economy and both its self-organization and its bonding social capital.

Following from this, it was decided to develop a communication tool to deal with communication-related issues at Stad in de Maak. Input for this tool was gathered through carrying out a creative session with residents, co-founders and external designers. This is explained in figure 7.1.1, which was yet presented in section 6.1. On the left, the positive relationship between Stad in de Maak's sharing economy and its conditions for self-organization and bonding social capital is visualized with green arrows, combined with how its disadvantages hamper this relationship (visualized with red arrows). On the right, it is shown that the communication tool focuses on reducing the disadvantages, with the goal of letting the positive relationship between Stad in de Maak's sharing economy and its self-organization and bonding social capital flourish.

In this section, the findings from the interviews (chapter 4) and the creative session (chapter 6) are combined to set up design requirements for the communication tool. These design requirements can be split into three main components: the *target group* of the tool, the *physical design* of the tool, and the *goal* of the tool. The goal of the tool means what the effect of the tool should be.

Takeaways from the interview findings
As stated, the disadvantages of Stad in de Maak's sharing economy, namely 'complex communication', 'intense relationships', and 'lack of usage of empty spaces', hamper the positive relationship the sharing economy could have on self-organization and bonding social capital.

The meaning of these three disadvantages is quickly repeated.

Intense relationships is about the increased confrontation when you share spaces. Arguments between residents were noted.

Complex communication is about how it is hard to set up rules for sharing, especially when steering clear of any form of hierarchy, which Stad in de Maak wants. Furthermore, finding the time to talk to each other, being involved with each other's problems, and the lack of knowledge sharing within and between buildings was noted.

Lack of usage of empty spaces means that the commons often stand idle, to the dislike of a resident and co-founders.

Takeaway for the communication tool: the tool will focus primarily on the former two disadvantages. However, improving communication may also lead to increased use of the commons, as plans are made more easily, for example. As a result, the tool might benefit the use of the empty spaces as well.

As a result, the tool should:
- Improve the relationship between residents;
- Improve knowledge sharing.

Please not that these are not the design requirements. These will be developed based on these takeaways at the end of this section.
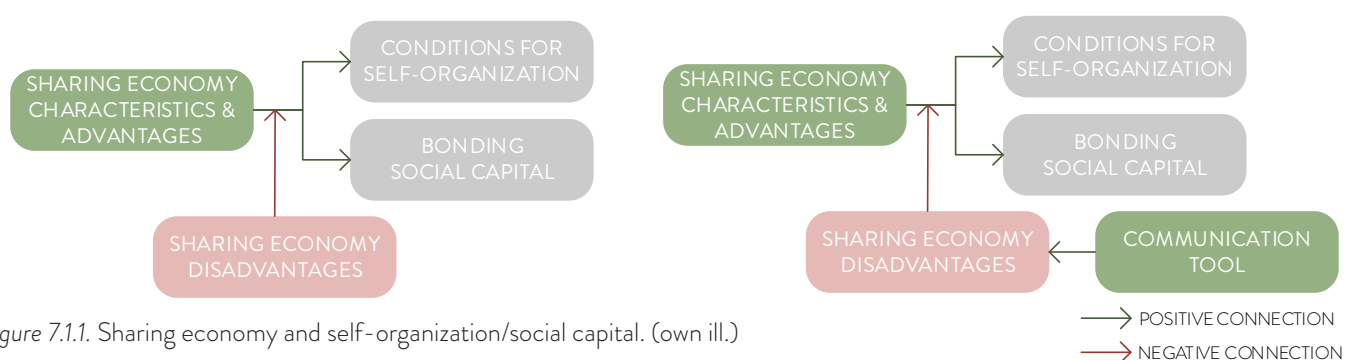

Figure 7.1.1. Sharing economy and self-organization/social capital. (own ill.)

In the previous chapter, the creative session and its outcomes were described. In this section, the important takeaways for the communication tool are distilled.

In section 6.3, the creative session and its results were reflected upon. It was found that the ideas that were developed in the creative session were still quite abstract. The session was actually more helpful to get a better insight in the characteristics of the problems at Stad in de Maak. The takeaways of the creative session are thus not about the actual design of the tool, but what the tool should be designed for. Three important remarks can be made.

First of all, even though the creative session focused on a specific problem (i.e. rules and reinforcement of rules in the commons), it became clear that the problems at Stad in de Maak are still very broad. Demarcating the problem was hard, and everyone has a slightly different idea of what is important.

Secondly, residents and co-founders stuck within their paradigm when developing ideas, even though a creative session is designed in such a way that it should get people outside the box. The paradigm, and most specifically resent of the concept of 'hierarchy', was steadfast.

Lastly, the co-founders were quite dominant during the session. This contradicts the interview responses of the co-founders, who stated that they would like the residents

to take control. Also, they do not want to be 'the boss'. It did, however, confirm resident interview responses that there is a certain hierarchy between residents and co-founders.

To translate these takeaways, the tool should:
- focus on expressing the ideas and problem, so it can be demarcated better;
- help people to think outside the box;
- focus on residents instead of the co-founders.

Please not that these are not the design requirements. These will be developed based on these takeaways at the end of this section.

Setting up the design requirements

The above provided details on how to use the research input up until this point towards setting up design requirements. As mentioned, these are divided into: the target group of the tool, the physical design of the tool, and the goal of the tool. The design requirements have been summarized in table 7.1.1. In this table, the requirements are stated, combined with which of the three components it belongs to. Furthermore, it is stated which of the takeaways above this requirement is based on, and which research step this takeaway came from.

In sum, the tool should be *fast and easy to use*, support the *relationship between residents*, and is intended for *sharing ideas and opinions*.

	#	REQUIREMENTS: THE TOOL SHOULD…	BASED ON	
TARGET GROUP	1	…**be used by the residents** of Stad in de Maak.	Avoiding dominance of the co-founders, allowing residents to take control.	Creative session
PHYSICAL DESIGN	2	…be **fast and easy to use** in sessions.	Residents are stuck in their paradigm. This can lead to repetitive communication. A fast and easy tool helps to avoid repetition.	Creative session
	3	…be able to be used by **a group of at least 10 people**.	Stad in de Maak is a large community, and group discussions might be present.	Interviews
TOOL GOAL	4	…support sessions at Stad in de Maak in which residents want to get a **quick overview of everyone's idea or opinion**.	The problems at Stad in de Maak are not demarcated well enough and residents' opinions vary. Furthermore, knowledge-sharing between residents should improve.	Interviews & creative session
	5	…allow residents to express their ideas in an **easy manner**.	The problems at Stad in de Maak are not demarcated well enough and residents' opinions vary.	Interviews & creative session
	6	…make **residents realize that there will be no perfect solution**.	Residents are stuck in their paradigm, which can lead to repetitive communication. The tool needs to provide help quickly.	Creative session
	7	…**facilitate a streamlined process of communication**, without any dwelling or repetitive communication.	Residents are stuck in their paradigm, which can lead to repetitive communication. The tool needs to provide help quickly.	Creative session
	8	…**support building trust** among residents by allowing everyone to share their ideas or opinions.	Improving the relationship between residents, and contribute to bonding social capital.	Interviews
	9	…**support building association** among residents by allowing everyone to share their ideas or opinions.	Improving the relationship and knowledge-sharing between residents, and contribute to bonding social capital.	Interviews

Table 7.1.1. Design requirements. (own ill.)

7.2 DESIGN PROCESS

In this section, the process of the design of the tool is elaborated on. This is done by elaborating on ideas that were the result of a brainstorm. First, brainstormed ideas are presented in section 7.2.1. In section 7.2.2, the ideas are matched or mismatched to the design requirements presented in the previous section. Based on this, input is gathered for the design of the prototype, which is discussed in section 7.3.

7.2.1 RESULTS OF BRAINSTORM

Four tool ideas were brainstormed by using the design requirements (figure 7.2.1.1). These four ideas are elaborated on below. The number corresponds with the number in figure 7.2.1.1.

1. Idea twister board

This idea uses a game board similar to one used for the game 'Twister'. It has a rotating pointer in the center. The circle on the board is divided into several pieces. When several solutions are thought of for a specific problem, players can write their ideas on all the pieces of the cake. The pointer is turned, and for the idea it lands on, players have to think about what could go wrong, and what could go right for that solution. Then, they turn the board around, and a similar board appears, but on all the pieces of the 'pie' positive messages are written down, such as:

'Let's go!', 'You can do this!', 'Let's get started!'.
With this board, users become aware of the pros and cons of ideas, but are in the end motivated to start making their ideas a reality.

2. Devil's advocate

'Devil's advocate' is a card game consisting of several cards: a devil, an angel, three idea-makers, and voters.
At the beginning of a session, all participants draw a card. This card defines their role for the session.
The goal of the session is to develop ideas for a problem within Stad in de Maak, and vote for problems. However, as has become clear from the interviews, there will never be a perfect solution.
The 'idea-makers' have to develop ideas in one minute, and present these ideas. Then, the 'devil' and 'angel' both get a minute to raise pros and cons for the ideas. Based on their arguments, the voters have to vote for the best idea. A round of the game can be repeated until a solution has been developed which all residents agree to. Because the game uses pros and cons, residents get a more clear perspective on the downsides of the solutions. With this information in mind, they still can choose for a solution, thus accepting the downsides.
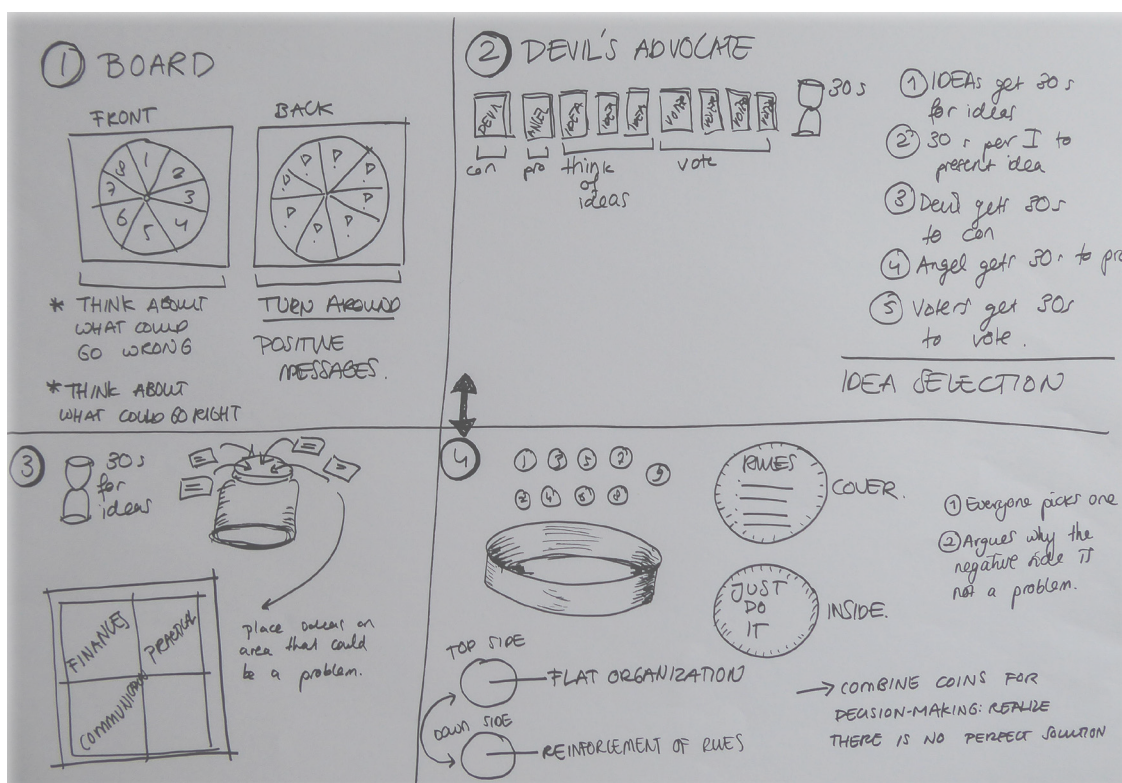

Figure 7.2.1.1. Ideas from the brainstorm. (own ill.)

3. Idea jar

This idea was partially based on one of the personal ideas from the creative session, namely using a jar of ideas in the commons (section 6.2, table 6.2.3). With this tool, participants get 30 seconds to think about as many solutions possible for the problem they want to solve or deal with. After writing them out, the ideas are put in a jar. Then, one by one the ideas are taken out and explained by its creator. A board is placed on the table next to the idea jar, with several sections of aspects that are important for Stad in de Maak. These could be anything, but examples are: 'Finances', 'Community', 'Hierarchy', 'Communication', 'Equal investment', 'Scalability', and so on. The ideas have to be placed on the section which could be a problem for that idea. For example, a solution could be great for the community, but very expensive. Then, the idea is placed on the section 'Finances'.

This practice gives residents insight in the shortcomings of ideas. With this knowledge, they can decide which shortcomings they are willing to accept.

4. Ambiguous tokens

The interview outcomes illustrated quite some ambiguity. This idea helps residents to understand the ambiguity and make a decision based on that knowledge.

Whenever an idea/solution for a problem within Stad in de Maak is proposed, this box with 'ambiguous tokens' can be used to understand how the solution would actually work. For example, Stad in de Maak wants to steer clear of hierarchy, but also wants to set up rules and reinforce these rules. This can create friction.

The ambiguous tokens are two-sided, and on both sides a concept or characteristic is named. For example, RULES is written on one side, and FLAT ORGANIZATION on the other. If a solution leads to rules, the 'FLAT ORGANIZATION' side is put down. This will make the residents realize that a solution will always lead to compromises. As a result, they can decide if they are willing to accept these compromises.

7.2.2 (MIS)MATCH WITH DESIGN REQUIREMENTS

To move from these four initial ideas towards prototype development, a match/mismatch table was used. In this table (7.2.2.1), design requirements are placed on the left, and on top the four brainstormed ideas are written. For every requirement, it is stated whether there is a match (green check mark) or mismatch (red cross) for the separate ideas. Below, it is discussed for every requirement why it matches or mismatches with the four ideas.

1. Used by residents

This requirement is a complete match, as all ideas were developed to be used by the resident.

2. Fast and easy to use

This requirement mismatches with all ideas. The ideas are quite complex and also most likely not very fast.

3. For a group of at least 10 people

All ideas can easily be scaled to fit at least 10 people, thus there is a match for all tool ideas.

4. Quick overview of everyone's idea or opinion

As mentioned, all brainstormed tools are not necessarily quick. However, the twister board does help with allowing everyone to express their ideas, as well as the Idea jar. On the other hand, Devil's advocate allows only a couple participants to share their idea, and Ambiguous tokens is focused on a solution that has already been developed. These thus do not lead to an overview of everyone's idea or opinion.

5. Express ideas in an easy manner

This requirement is about helping residents to simplify their ideas. None of the tools help to do so, as the tool only help the process of expressing it, but not how they express their ideas.

6. Realize there will be no perfect solution

All tool ideas help with the realization that there will be no perfect solution. Especially Ambiguous tokens is strong on that account, as it supports showing the ambiguity of every possible solution in an intuitive manner.

7. Facilitate a streamlined process of communication

Apart from Devil's advocate, none of the tools support streamlined communication. Devil's advocate works with a timer and structures who speaks, which facilitates streamlining. The other ideas are more at risk of leading to endless repetitive discussion.

8. Support building trust & 9. Support building association

The assumption is that, as the tool ideas all bring the group together, they will all contribute to building trust and association.

Findings from the match/mismatch

Based on this process of matching and mismatching, strengths and possible improvements in the four ideas can be spotted. This helps to define which aspects can be used in the final design, and which aspects need to be changed or get more attention.

Strengths: all tool ideas were easily scalable, brought the group together, and focused on ambiguity and perfection of solutions at Stad in de Maak. This ambiguity was particularly strong in the idea Ambiguous tokens, which uses shapes as an intuitive way to address ambiguity. Furthermore, a timer, as proposed for Devil's advocate, can help streamline communication.

Improvements: the tool design should be simplified to make it easier to use. Current tool ideas have a lot of steps which makes it complex when it does not need to be. Furthermore, the tool should support expressing ideas in an easy manner, which has not been addressed in these four tool ideas. Lastly, the tool should focus on allowing everyone to speak and present their ideas or opinion. This has not yet been addressed in the brainstormed ideas.

In sum, the match/mismatch shows that the brainstormed ideas need quite a few changes to meet the design requirements. For this reason, a new communication tool idea was developed, which incorporates the findings from this section. This prototype of the communication tool is presented in the next section.

#	REQUIREMENTS	IDEA TWISTER BOARD	DEVIL'S ADVOCATE	IDEA JAR	AMBIGUOUS TOKENS
1	Used by residents	✓	✓	✓	✓
2	Fast and easy to use	✗	✗	✗	✗
3	For a group of at least 10 people	✓	✓	✓	✓
4	Quick overview of everyone's idea or opinion	✓	✗	✓	✗
5	Express ideas in an easy manner	✗	✗	✗	✗
6	Realize that there will be no perfect solution	✓	✓	✓	✓
7	Facilitate a streamlined process of communication	✗	✓	✗	✗
8	Support building trust	✓	✓	✓	✓
9	Support building association	✓	✓	✓	✓

Table 7.2.2.1. Match/mismatch design requirements and brainstormed ideas. (own ill.)

7.3 PROTOTYPE: (IM)PERFECTION PUZZLE

Based on the findings from the brainstorm, a new idea was developed, which eventually was worked out into the communication tool prototype called '(Im)Perfection Puzzle'. The tool consists of a box filled with 12 geometrical shapes, made of wood, in the color green (figure 7.3.1). In section 7.3.1, how the tool is used is described, as well as the essence behind the tool and how it fits with the previous research findings. In section 7.3.2, design decisions are argued and it is clarified how the prototype in theory meets the design requirements.

7.3.1 USING THE TOOL

The '(im)perfection puzzle' can be used at any moment when the residents of Stad in de Maak have to make a decision, want to share ideas or think about a solution. It can be used to streamline conversations.

A session with the '(im)perfection puzzle' uses the following set-up:

1. Residents gather for the session, and set up a clear goal of the session. For example: come up with solutions regarding setting up and reinforcing rules for the commons.

2. In one minute, all participating residents select one shape from the box which best describes the idea/ opinion they have regarding the chosen subject.

3. All participants get 30 seconds to explain why they chose the shape by elaborating on what their idea/opinion is. When they are finished with their explanation, they place the shape on the table. Unless they are the first to do so, they have to attach their shape to the already present shapes. In doing so, they have to explain what, in their idea/opinion, is different or similar to the ideas of the other participants.

4. This process is repeated until everyone has put their shape on the table. Then, the group reflects on the imperfect puzzle that has begun to form on the table.

This set-up is also described in a manual, which accompanies the box (Appendix D1). The result from the session will be a collection of shapes with a lot of awkward spaces and imperfections.

The essence of the communication tool

As stated at the beginning of this chapter, the communication tool focuses on reducing the disadvantages of Stad in de Maak's sharing economy (figure 7.1.1). As a result, Stad in de Maak's sharing economy will improve. This will lead to both improved conditions for self-organization and increased bonding

social capital, as the analysis in chapter 5 showed. Also, social capital contributes to community empowerment, as found in the literature study in section 2.4. In sum, the tool contributes to both self-organization and community empowerment by improving Stad in de Maak's sharing economy. As a result, the development and continuation of Stad in de Maak as a cohousing project of may improve, which in the end may lead to increased affordability of housing. The connection to increased affordability of housing is elaborated on in detail in chapter 8. In this manner, the communication tool is at the center of this research, as it combines cohousing, sharing economy, self-organization and community empowerment.

Looking at the content of the tool, the disadvantages the tool aims to reduce, are: 'intense relationships', 'complex communication' and the 'lack of usage of empty spaces'. The idea behind the '(im)Perfection Puzzle' is that residents will learn about each other's opinions and have to search for common ground. Furthermore, working with the imperfect puzzle (the result of the session) might help them realize that, within a sharing economy, there is no perfect answer. As mentioned by interviewees, you will always have discussion or different opinions within (larger) groups of people. By accepting these differences and finding this common ground, residents can work towards dealing with the struggles they face. Setting up rules and reinforcement of rules, the topic of the creative session, is an example of a struggles. Thus, the tool is suitable for the topic of the creative session. However, its application is bigger, as the tool does not prescribe a topic, but merely guides a process. This means it can be used in any group situation in which imperfections and different opinions or ideas are at play.

7.3.2 DESIGN DECISIONS

Several characteristics were considered for the design of the communication tool.

The idea to create a puzzle which does not fit completely complied with the goal of showing imperfection and ambiguity. At first, the idea was to create puzzle pieces which do not fit, for example because the attachment between the two is too loose (figure 7.3.2.1). However, this might be confusing and limiting, as all puzzle pieces have to be attached at a defined spot. This idea was discarded, and it was decided to use shapes and use them as an analogy for people's ideas or opinions can be connected to literature. According to Buijs & Van der Meer (2012, p. 40), metaphors and analogies can help

pinpointing to or expressing problems. Based on this, this tool argues that metaphors and analogies can also help to express ideas or solutions. Also, according to Littlejohn & Foss (2010, p. 109), metaphors can capture the human capacity to engage with and create the world around us. With this idea in mind, metaphors might also help creating solutions for problems in the world around us.

Several considerations were made about the actual design of these shapes, namely on: form, color, size, height, and material. With the basic idea, you can vary a lot, and make all shapes different sizes, colors, materials, and so on. However, it was decided to only vary in shape. Otherwise, it might be hard to choose objects as they will all be very different. Varying only in one thing makes the differences easy to grasp for users of the tool.

For form, geometrical shapes were chosen, as these are most likely easy to understand and easy to produce.

For color, green was selected, which was based on literature. As stated in the design requirements, the tool should support a trusting environment. Literature was used to understand which color brings about the most positive associations. According to Kaya & Epps (2004), green is the color which leads to the most positive emotional responses. In their study, green elicited feelings of relaxation, calm, happiness, comfort, peace and hope, among others. This claim was supported by Valdez & Merabian (1994), who stated that green, next to blue and purple and varieties of these colors, was found to be the most pleasant color to look at.

The size, height, and material, were defined with the idea in mind that everyone should be able to hold the object, thus the shapes should not be too heavy. However, they should have a certain weight or size, to trigger movement with the residents when using the shapes. For these reasons, the shapes are made of wood and circa 15 cm wide.

In table 7.3.2.1, it is clarified for every design requirement why the '(Im)Perfection Puzzle' meets the requirement. It must be noted that this is in theory. In the following section, the test of the tool will be elaborated on. At the end of that section, it is stated whether, based on the findings from the tool test, the '(Im)Perfection Puzzle' indeed meets de design requirements or not.
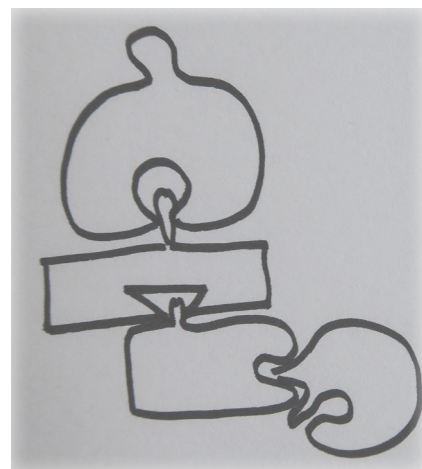
Figure 7.3.2.1. Sketch of the ill-fitting puzzle. (own ill.)

#	REQUIREMENTS	(IM)PERFECTION PUZZLE	HOW DOES IT MEET THE REQUIREMENT?
1	**Used by residents**	✓	It is developed to be used by the residents.
2	**Fast and easy to use**	✓	The shapes are simple, and the timer supports being quick.
3	**For a group of at least 10 people**	✓	The tool has 12 shapes, thus fits 12 people. It can also be scaled easily, by creating more shapes.
4	**Quick overview of everyone's idea or opinion**	✓	In timed rounds, all residents get the opportunity to share their idea or opinion.
5	**Express ideas in an easy manner**	✓	The shapes allow residents to express their ideas through analogies.
6	**Realize that there will be no perfect solution**	✓	The result, imperfect puzzle, triggers residents to think about overlaps/differences in their ideas.
7	**Facilitate a streamlined process of communication**	✓	By using a manual and a timer, the process is streamlined and a session does not take long.
8	**Support building trust**	✓	By spending time together, the level of trust a mong residents will most likely grow.
9	**Support building association**	✓	By sharing ideas/opinions, the association among residents will most likely grow.

Table 7.3.2.1. Match design requirements '(Im)Perfection Puzzle'. (own ill.)
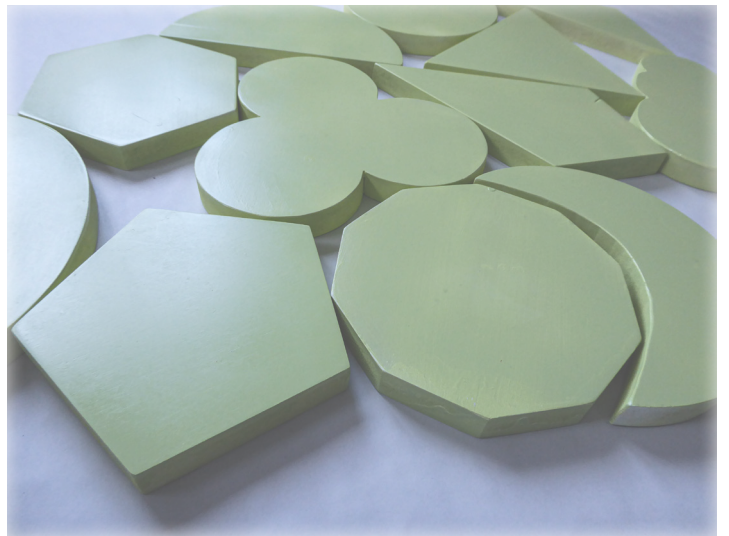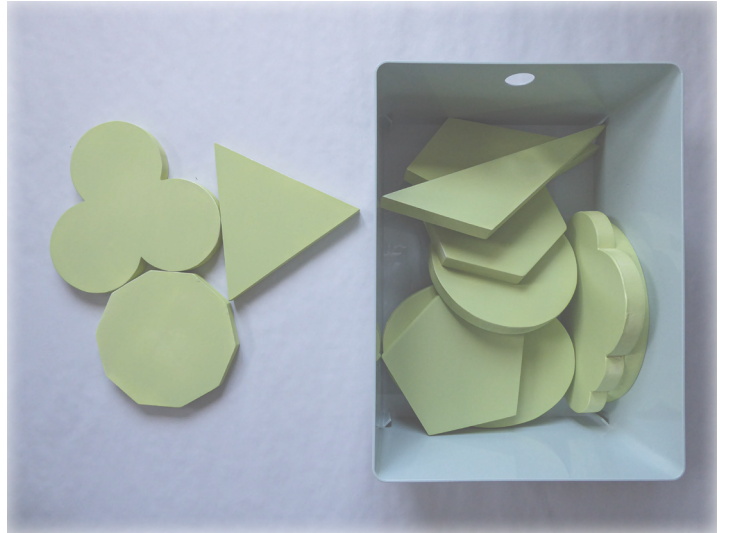
Figure 7.3.1. Photographs of the '(im)Perfection Puzzle'. (own illustrations)

7.4 TEST

In this section, the test of the communication tool '(im) Perfection Puzzle' is elaborated on. This step was the final part of this research project, and gave insight in the design of the communication tool, and the interview results.

This section consists of three parts. First, the goals of the test of the communication tool are shortly elaborated on in paragraph 7.4.1. This is followed by the findings of the test in paragraph 7.4.2. Paragraph 7.4.3 concludes this section by discussing the findings per goal and giving general conclusions.

7.4.1 GOALS

As mentioned in section 3.4.4, the testing session had two main goals.

First of all, the test was used to understand if the communication tool is clear and if the tool fulfills its design requirements as set up in section 7.1. Secondly, input from the test session was used to reflect on the interview findings regarding the sharing economy of Stad in de Maak.

At the end of the test session, participants filled out a form with questions, which can be found in Appendix D2.

7.4.2 FINDINGS

In this section, the findings from the test are presented. This is done in two steps. First of all, the answers to the reflection questions are given per question. Answers of all three participants are elaborated on. The participants are referred to as 'Participant 1', 'Participant 2', and 'Participant 3'. Secondly, other remarks which can be made based on the session are presented.

A few photographs of the test session can be found in Appendix D4.

7.4.2.1 Answers reflection questions

1. What did you think about the final result (i.e. the puzzle)?
Two of the three participants answered that the final result was "interesting". According to participant 1, the puzzle helped to structure thoughts and the conversation. Participant 2 stated that it helped to create a summary of the shared idea about the topic and how to translate it to a concrete solution. Lastly, the participant 3 stated the puzzle helped to bring three opinions together and reflect on these ideas.

In sum, according to the participants, the puzzle can help with structure and bringing ideas of several people together.

2. Do you think using this tool will help improve the sharing economy of Stad in de Maak? Why/Why not?
The answers to this question were slightly different. Participant 1 answered: "I'm not sure yet, we need to try it out more." Participant 2 answered that the tool can help, especially with structuring the conversation, but only if everyone engages in the session. This, according to him, relates to building commitment, which is a challenge within Stad in de Maak. Participant 3 answered that the tool can help push a conversation and put ideas together, especially because of time limits set when using the tool.

In sum, the tool might help, but there are some hurdles that need to be taken into consideration first.

3. Did using the tool give insight into the ideas of others regarding the conversation topic? Why/Why not?
All participants stated that the tool helps to give insight. According to participant 1, this is because everyone gets a chance to talk to each other. Participant 2 noted that the tool helps to give visual insight. However, he stated that it might be useful to put a name and key word or drawing on the shapes to remember what everyone had said, especially when the group gets larger. Lastly, participant 3 stated that it gives insight because it helps people explain their thoughts in a simple way, instead of through a complex discussion.

4. Did the tool contribute to a trusting atmosphere? Why/ Why not?
All participants stated that the tool contributed to a trusting atmosphere. Participant 1 stated that this was the case because they already know each other. According to participant 2, it contributed to a trusting atmosphere because it is a playful tool. Participant 3 stated it helps with trust because the simplicity of the tool triggers direct conversations.

In sum, the tool contributes to a trusting atmosphere according to the participants. Reasons for this vary.

5. Would you use this tool to optimize discussions within Stad in de Maak? Why/Why Not?
All participants stated that they would use the tool for optimizing discussions within Stad in de Maak. Participant 1 stated: "Yes, why not." Participant 2 stated he could imagine the tool being used, but he has a couple remarks. It is hard to build in consistency when using a tool like this, and he thinks a game moderator would be necessary to keep the focus during a session. Participant 3 stated

he thinks he would use the tool because it starts a conversation.

In sum, according to the participants they would use the tool to optimize discussion within Stad in de Maak, for varying reasons. However, there are some hurdles that may need to be addressed for it to work, according to one participant.

6. What drew your attention when selecting a shape?
The answers to this question varied. Participant 1 stated that selecting a shape was not easy, as you quickly have to think about how to translate your ideas into a keyword and then select an object that represents it. Participant 2 stated he selected a shape at random, but after he chose it, he got inspired to "give the shape symbolic meaning". Participant 3 stated he selected a shape by simplifying and visualizing his thoughts on the subject.

In sum, the answers were quite different. Participant 2 selected a shape at random, but participant 1 and 3 first translated their ideas into something they could use to choose a shape.

7. Was the manual clear? If not: what changes do you suggest?
The participants answered that the manual was clear. Two participants did also give suggestions for improvements. Participant 1 stated that the topic for the talk should be given beforehand, so that the communication tool becomes usable in the context of a real question. Participant 2 stated that he believes it needs more chapters. He stated: "After positioning shapes, it could go to a next round of shuffling the landscape", meaning that the stage after selecting shapes and placing the shapes on the table, there should be another stage clearly defined in the manual.

8. Are there any changes you would suggest for improving the tool?
Participant 1 was the only participant answering this question. She stated: "It should have another step after, so that there is some sort of conclusion moment." This can be linked to the remark of participant 2 at question 7, that another round should be added to the tool session.

7.4.2.2 Remarks participants
Remarks communication tool
Regarding the tool itself, seven remarks can be made.
First of all, the participants responded positively to the tool. They stated that they were happy that previous research steps had been used to create a tangible result. Participant 2 elaborated that this was the reason he joined the session. During the session, participants were active.

Secondly, the participants were able to select a topic for conversation quickly, namely how to deal with the commons and outsiders using their space. Participant 1 formulated it like this: "What do we do with other people using our space downstairs?" She talked about who from the Pieter de Raadtstraat opens the door for them, for example. It was interesting to see that they decided to choose a topic themselves, instead of using the pre-set topic 'rules and reinforcement of rules in the commons'.

Thirdly, participants selected shapes quite fast, well within the one-minute time limit. They selected the circle, hexagon and the cloud. The circle was selected because it, according to participant 1, is "most natural, similar to the commons". Participant 2 selected a hexagon because "the meaning of the commons is unclear". Participant 3 selected the cloud shape, because it is an uneven shape. He stated that he chose this because "everything looks really fine, but there is a struggle".

Fourth, the explanation of the ideas of participants went smooth, but thirty seconds proved to be quite short. However, this could also be a good thing, as it helps to avoid repetitive statements, which is a problem in Stad in de Maak's group discussions according to participant 2.

Next to that, the formation of the puzzle gave interesting results. The idea was that objects would be placed next to each other, but actually the participants piled the shapes, as shown in figure 7.4.2.1. They did this because their ideas contrasted, but also complemented each other.

Sixth, when the puzzle was finished, the participants struggled with how to continue. A conversation opened up and they discussed their ideas. Sometimes they referred back to the shapes to illustrate their ideas. However, more guidance might be necessary to help support this part of the process, as has also been stated in the answers to the reflection questions. Also, they slightly forgot everyone's ideas when putting down the shapes and participants stated that some help with that might be good as well.

Lastly, looking at content, it became clear that with the communication tool a conversation arose in which they were able to discuss the problem. They ended up on a slightly different topic than what they started with, because throughout the conversation they realized that was the more pressing or urgent problem.

Remarks Stad in de Maak
Regarding Stad in de Maak, four remarks can be made.
First of all, it was stressed that setting up rules and arranging ownership and responsibility in the commons is a problem, especially when people outside want to use the commons. Furthermore, according to participant 2, the group is too small to create a sense of ownership, which can also be a problem.

Second, it was stated that outsiders use Stad in de Maak's commons out of convenience, and not because they want to be a part of the community. When they do not need the space anymore, they leave again. This does not support building a strong community and network.

Thirdly, the conversation confirmed that communication is an issue. Participant 2 stated: *"communication is usually a problem when we set up initiatives"*.

Lastly, a remark was made related to trust within Stad in de Maak. Participant 2 said: "When someone takes the lead, it is immediately seen as leadership. People are distrusting within Stad in de Maak." He elaborated that he thinks people confuse taking the lead in an initiative with creating hierarchy, which is why sometimes initiatives fail to take flight.

Figure 7.4.2.1. The result: piled shapes. (own ill.)

7.4.3 CONCLUSION TOOL TEST
As stated in section 7.4.1, the test session had two goals:
- Understand if the communication tool is clear and fulfills its design requirements;
- Reflect on the interview findings regarding the sharing economy of Stad in de Maak.

The conclusions regarding these two goals are presented separately in sections 7.4.3.1 and section 7.4.3.2, respectively. The conclusions regarding the tool test session are given in section 7.4.3.3.

7.4.3.1 Tool clarity & design requirements
The design requirements (7.1) stated that the tool should:
1. ...be used by the residents of Stad in de Maak.
2. ...be fast and easy to use in sessions.
3. ...be suitable for a group of at least 10 people.
4. ...support sessions at Stad in de Maak in which residents want to get a quick overview of everyone's idea or opinion.
5. ...allow residents to express their ideas in an easy manner.
6. ...make residents realize that there will be no perfect solution.
7. ...facilitate a streamlined process of communication, without any dwelling or repetitive communication.
8. ...support building trust among residents by allowing everyone to share their ideas or opinions.
9. ...support building association among residents by allowing everyone to share their ideas or opinions.

Requirement 1: used by residents
This requirement is met. The tool was used by residents at the test, co-founders were not present.

Requirement 2: fast and easy to use
This requirement is met. The session took around 20 minutes, which is quite short. Furthermore, by using the manual, the residents were able to get started quickly.

Requirement 3: for a group of at least 10 people
This requirement is met. The tool consists of 12 shapes. In the test, only 3 were used, but the group could thus have been bigger.

Requirement 4: diverse opinions
Based on the session, it can be stated that the tool fulfills this requirement. According to the answers of the participants, the tool helped to create an overview of ideas and exchange ideas.

Requirement 5: easy expression of ideas
Based on the session, it can be stated that this requirement is fulfilled. The fact that it is a visual tool makes it easy to understand. Furthermore, participant 3 answered that the tool triggered conversations. Participant 2 stated that selecting a shape inspired him to attribute meaning to it.

Requirement 6: acceptance imperfect solution
Based on the results of the session, it cannot be identified whether this requirement has been fulfilled. The participants did elaborate on the difference between their opinions and that the tool helps them to find bridges between these differences, but perfection was not specifically addressed. It was also not asked specifically in the reflection questions.

Requirement 7: streamlined communication process
According to the answers of the participants, the tool supported streamlined communication. However, as participant 2 stated, a game moderator might be useful to ensure the process goes well.

Requirement 8: building trust
All participants stated that the tool contributes to a trusting atmosphere. However, according to resident 1, this is because they already know each other. This is a characteristic of the setting which cannot be attributed to the tool. According to resident 2 and 3, the playfulness of the tool and the fact that it triggers direct conversation, respectively, contribute to the trusting atmosphere.

Requirement 9: building association
All participants stated that the tool helped to learn the ideas of others. This could be attributed to the fact that everyone gets a chance to talk, to the visual aspect of the tool, and/or to the fact that everyone has to express their thoughts in a simple way.
However, participant 2 noted that it might be useful to put a name and key word or drawing on the shapes to remember what everyone had said, especially when the group gets larger.

Reflection clarity communication tool
Next to the design requirements, it will be stated whether the tool is clear.
Overall, participants were quite positive. Two main points of concerns were raised.
First of all, the final step of the session should be improved, thus once the puzzle is laid out. The participants proposed adding another step in the manual of the tool, stating how participants should work with the puzzle result. Examples of possible improvements are: reshuffling all objects after the first round, using a game moderator to streamline the process, or both. The participants got a bit lost with the final result. Setting up clear guidelines for this stage of the process could help work towards a more productive session.
Next to that, participants raised the concern that, when the group gets larger, it might be difficult to remember who said what and what all the shapes mean. The participants proposed having a moderator to keep an overview of everyone's opinion as a possible solution for this problem.

Adjustments to the tool based on the findings
The participants proposed some adjustments to the tool based on the test session. These adjustments have been incorporated into the new manual (Appendix D5). There are two main changes. First of all, users will have to write

a key word on a post it and attach it to the object. In this manner, everyone will remember the ideas of all the participants. Secondly, the final step – what to do with the puzzle result and reflecting upon it – has been adjusted. Once the puzzle has formed, participants have to answer the following questions:
- How could you reshuffle the puzzle to show the differences and similarities between everyone's ideas?
- What did you learn about the other participants?
- Can the ideas of everyone be combined into one idea?

These questions trigger participants to discuss differences and similarities in their ideas, visualize them, and to step beyond them by finding common ground. This may lead to the acceptance of imperfection, as participants realize that some people simply have other ideas, but they can as a group work towards finding common ground.
In sum, the adjusted manual intends to have two effects: make the process of using the tool easier, and improve the final reflection step of using the tool.

7.4.3.2 Reflection on interview findings
In this section, outcomes of the test session are used to reflect on the interview findings presented in section 4.1. Four remarks can be made.
First of all, it was stressed that setting up rules and arranging ownership and responsibility in the commons is a problem, especially when people outside want to use the commons. This had also been partially addressed as a disadvantage of the sharing economy, and as a barrier to self-organization. However, in the interviews, it was mentioned as a problem within Stad in de Maak, and not with people outside the community.
Secondly, it was stated that outsiders use the commons of Stad in de Maak out of convenience, and not because they want to be a part of the community. This was not found in the interviews, but could be connected to bridging capital and the relationship with the neighbors, for example. This finding shows that the bridging capital with external people using the commons could be improved.
Thirdly, in the session it was stressed that communication is an issue within Stad in de Maak. This has been addressed for both sharing economy and self-organization in sections 4.1.2 and 4.1.3, respectively. For sharing economy, it was found based on the interviews that 'complex communication' and 'intense relationships' can be a disadvantage. For self-organization, 'complex communication' was found to be a barrier. This has been confirmed through this communication tool test session. Lastly, a remark was made related to trust within Stad in de Maak, stating that residents of Stad in de Maak

are distrusting when people try to take the lead. Trust challenges were also found based on the interviews, when discussing the findings for bonding social capital (section 4.1.4). Furthermore, this finding confirms the fear of hierarchy which was present in the creative session (section 6.3).

7.4.3.3 Summary findings tool test

In sum, several main remarks can be made about the '(im) Perfect Puzzle' and the findings of the test session in relation to previous research findings.

First of all, the communication tool fulfills 8 out of 9 design requirements. One requirement was partially fulfilled. Design requirement 6, related to the acceptance of imperfection, could not be confirmed nor denied.

Secondly, the findings shows that improvements to the tool could be made regarding three things. First of all, the final stage of the process, after making the puzzle, should be more clearly outlined. Secondly, a game moderator could help support the process. Thirdly, it might be useful to have names or ideas attached to the shapes, so people will not forget what everyone said. A new manual has been proposed to deal with the issues that were found. This adjusted manual focuses on making the process

of using the tool easier, and support and improving the final reflection step of the communication tool. As mentioned, design requirement 6 (i.e. the acceptance of imperfection) has not been confirmed or denied. The improved reflection step, which consists of the participants answering questions about the puzzle at the end of the session, may help to reach this design requirement. The questions ask: the participants to reshuffle the puzzle to visualize the differences and similarities between participants ideas, what the participants learned about each other's ideas, and how the ideas of all participants can be combined into one idea. In sum, this reflection step focuses on discussing the differences and similarities, triggering participants to visualize them, and subsequently to step beyond them. This may lead to the acceptance of imperfection, as participants realize that some people simply have other ideas, but they can as a group work towards finding common ground. However, the adjusted manual was not tested, so this hypothesis cannot be confirmed nor denied.

Lastly, findings of the tool test confirm findings from the interviews, especially regarding complex communication and trust among residents.

V CONCLUSIONS

8 CONCLUSIONS

In this chapter, the conclusions of this research are presented. First, main points of discussion are elaborated on in section 8.1. In section 8.2, the 7 sub-questions are answered in order to the main research question as presented in section 1.1.7. The chapter concludes with recommendations for the applicability in the real-life context and for future research in section 8.3.

8.1 DISCUSSION

In this section, nine main points of discussion regarding this research and its results can be made.

SMALL SAMPLE

It must be noted that this research used a single case study, and within that case study quite a small sample. Six interviews were carried out, as well as a validation of the interview results, creative session and communication tool test session. While setting up the research, and specifically the interviews, a lot of research fatigue and hostility were encountered. Qualitative researchers more often encounter this feeling of being over-researched, thus this situation is not a stand-alone one (Clark, 2008). The research fatigue influenced the amount of data, which may have compromised the validity of the data. This effect was mitigated by validating the findings through validation, and by carrying out the creative session and tool test session. However, the validation was not filled out by the co-founders, and the tool test session was carried out with only three participants, whereas the tool can be used by up to 12 people. Furthermore, after the tool test, adjustments to the tool manual have been made, but these have not been tested again with the sample group to see if these improvements actually worked.

In sum, the sample group is still quite small and it is questionable whether the findings can be generalized to a larger setting, and whether within Stad in de Maak the results are completely representative.

TYPE OF COHOUSING

The type of cohousing studied in this research was supposed to be for single-person households. However, some of the participants of this research lived with roommates, meaning that they shared all the facilities of the home apart from their bedroom and that their units were not autonomous. Still, there were not any major differences between these research participants. Thus, this aspect probably will not impact the research results regarding the sharing economy and self-organization of cohousing communities.

AMBIGUITY RESULTS

The results of the research showed a lot of ambiguity. The advantages of Stad in de Maak's sharing economy were also often disadvantages, and vice versa. The findings illustrate the complexity of cohousing projects, self-organization and sharing economies very well. However, as many of the findings are two-sided and not clearly point into one direction, is it more complex to draw clear conclusions.

COMMUNICATION TOOL DESIGN & TEST

Several remarks can be made regarding the development of the communication tool and whether it actually functions the way it was designed to.

As mentioned earlier in this discussion, the communication tool was tested with a small test group, namely three people. The tool, however, can be used by up to twelve people. Thus, the test is not entirely representative of how the tool could work. Furthermore, the manual of the tool was adjusted based on the session, but no test with the adjusted manual has been carried out. It is thus merely hypothesized that, based on the adjusted manual, the tool would indeed comply with all design requirements.

Secondly, implementing co-design – which in some resources is equated to 'co-creation' – at all stages of the tool development could have improved the final result and may have been more suitable for the aim of this research. According to Sanders & Stappers (2008) co-design refers to "the creativity of designers and people not trained in design working together in the design development process ". The design development process consists of 5 phases: design criteria, ideas, concept, prototype, and finally product. However, these phases are iterative, and designers often move back and forth between phases (Sanders & Stappers, 2008). Noted benefits of co-design are: better end products, a feeling of co-ownership with the user, and creating healthy relationships (Rock, McGuire & Rogers, 2018). In this research, a creative session was used for design input. Based on the creative session and the interview results, design requirements were set up. Thus, to some extent co-design was implemented in this research. However, looking at the ladder of citizen participation by Arnstein (1969), this can most likely only count as a form of 'consultation' (level 5). This means that the residents got the opportunity to provide input to the project, but lack the power to ensure this input and knowledge is used. The higher you are on the ladder of citizen participation, the higher the degrees of citizen power are. Especially the highest three levels - 'partnership', 'delegated power', and 'citizen control' – are referred to as 'degrees of citizen power'. As this research aims to empower residents of cohousing to

self-organize, it would have fit well to give as much power to the residents as possible. Then, the end result would have improved, and the level of empowerment of the residents would already have increased during the research itself. Co-design could have been implemented more during the prototyping stage. In this research, a prototype was designed individually, which was tested with residents. It could have been possible to allow the residents more power in deciding what the prototype would look like.

However, even though literature indicates benefits towards adopting this design process, it must be noted that research fatigue was encountered several times during this research. The question is, thus, whether it would have been possible to actually involve the residents in more steps than has been done now.

COMMUNICATION TOOL (IN)DIRECT EFFECTS

Furthermore, the impact of the communication tool needs to be discussed, both on direct and indirect level. As stated, the communication tool focuses on reducing the disadvantages of Stad in de Maak's sharing economy, namely 'complex communication', 'intense relationships', and the 'lack of usage of empty spaces'. As a result, Stad in de Maak's sharing economy will improve, which as a result can contribute to its conditions for self-organization and to its bonding social capital. The latter can in return contribute to community empowerment. In sum, the tool contributes to both self-organization and community empowerment by improving Stad in de Maak's sharing economy. As a result, the development and continuation of Stad in de Maak as a cohousing project may improve, which in the end may lead to increased affordability of housing. Regarding the actual effect of the tool, on both direct and indirect effect remarks can be made.

Looking at the direct effect, the results from the test (section 7.3.4) are promising with regards to whether the tool meets its design requirements. Participants found it was easy to use the tool, and express their ideas and opinions, and learned about the others as well. However, acceptance of imperfection could not be confirmed, nor denied. The adjusted manual should support this, but this has not been tested.

Furthermore, the indirect effect of the tool cannot be identified based on this research. Based on the literature study, it was hypothesized that social capital – in the form of bonding, bridging and linking capital – can contribute to the level of community empowerment to self-organize. The communication tool intends to contribute to building bonding social capital, and thus supports empowerment and self-organization. However, this is not an effect which is visible in one day. Furthermore, the tool does not contribute to bridging and linking capital, whereas

these are also important for empowering communities. However, the three types of social capital are connected, meaning that increased bonding capital might also lead to increased bridging or linking capital (Hawkins & Maurer, 2010; Larsen *et al.*, 2004). To actually be able to state whether empowerment of communities to self-organize has been achieved with this communication tool, the cohousing community should be studied long term. This research and also the communication tool merely provide the ingredients to contribute to improvement of sharing economies and as a result to increased empowerment of cohousing communities to self-organize.

TARGET GROUP OF THE RESEARCH

Next to that, one can question which target group has been reached with this research. The resident group at Stad in de Maak is quite homogeneous, consisting mainly of artists, designers and students. Temporarily, status holders (*statushouders*) were also housed at Stad in de Maak. It was addressed in the interviews that the motivation to live there might also be political. Thus, this research tailors to the specific target group that wants to live in this form of cohousing. This means that the findings of this research do not suit all citizens that struggle with finding affordable housing, which impacts the applicability of this research.

COHOUSING AS THE RIGHT SOLUTION

Fourthly, the results raised questions about cohousing as a solution for problems regarding affordability and environmental sustainability, specifically affordability as that was the focal point of this research. In the introduction of this research, collaborative housing and cohousing are presented as potential solutions for current housing problems. This research intended to unravel specifically how sharing economy could help further this solution. Some research findings can confirm that cohousing, and the concept of sharing economy, can contribute to affordability. One interviewee addressed that she could not live elsewhere than at Stad in de Maak, as she could not afford to pay a higher rent. One of the co-founders addressed that they keep low-level rents. This does limit their investment opportunities as an organization, which could be a problem. In general, however, Stad in de Maak appears to be an affordable housing initiative. Looking at the sharing economy within Stad in de Maak, two remarks can be made. Firstly, one of the advantages found in the interviews was 'saving time and money', as for example tools can be borrowed from roommates which you otherwise would have to buy yourself. This might positively impact the affordability of housing, as you have more money to spend. In contrast, the sharing economy of Stad in de Maak

revolves around the use of commons at the ground floor. These commons are free for use, and included in the rent of the residents. As was found, the use of these commons is not optimized. They stand idle a lot of the time, meaning more benefit could be created. One co-founder stated that the goal was to create micro-economies within these commons, but this has not worked yet. In sum, there is potential for more economic benefit. Thus, the research findings do not show cohousing and sharing economies as a clear-cut solution, but create a clearer view of the complex problems this type of housing and especially its residents have to deal with. Furthermore, the potential of these concepts as solutions is hinted towards. Before optimizing cohousing and sharing economy as a solution for affordability of housing, research should most likely focus on internal problems within sharing economies in cohousing initiatives. As a result, this could lead to increased empowerment of communities to self-organize, but as mentioned this is quite an indirect effect which cannot be measured in this research.

Furthermore, cohousing is also subject to the structural forces that surround the project, such as the institutional context and the role of real estate developers (Tummers, 2017, p. 27). Empowerment of cohousing communities will probably not lead to a complete change within this power play, but it can give back some power to residents themselves.

USE OF THE CONCEPT 'SHARING ECONOMY'

Sixth, the use of the concept 'sharing economy' can be questioned. There are several problems surrounding using sharing economy as a concept in this research. First of all, the fact that it is a quite new economic model, means that the concept is not clearly demarcated and the objectives of the concept are not clear. Looking at the demarcation, the term in itself is closely related to or even equated to other terms. Examples of these similar terms are collaborative consumption (Botsman & Rogers, 2011 Hamari *et al.*, 2015) and peer-to-peer sharing (Böcker & Meelen, 2017). Closely related, but not similar terms are: second-hand economy, on-demand economy, and product-service economy (Frenken, 2017). Second-hand economy is the economy of selling or giving away your used products. On-demand economy is about having access to services whenever you want it, by using a platform which matches you to a freelancer. Uber is an example of this, though it is often described as a form of sharing economy. Product-service economy is about a consumer gaining access to a product, while the company retains ownership. Mobike is an example of this. Sharing economy exists at the intersection of these three concepts (Frenken, 2017).

Furthermore, apart from the unclear terminology, the image of the concept of sharing economy is disputed and subject to discussion in current literature. Martin (2016) presents a review of how sharing economy is framed. It could be a "pathway to sustainability", or a "nightmarish form of neoliberalism" (Martin, 2016). According to Botsman & Rogers (2011), collaborative consumption – which in their definition is similar to sharing economy – promotes equitable and sustainable distribution of resources. For example, people have to spend less money on a car because they buy one together. Also, less resources are needed for making cars, because in total less cars are needed. Sharing economy is presented as a disruption of capitalist economies, as the focus of consumers shifts from owning assets, to having access to assets (Botsman & Rogers, 2011). In this sense, it could be a pathway to sustainability. However, in a more skeptical light, sharing economy has also been described to commercialize every aspect of life (Morozov, 2013 in Martin, 2016). Martin (2016) states that since the emergence of the sharing economy concept as a critique to hyper-consumption by Botsman & Rogers (2011), it has been reframed by corporations to become solely an economic opportunity. Sharing economy literature argues that drivers and goals of sharing economy can be either economic, environmental and social (Böcker & Meelen, 2017; Heinrichs, 2013; Frenken & Schor, 2017; Botsman & Rogers, 2011). However, the current framing of sharing economy as purely an economic concept limits the social and environmental dimension of the concept (Martin, 2016). Thus, the concept of sharing economy in itself, purely looking at its definition and drivers, may not mismatch with cohousing initiatives. However, one can question whether cohousing initiatives want to be associated with a controversial concept like sharing economy, which is currently framed mainly from the economic dimension as a business opportunity. Possibly, 'collaborative consumption' might be a more suitable term for cohousing projects. Collaborative consumption has the same meaning, but is not part of the current controversy surrounding sharing economy.

ACADEMIC AND PRACTICAL CONTRIBUTION

Lastly, the academic and practical contribution of this research needs to be discussed. From an academic perspective, this research intended to fill the following research gap: the connection of sharing economy, cohousing, self-organization, and empowerment through social capital. Furthermore, it connects two separate fields, namely Management in the Built Environment and Science Communication. Looking at the results and whether the research gap is indeed filled, several remarks

can be made. First of all, with the results it was possible to connect sharing economy to cohousing, self-organization and social capital. The results approach sharing economy from several dimensions. Practical components have been found, such as how to set up rules. Communication and relationship components have been found as well, such as how a sharing economy can contribute to building social capital in a community. However, the relationship between sharing economy and empowerment, and empowerment of communities to self-organize, is less visible in the results. As stated in the literature study (section 2.4), social capital can lead to empowerment, thus the focus on social capital was direct and the focus on empowerment indirect. This explains the fact that empowerment in itself is not present in this research, but it is only present as a byproduct. However, future studies could focus on whether improving a community's social capital through a communication tool as proposed in this research, does actually contribute to community empowerment. Furthermore, the small sample size of this research complicates creating a generalizable outcome,

as has been discussed earlier in this section. Thus, the research gap may be filled for the majority of concepts, but the findings should be validated. The academic field could use this small study as a starting point for future research on sharing economy, self-organization and social capital. The practical contribution of this thesis is more evident. The communication tool might become a valuable tool in Stad in de Maak's organization, and its potential is not limited to this case study, as it might benefit other cohousing or collaborative housing communities as well. The tool can help communities to work on communication issues regarding sharing, and it helps to build bonding social capital through building trust and association. As a result, it might contribute to community empowerment. Connecting this effect to the research aim – empowering cohousing communities to self-organize by supporting their social capital, to create affordable homes – it must be stated that to a certain extent this research then does reach that aim. However, the components of this research merely present the ingredients that can contribute to that aim, not the only clearly outlined path towards that aim.

8.2 CONCLUSION

This research aimed to answer the following research question:
How can the concept of sharing economy support empowerment of cohousing communities towards self-organization to create affordable homes?

Before answering this main research question in section 8.2.8, sub-questions 1 until 7 are answered. In the answers, literature is referred to in order to place the findings in the broader academic context. These questions are:

1. *To what extent are collaborative consumption of under-utilized goods, access rather than ownership and use of community-based online services present in current cohousing initiatives?*
2. *What are the advantages and disadvantages of the sharing economy in cohousing initiatives in practice?*
3. *Which barriers to and enablers of self-organization of cohousing initiatives can be found in practice?*
4. *Which conditions for self-organization are influenced by the found barriers and enablers?*
5. *How can the sharing economy of the cohousing initiative support the initiative's conditions for self-organization?*
6. *To what extent does the existing cohousing community possess bonding, bridging and linking social capital?*
7. *How can the sharing economy of the cohousing initiative support its bonding, bridging and linking soical capital?*

8.2.1 SUB-QUESTION 1

In this section, sub-question 1 is answered:
1. *To what extent are collaborative consumption of under-utilized goods, access rather than ownership and use of community-based online services present in current cohousing initiatives?*

This question is answered by incorporating the interview findings on sharing economy presented in section 4.1.2. Also, the findings are grounded in existing literature.
Sub-question 1 was based on the definition of sharing economy, as set up by bringing various definitions and characteristics in literature together. This definition was:
Collaborative consumption of under-utilized goods, enabled by the sharing, exchanging, and rental of resources, often through use of community-based online services.
In the operationalization (section 3.4.2 & Appendix A1/ A2) it was argued that three characteristics (i.e. under-utilized goods, access rather than ownership, use of community-based online services) need to be present in order to speak of a sharing economy. The outcomes

per characteristic are now presented separately before answering the question whether the studied case can be viewed as a sharing economy.

Consumer-to-consumer interaction
This characteristic was tested through the variable 'communication with other users'. It can be concluded that there was mostly face-to-face communication, and sometimes through WhatsApp as an online tool.
This face-to-face interaction as standard communication in cohousing is also noted by Jarvis (2011). She states that, in cohousing projects, the usage of online communication technologies is used to increase communication, and not replace face-to-face social interaction. Interviewees noted that they run into their roommates, which then provides the opportunity to discuss sharing plans. Online tools are thus not necessary per se to enable sharing.
There is also another reason why it is not surprising that face-to-face interaction is more prevalent than online interaction. As Frenken & Schor (2017) state, sharing economy is a principle which has been around for a very long time, but the new component of sharing economy which gives it its current high level of attention, is so-called "stranger sharing". This means sharing with strangers, which is possible through the use of information and communication technology. However, in cohousing, sharing takes place with people within your living environment, and you are already familiar with them. Nevertheless, it was noted by interviewees that communication about how spaces are shared is important, including using informal rules, consensus decision-making, dealing with intensity of relationships and managing complex communication.

Access rather than ownership
TThe second defined characteristic was 'access rather than ownership', which has been measured through three variables: 'presence of sharing', 'presence of exchanging', 'presence of renting'.
The interviews showed that sharing was the most prevalent. Buildings have common spaces which are shared. There is some level of exchange or renting, for example residents doing work in one of the buildings for a small fee or to 'pay' rent. Also, one of the commons has been transformed into a "restaurant", which groups can rent for a night to host dinners for larger groups.
Looking at literature, there is no consensus on whether having monetary benefits through sharing is part of the

sharing economy. Frenken (2017) states that as long as sharing leads to a better utilization of an under-utilized asset, monetary benefits fall within the scope of the sharing economy. However, Belk (2014) states that in 'true' sharing, money does not change hands. Based on this, it appears that Stad in de Maak would fit more with Frenken's definition of a sharing economy, as monetary benefits are part of at least one sharing practice at Stad in de Maak (i.e. the restaurant that can be rented).

Use of under-utilized assets
TThe third studied characteristic was the use of under-utilized assets, which has been measured through the variable 'idleness of asset/good without use'. This meant that the shared asset or good would be idle without the sharing taking place within Stad in de Maak. In several ways, this variable is present within Stad in de Maak.
First, Stad in de Maak got access to derelict properties as Havensteder was looking for an alternative way to manage these properties, rather than closing or demolishing them. Second, idle common spaces are shared by residents. At the Banierstraat, the restaurant residents rent out is a shared space which is shared beyond the project itself. Thirdly, goods and specific services are also shared within the Stad in de Maak community or beyond. Resident 2 noted situations where she was able to use or have a specific tool that her roommate had. Another example is the washing machine in the commons of the Pieter de Raadtstraat, which neighbors can use in return for a small fee. Thus, in several ways Stad in de Maak residents search and develop sharing practices using under-utilized assets. These three ways of idle capacity match with the description of Frenken & Schor (2017), who state that idle capacity is central to the sharing economy principle as it distinguishes from the practice of on-demand usage. On-demand usage is ordering or creating a certain service or good, because you need it. Within the sharing economy, the service/good/location is already there, but its use has not been optimized yet. The buildings were already derelict and empty and in Havensteder's portfolio, and Stad in de Maak saw potential to optimize its use. The utilization capacity thus increased. Another example is the cinema. The residents wanted to organize a weekly cinema, and saw an opportunity in the commons downstairs at the Pieter de Raadtstraat. Now, the cinema is organized every week.
Another remark made by Frenken & Schor (2017) is the creation of opportunity costs. This means that when private assets or goods are transformed into a small economy, every time the space or good is not used, money is 'lost'. An example of this is renting a room out via Airbnb that used to be the spare room in which friends

or family could stay in certain situations. Some people might choose to charge friends and family as well from that moment on, which can negatively impact social ties. At Stad in de Maak, this opportunity cost situation will most likely not arise, as the commons are paid for through the residents' rent, and are in general not used to make money. However, the downside is that residents might not be motivated to optimize the use of the commons, and they might be missing economic benefits that they could acquire through the commons. The interview results showed that co-founders have varying opinions on whether residents should be actively encouraged to use the idle commons. Resident 2 noted that often nothing happens in their commons and she thinks this is a pity. The under-utilization does not create extra costs, as the commons can be used for free, but the usage of the spaces is also not maximized. If the usage of the spaces would be maximized and economic benefits would be created, for example by realizing the micro-economy at Stad in de Maak that the co-founders mentioned in the interviews, this could have a positive influence on the affordability of living at Stad in de Maak.

Conclusion sub-question 1
Bringing the results of the three characteristics together, it becomes clear that to a certain level Stad in de Maak and its buildings can be described as a sharing economy. Stad in de Maak is built upon sharing/exchanging and to some extent renting. Communication among users (i.e. the residents) supports this sharing. This communication is mainly face-to-face, not via online tools, though WhatsApp was noted as a used online tool. Lastly, Stad in de Maak uses idle spaces within its sharing economy.
Even though in general the case matches with the sharing economy characteristics, some side notes must be made. First of all, online tools are not used, whereas recent sharing economy literature does focus mainly on how information and communication technologies have given rise to the concept of sharing economy. However, Belk (2014) and Frenken & Schor (2017) have also noted that sharing economy in itself is a lot older than the contemporary versions that are highlighted nowadays.
Secondly, it must be noted that some commons at Stad in de Maak stand idle a lot of the time, and one can wonder if that can account as a sharing economy, as it the usage of space has not been optimized. Optimizing the commons and possibly creating economic benefits out of the commons, could positively impact the affordability of Stad in de Maak. Lastly, as mentioned in the discussion (section 8.1), the sample group was quite small. As a result, the interview findings might not be completely representative of Stad in de Maak's sharing economy.

8.2.2 SUB-QUESTION 2

In this section, sub-question 2 is answered:

2. *What are the advantages and disadvantages of the sharing economy in cohousing initiatives in practice?*

This question is answered by incorporating the interview findings on sharing economy presented in section 4.1.2. Also, the findings are grounded in existing literature. Two advantages of Stad in de Maak's sharing economy were found, and three disadvantages.

Advantages

The advantages found based on the interviews were: 'saving time and money', and 'having a strong community and network'. These advantages were mentioned by both residents and a co-founder. As mentioned in the literature study (section 2.2), anecdotal evidence has shown some possible benefits of sharing economies. These were: the increased value of shared goods, social cohesion among the consumer, minimized resource use, empowered individuals, and other possible, social, economic or environmental benefits (Heinrichs, 2013; Frenken & Schor, 2017). Botsman & Rogers (2011, p. 130) and Belk (2007) both connected community building to sharing. The advantages of Stad in de Maak's sharing economy show overlaps with the benefits noted in literature. The findings of this research can thus confirm that these benefits can arise for sharing economies in cohousing. Furthermore, the advantage 'saving time and money' shows that improving Stad in de Maak's sharing economy may indeed contribute to affordability of housing, as this research aims to do.

Disadvantages

The disadvantages found based on the interviews were: 'intense relationships', 'complex communication', and the 'lack of usage of empty spaces'. The disadvantages were not addressed by all interviewees; both were addressed by two interviewees. However, within these disadvantages there was ambiguity in the answers of the interviewees. Some disadvantages were mentioned by several interviewees, but not every interviewee perceived them as a problem. In the validation, one resident addressed that she believes 'complex communication' is a part of living with other people or having a larger group of people.

Looking at literature, it was stated in the literature study that sharing economy literature focused on real estate often looks at the hospitality sector and rarely focuses on collaborative housing or housing. The influence of the concept of sharing economy on gentrification and tourism is noted (Sdino & Magoni, 2018; Ferreri & Sanyal, 2018; Wachsmuth & Weisler, 2018; Ioannides

et al., 2018). Also, an overview of negative externalities of the sharing economy in the economic, environmental and social dimension, according to Frenken & Schor (2017) was provided in table 2.2.1. Economic externalities were for example loss of business for other businesses, increased opportunity costs and negative effects for third parties. Environmental externalities were the increased CO^2 production as a result of economic growth, and a rebound-effect, which means that consumers use the arisen economic advantage to buy new goods. Social negative externalities that were noted were the decrease of peer-to-peer interaction as sharing economy platforms grow, and exclusion of sharing (Frenken & Schor, 2017). These disadvantages – 'complex communication', 'intense relationships', and 'lack of usage of empty spaces' – do not match with the disadvantages of Stad in de Maak's sharing economy as stated by interviewees. These disadvantages fit better within limitations of the commons or common-pool resources. These limitations of the commons, first described in Hardin's "Tragedy of the commons" (1968), revolve around the idea that commons, over time, will become exploited as humans are not able to keep the delicate balance of using the commons but also adding to it. Ostrom *et al.* (1999) addresses that specifically for large-scale common resources, such as fresh water or fossil fuels, management and cooperation among organizations is a problem. However, this does not mean that local commons do not face problems as well. In the article, the four types users of commons are addressed. Of these users, two types act in a reciprocal manner and might behave in the interest the entire group. However, the other two types may be unwilling to cooperate, unless it is also in their self-interest or they are sure that they are not exploited by the other users (Ostrom *et al.*, 1999). Trust is thus a problem in using commons. This has been addressed by one of the residents at the communication tool test, who stated that he believes distrust is a problem among residents of Stad in de Maak. Furthermore, the co-founders addressed that they need to cope with exploitation of the commons and how to ensure residents keep adding to it instead of merely using it for their own benefit. This challenge extends beyond the scope of Stad in de Maak as well. During the tool test, residents of the Pieter de Raadtstraat noted that external people use the commons of their building if they need a place to have a meeting, for example. However, when they do not need to use it anymore, they are off again. These examples show that Stad in de Maak might deal with "the tragedy of the commons" as well. The challenges described by Hardin (1968) ad Ostrom *et al.* (1999) can thus be compared to the noted disadvantages 'intense relationships' and 'complex communication'. However, 'the lack of usage

of empty spaces' is quite opposite to the overexploitation of the commons described by Hardin (1968). This disadvantage shows that under-exploitation of common resources might also be a problem in sharing economies.

Conclusion sub-question 2
In sum, two advantages and three disadvantages of Stad in de Maak's sharing economy were found. The advantages can be connected to present sharing economy literature, whereas the disadvantages were not found in the literature at hand. However, two noted disadvantages do show overlaps with literature on the limitations of the commons. This might indicate that the concept of sharing economy and the concept of common-pool resources are linked. Ostrom (1990) presents guiding principles for sharing common-pool resources. Possibly, these rules can be applied to sharing economies as well. However, regarding this conclusion, it must be stressed that the sample group of this research was quite small. This means that the results might not be completely representative of Stad in de Maak's sharing economy.

8.2.3 SUB-QUESTION 3
In this section, sub-question 3 is answered:
3. *Which barriers to and enablers of self-organization of cohousing initiatives can be found in practice?*

This question is answered by using the interview findings on self-organization (section 4.1.3). Also, the findings are compared with and grounded in existing collaborative housing, cohousing and self-organization literature.
The following barriers were found: 'differing motivations', 'complex communication', the 'dependence from the institutional environment', 'setting up rules for sharing', the 'lack of rules/regulations for decision-making', 'finances', and the 'image of Stad in de Maak'.
Next to these barriers, the following enablers were found in the interviews: the 'political situation', 'knowledge sharing (within the community or beyond)', 'having self-reliant residents', 'working with other housing corporations', 'joining forces', the 'novel ideas of Stad in de Maak', the 'market situation', the 'contribution to the neighborhood', and a 'feasible business case'.

Barriers to self-organization
The first barrier was 'differing motivations'. In literature, differing motivations was not mentioned explicitly as a hurdle for self-organization. However, a common intrinsic motivation has been noted as a condition for self-organization (Huygens *et al.*, 2012, p. 13), and this finding can confirm that it might indeed be an important condition as it is noted as a barrier.

Secondly, 'complex communication' was found to be a barrier. This was already found to be a disadvantage of Stad in de Maak's sharing economy, so it should be clarified how this barrier is similar or different to that disadvantage. For sharing economy, 'complex communication' meant all communication issues that arise out of sharing, mainly the struggle of setting up rules for sharing, finding a common language and lack of knowledge-sharing. For self-organization, 'complex communication' is quite similar. Noted aspects are: knowledge-sharing, contact with other buildings of Stad in de Maak, and finding a common language. As Brandsen & Helderman (2012) state, communication plays an essential role in all organizations. It thus is logical that complex communication can be noted as a barrier, as communication problems will soon come to the surface in self-organized organizations.

Thirdly, the barrier 'dependence from the institutional environment' was found. This barrier has been covered in several papers. Boonstra & Boelens (2011) state that in urban development the government often hinders the spontaneous emergence of associations due to their decisive position. Rauws (2016) also states that institutions can enable or constrain self-organization in urban development. Extending beyond self-organization to collaborative housing development in general, Tummers (2017, p. 254) presents an overview of institutional elements that hinder co-housing. Planning conventions and local institutional partners were among these elements. Furthermore, planners and real estate developers emphasize the negative effects of involving residents, viewing it as unstable and short term, among other things (Tummers, 2017, p. 254). This matches with the perception of the housing corporation, stated in section 4.1.4, that Stad in de Maak does not always give priority to the financial conditions of their project.

Fourthly, 'setting up rules for sharing' was discovered as a barrier. According to Brandsen & Helderman (2012), co-production is a practice which balances individual motivation and collective interests. In doing so, aligning these two aspects is necessary, which requires rules and structures. Ostrom (1990, p. 90) has set up principles for the successful management of common resources, which Stad in de Maak has used as a basis for their rules for the commons as well. Thus, having rules for collective use is a condition, as was stated in the operationalization of the self-organization conditions as well (Appendix B1). The importance of this condition is thus stressed by the fact that it was noted as a barrier by interviewees.

The 'lack of rules/regulations for decision-making', the fifth barrier, is also an element of self-organization and collaborative housing development that has been noted in literature. Brandsen & Helderman (2012) note the

importance of decision-making structures in setting up cooperatives, especially because of the complex environment these self-organized initiatives exist in. Rauws (2016) note decision-making as an important aspect of self-governed initiatives. Ohmer (2008) states that decision-making is one of several characteristics of an organization than can empower participants. In sum, literature shows that decision-making is viewed as an important aspect of self-organization. Huygen *et al.* (2012, p. 13) note that soft leadership is a characteristic of self-organization. This requires a leader that watches over the process, connects and supports cooperation. Interviewees mentioned there is no hierarchy present in Stad in de Maak. Even though the lack of a strong hierarchy is a characteristic of self-organization, it could hinder self-organization if it means there is no soft leadership to guide the decision-making process.

The sixth barrier was 'finances'. In present literature this has been addressed extensively, and financial aspects are mentioned as an issue within collaborative housing (Tummers, 2016; Tummers, 2017, p. 65). The housing model does not match with established property and financial models. This leads to banks being hesitant to fund cooperatives, for example (Tummers, 2016). In contrast, Rauws (2016) states that the economic crisis of 2008 revealed financial risks of rigid development models, and gave room to alternative modes of development. This gave more flexibility to citizen-led initiatives. Finances as a barrier can impact the affordability of the project.

Lastly, the 'image of Stad in de Maak' was mentioned by interviewees as a barrier, which was mentioned by housing corporation employees. This barrier was not found in literature specifically. However, the housing corporation employees mentioned this barrier in relation to trust in Stad in de Maak. In the conditions for self-organization (Appendix B1), trust beyond the organization was mentioned as a condition (Huygen *et al.*, 2012, p. 35). The image that Stad in de Maak sends out, might hamper this condition and subsequently be noted as a barrier. This barrier also relates to the dependence of the institutional environment, as it explains more about the position of Stad in de Maak in relation to Havensteder.

Enablers of self-organization

Firstly, the 'political situation' was an enabler found in the interviews. In several pieces of literature, the relationship between politics and collaborative housing or cohousing has been discussed as well. Tummers (2017, p. 77-78) describes how three global challenges (i.e. the economic crisis, the environmental crisis, the care crisis) influence the institutional environment to take action. An example of such action is the United Nations Sustainable

Development Goals. Several of these goals can be connected to collaborative housing and cohousing, such as goals focusing on equality, sustainable consumption, and creating safe and inclusive cities and human settlements (Tummers, 2017, p. 80). National governments bring agendas such as these to local action. However, grassroots initiatives are often able to self-organize and respond before the institutional transformation is complete (Tummers, 2017, p. 81). The political context thus might be an enabler, but self-organized initiatives might also support the institutional environment in their transformation by bringing its goals to life. According to Czischke (2018), resident groups aiming to realize a housing project need institutional actors, among others, to access necessary resources and knowledge. Two case studies are described which both benefited from the support of the local government in their development.

Secondly, 'knowledge sharing within the community or beyond' was addressed as an enabler. Knowledge sharing within the community could mean being more up-to-date about what everyone within Stad in de Maak is up to, so initiatives can flourish, according to one of the residents. Beyond the community means sharing knowledge with other collaborative housing or cohousing communities, to share experiences and expertise. No literature was found to support this .

Thirdly, 'having self-reliant residents' was mentioned as an enabler. This was addressed by a co-founder, stating that it helps to have residents who know how to organize themselves in order to set up initiatives. Tummers (2016) addresses self-reliance, not from the resident perspective, but from the development of collaborative housing initiatives as a whole. According to Tummers (2016), collaborative housing is looking to mediate self-reliance and state-provision. Self-reliance, in this context, is thus focused more on the bottom-up provision of housing.

The fourth enabler, addressed by housing corporation employees, was 'working with other housing corporations' and not only Havensteder. This enabler can be connected to the third barrier found, namely the dependence from the institutional environment. This barrier has been discussed in several papers. Furthermore, Czischke (2018) analyzed the relationship between collaborative housing and institutional actors. Institutional actors are described to give access to certain knowledge and resources to help support development of housing. Based on this, it can be argued that working with other housing corporations than only Havensteder might help to access more knowledge and resources and as a result support the development of housing. Furthermore, it could help to make Stad in de Maak less dependent of the institutional environment, thus relieving one of the found barriers.

The next enabler found was 'joining forces', either through residents acquiring property together, or Stad in de Maak as an organization acquiring property through the syndicate VrijCoop. In literature, many examples can be found of citizens joining their capital for housing development, in the form of a cooperative. Tummers (2017, p. 259) has addressed using joint funds to invest in renewable energy production for commons in collaborative housing, which decreased the dependency of the government. In Germany, Baugruppen (construction groups) join their capital to develop housing (Urban, 2018). Looking at syndicates, the Mietshäuser Syndikat is an example of a project in which as a syndicate property is acquired with the goal of decommodifying the property. This syndicate was the inspiration for VrijCoop. Balmer & Bernet (2015) analyzed decommodification and self-organization of German and Swiss housing. They stated that, among other things, being able to support yourself financially is necessary to reach self-organization and decommodification. The Mietshäuser Syndikat was given as an example of an organization that reached self-organization and decommodification (Balmer & Bernet, 2015). One of the residents addressed that acquiring property as a group could be a good way to minimize market forces. The findings of Balmer & Bernet (2015) support this statement.

The sixth enabler was the 'novel ideas of Stad in de Maak', as addressed by the housing corporation. Stad in de Maak has novel ideas which inspired the housing corporation employees to think differently, as one of the interviewees described. Bresson & Denèfle (2015) state that initiatives of residents have inspired the municipality of the French city Grenoble to look for alternative ways of providing housing. This is in line with the response of one housing corporation employee, who elaborated that Stad in de Maak inspired him. However, Tummers (2017, p. 241) described the novelty of cohousing as a whole as a barrier towards the relationship between housing groups and the professionals supporting these groups. The novelty of the housing model can lead to tension and misunderstandings among these parties. Boonstra & Boelens (2011) discuss novelty in relation to self-organization, stating that: "Self-organizing systems are complex networks of entities that synergize and produce novelty".

Seventh, the 'market situation' was addressed as an enabler by interviewees. The crisis is what helped Stad in de Maak come into being and is currently hampering its development, according to interviewees. Literature describes the market as an enabler from a different perspective. Tummers (2017, p. 253) described a dialectic between the housing market and residents' initiatives for collaborative housing. Institutions sometimes respond to

collaborative housing initiatives, but as a result the bottom-up developments become top-down developments and lose some of the characteristics vital to the housing projects. As a result, new collaborative housing initiatives start to arise. Bresson & Denèfle (2015) describe that French collaborative intends to respond to housing issues through mobilizing civil society, rather than by relying on market forces or State interventions. In this manner, it might be viewed as a response to the market. In her multi-stakeholder analytical framework for co-production of collaborative housing, Czischke (2018) divides the actors in three categories, namely market, civil society and state, and thus also addressing the presence of the market in collaborative housing production.

The eighth enabler found was the 'contribution to the neighborhood', as addressed by residents, co-founders and the housing corporation. Contributing to the neighborhood was a goal of the co-founders, illustrated added value to the housing corporation, and residents described it as good for diversity and indispensable in a city. Positive benefits for the neighborhood have been addressed by Fromm (2012), stating that collaborative housing can model community in a neighborhood. This, however, presents neighborhood impact as a result of collaborative housing rather than an enabler of it.

Lastly, a 'feasible business case' was mentioned as an enabler of Stad in de Maak. Finances have also been addressed in literature. They are mentioned as an issue within collaborative housing, as the housing model does not match with established property and financial models (Tummers, 2016; Tummers, 2017, p. 65). This leads to banks being hesitant to fund cooperatives, for example (Tummers, 2016). On the other hand, Rauws (2016) states that the economic crisis of 2008 revealed financial risks of rigid development models, and gave room to alternative modes of development. This gave more flexibility to citizen-led initiatives. Thus, literature discusses finances as a barrier and as an enabler. This is similar to the findings of this research, in which finances are both a barrier and enabler as well. Building a feasible business case could positively impact the affordability of cohousing and as a result of cohousing.

Conclusion sub-question 3
In sum, of the seven barriers that were found in the interviews, most correspond with existing collaborative housing and cohousing literature, even though they are not necessarily mentioned as a barrier. Sometimes they are described as preconditions for self-organization or successful collaborative housing development and not as existing barriers. This ambiguity of the research findings has also been addressed in the discussion (section 8.1).

Of the nine enablers that were found in the interviews, some correspond with existing collaborative housing and cohousing literature. However, similar to the found barriers, they are not necessarily mentioned as an enabler. Some found enablers were described as barriers or hurdles in literature.

Furthermore, enablers and barriers were sometimes hard to distinguish in the interview analysis. Some enablers followed from barriers or problems as notes by interviewees, and they presented a solution for improving or dealing with this. Then, the noted enablers are aspects that could help the future development of Stad in de Maak, and not always aspects that have helped the development of Stad in de Maak up until this point. Specifically finances was addressed as both a barrier and enabler. Within this research, the financial feasibility of the cohousing project is important, as this research aims to contribute to affordability of housing.

Regarding these conclusions, it must be stressed that the sample group of this research was quite small. This means the results might not be completely representative of Stad in de Maak's self-organization.

8.2.4 SUB-QUESTION 4

In this section, the sub-question 4 is answered:

4. *Which conditions for self-organization are influenced by the found barriers and enablers?*

This question is answered by connecting the interview findings on self-organization presented in section 4.1.3 to the conditions necessary for self-organization as set up in section 2.3, as has been done in section 4.2. This connection has been made by linking the findings to the variables of the conditions for self-organization as presented in Appendix B1. The results of the connection can be found in Appendix B2. As mentioned, the sample group of this research was quite small. This means the outcomes of this synthesis step might not be completely representative of Stad in de Maak's self-organization. The conditions for self-organization as defined in the literature study were:

1. (a common) Intrinsic motivation;
2. Mutual trust (within and beyond the organization);
3. Rules for collective use and decision-making;
4. Definition of boundaries of the initiative;
5. Room for initiatives;
6. Financial feasibility.

Next, the results will be presented separately for the barriers and enablers, before drawing the final conclusion.

Barriers to self-organization
Seven barriers to self-organization were distinguished based on the interview results. Of these barriers, 'complex communication' and 'finances' were mentioned the most in relation to conditions for self-organization. These two barriers and 'setting up rules for sharing' all hampered four conditions. 'Public imagery' was mentioned the least and hampered the least amount of conditions; it was mentioned one time for one condition.

When looking at the conditions, it became clear that there was a distinction in conditions which had the most mentions of variables, and of conditions that were hampered by the most barriers. The variables of 'room for initiatives' and 'rules for collective use and decision-making' were mentioned the most when discussing the barriers. However, '(a common) intrinsic motivation' and 'mutual trust within and beyond the organization' were hampered by the most barriers, namely five in total. This could indicate that the relationship between the barriers and 'room for initiatives' and 'rules for collective use and decision-making' is stronger than between the barriers and '(a common) intrinsic motivation' and 'mutual trust'.

Furthermore, analyzing the relation between the barriers and conditions made clear that the relation is complex, but generally shows a division into two aspects: practical aspects for the organization, and deeper layers of the organization such as trust and motivation. This ambiguity between practical outputs, such as how or when to clean the house, and deeper communication layers, such as building trust with your roommates, was sometimes combined in one statement of the interviewee. This indicates that these two aspects are still connected. This can be explained by the fact that the several conditions of self-organization may work together to create the environment for self-organization to flourish.

Enablers of self-organization
Nine enablers of self-organization were distinguished based on the interview results. Of these enablers, 'contribution to the neighborhood', 'knowledge sharing' and 'market situation' were noted most times in relation to variables to conditions for self-organization. The former two also influenced the most conditions, namely four. In contrast, 'market situation' influenced only one condition, namely 'room for initiatives'. This is the lowest score, together with 'political situation' and 'self-reliant residents'. 'Political situation' was mentioned only once.

'Room for initiatives' and 'financial feasibility' were the conditions connected to enablers the most, and together with '(a common) intrinsic motivation' and 'mutual trust within and beyond the organization' were the most enabled, namely by 4 enablers.

Similar to the results for the barriers, the analysis between the enablers and conditions again showed a division between practical organizational aspects and deeper communication layers. However, the enablers often influenced more either on the practical side, or on the communication side, whereas the barriers often showed a combination of these two aspects.

Conclusion sub-question 4

To conclude, several remarks can be made.

First of all, '(a common) intrinsic motivation' and 'mutual trust within and beyond the organization' are the most hampered by the found barriers. Furthermore, 'room for initiatives', and specifically the variable 'available space', was mentioned most in relation to the barriers. The variable 'rules collective use', part of the condition 'rules for collective use and decision-making', was connected the most to the found barriers. In sum, the overall division of the influence of barriers on the conditions for self-organization proved to be quite evenly spread, but 'definition of boundaries of the initiative' and 'financial feasibility' stayed a bit behind.

Secondly, looking at the enablers, four out of six conditions were connected to four enablers. 'Rules for collective use and decision-making' and 'definition of boundaries of the initiative' were connected to one and two enablers, respectively. 'Available space', a variable part of 'room for initiatives', was connected to barriers eight times, the most of all variables.

Thirdly, comparing the barriers and enablers, it is interesting to note that, even though seven barriers were found and nine enablers, more connections were made for barriers than for enablers, namely 37 versus 32 in total, respectively.

Next to that, especially for barriers, there was a division noticeable in the influence. Several barriers had influence on communication aspects such as trust and motivation, as well as practical aspects such as finances or the available space. In several statements these quite different aspects blended, for example when the lack of rules for use of the commons also led to irritation or trust challenges.

In sum, Stad in de Maak can work on the following conditions: '(a common) intrinsic motivation', 'mutual trust within and beyond the organization', 'room for initiatives', and 'rules for collective use and decision-making'. The enablers the interviewees propose can support: '(a common) intrinsic motivation', 'mutual trust within and beyond the organization', 'room for initiatives' and 'financial feasibility'.

8.2.5 SUB-QUESTION 5

In this section, sub-question 5 is answered:

5. *How can the sharing economy of the cohousing initiative support the initiative's conditions for self-organization?*

This question is answered by using the results on the connection between sharing economy and self-organization (section 5.1). Moreover, conclusions from the communication tool (section 7.3) are incorporated. In order to define whether Stad in de Maak's sharing economy can support or improve its conditions for self-organization, the responses of interviewees regarding sharing economy were matched to the variables for the conditions for self-organization. The outcomes of this analysis can be found in section 5.1 and Appendix B3.

As mentioned in section 8.2.4, Stad in de Maak's following conditions for self-organization can be improved: '(a common) intrinsic motivation', 'mutual trust within and beyond the organization', 'room for initiatives', and 'rules for collective use and decision-making'.

The connection between Stad in de Maak's sharing economy and its hampered conditions for self-organization made clear that there is some overlap between the two. Its sharing economy can have a positive influence on the following conditions: '(a common) intrinsic motivation', 'mutual trust within and beyond the organization', 'room for initiatives' and 'financial feasibility'. The condition 'room for initiatives' had the strongest connection with sharing economy, as it was connected to all sharing economy characteristics and advantages. However, positive connections were often accompanied by negative connections as well, as disadvantages of Stad in de Maak's sharing economy were often connected to its conditions for self-organization as well.

Furthermore, communication and rules are noted as barriers to self-organization, and sharing economy might have a positive influence on these aspects. However, the disadvantages of Stad in de Maak's sharing economy, and most notably the 'complex communication' disadvantage, have to be reduced for a positive effect.

In sum, there might be a positive relationship between Stad in de Maak's sharing economy and its self-organization, but the sharing economy in itself also has disadvantages, which make the relationship more complex. Based on the results of this research, one might argue that Stad in de Maak's sharing economy supports community buidling, which can benefit the conditions '(a common) intrinsic motivation', 'mutual trust within and beyond the organization' and 'room for initiatives'. Using idle assets could save money, which can contribute to the conditions 'room for initiatives' and 'financial feasibility'. Economic benefits of the sharing economy have been noted by

Hamari *et al.* (2015), Puschmann & Alt (2016), Böcker & Meelen (2017) and Frenken & Schor (2017).

Community building, as defined in the found sharing economy advantage 'having a strong community & network', as a result of sharing economies has been described less extensively in literature. Botsman & Rogers (2011, p. 130) describe community building as a result of collaborative consumption. Belk (2007) states that "sharing can foster community".

Communication tool

Thus, Stad in de Maak's sharing economy might support its conditions for self-organization, but especially communication issues hamper this effect. To develop a solution for these communication issues, a creative session was carried out with residents and co-founders of Stad in de Maak, and external designers. The design requirements for the tool were set up based on the interview results and the outcome of the creative session. After this, a communication tool was developed.

This tool, which was described in detail in chapter 7, may support Stad in de Maak's sharing economy through improving communication. In this manner, it will reduce the disadvantages Stad in de Maak's sharing economy experiences, which currently hamper the positive relationship between Stad in de Maak's sharing economy and both its conditions for self-organization and its bonding social capital. As a result, the tool can lead to improved conditions for self-organization and bonding social capital. As stated in the literature review, social capital contributes to community empowerment. In the end, the tool can thus support empowerment of cohousing communities to self-organize by improving their sharing economy. Moreover, looking at affordability of cohousing, supporting Stad in de Maak's sharing economy could also increase the advantage 'saving time & money', which might contribute to the affordability for the residents, as mentioned in section 8.2.2.

The tool, '(im)Perfection Puzzle', uses geometric shapes to help residents explain thoughts and ideas about a specific problem, and as a result work towards acceptance of the differences in everyone's ideas. This difference in opinion was illustrated by the ambiguity of interview responses, as discussed earlier. The tool test session showed that a simple tool like this one can be useful for improving communication. Also, in the test it was confirmed that communication is indeed problematic in Stad in de Maak's sharing economy. However, not all design requirements were met. Especially the acceptance of imperfection could not be confirmed nor denied based on the test.

The discussion also presented other points of discussion regarding the tool. First of all, a design adjustment to the tool, namely changes to the manual accompanying the tool, was made based on the responses of residents to the tool with the intention of meeting all design requirements. However, this design adjustment was not tested, so it is merely expected that this adjustment will lead to the necessary improvements. Furthermore, co-design could have incorporated better during the design process to improve the level of citizen empowerment and usefulness of the final communication tool. Lastly, as mentioned above, the tool can lead to increased empowerment of the cohousing community by improving its social capital. However, this is an indirect effect which cannot be confirmed nor denied based on a short term research like this one. The same reasoning counts for the positive impact on housing affordability.

In sum, the communication tool and its test are promising regarding its use and impact on Stad in de Maak. Further research is necessary to test its direct and indirect effects.

8.2.6 SUB-QUESTION 6

In this section, sub-question 6 is answered:

6. *To what extent does the existing cohousing comunity possess bonding, bridging and linking social capital?*

This question is answered by incorporating the interview findings on social capital (section 4.1.4). Also, the findings are grounded in existing literature. Sub-question 6 was based on the argument that social capital, specifically in the form of bonding, bridging and linking capital, can contribute to the level of empowerment of a community. In the operationalization (section 3.4.2 & Appendix A1/A2) it was stated that bridging capital was assessed by measuring trust, association and frequency. Bridging capital was assessed by measuring the communication with external communities, including trust, association and frequency of contact. Linking capital was assessed by measuring the communication with and/or connection to those with different levels of power or status, including trust, association and frequency of contact. The outcomes for bonding, bridging and linking capital are now presented separately before drawing conclusions.

Bonding capital

Looking at bonding capital, this form of social capital was analyzed in two parts, namely the bonding among Stad in de Maak's residents, and the bonding among residents and co-founders. These will be elaborated on separately. First, bonding among residents is presented. Looking at association, it was found that knowledge sharing could be improved, and that the level of association depends on lifestyle and whether that matches. With some residents, interviewees said to spoke regularly, and others less. The

level of trust depended on the person, but in general the interviewees said to trust the other residents. At the tool test, one resident stated he believes there is distrust among the Stad in de Maak's residents. Another point that was made regarding bonding capital, was that sharing can intensify relationships and make relationships complex.

Several of the found aspects can be found in literature as well. According to Ruiu (2016), social interaction in cohousing communities can be promoted with the following characteristics: participation in the physical design, decision-making processes, and self-managing. The first two were stated in the interviews, the third one also to some extent. As Stad in de Maak transformed its buildings throughout its use, residents were able to do some do-it-yourself work. Several interviewees noted that at Stad in de Maak unanimous decision-making and consensus decision-making is used. Self-management consists many aspects, such as helping each other out or having regular social activities such as eating together. Helping each other out can be noted in resident 2's remark about a bike tool she needed and her roommate having a spare. At the Almondestraat, a weekly soup supper is organized, which can be described as a regular social activity. However, as Ruiu (2016) also notes, a certain level of commitment is needed for creating these structures, and everyone should feel part of the community. This was also noted by residents, who stated that some residents are more committed than others.

In sum, the bonding capital among residents is present, but the level of trust and association could be improved.

Secondly, the bonding capital between residents and co-founders was looked at. Starting with association, it was noted by one resident that the co-founders provide snowflakes of information. There was a level of trust noted by residents in the co-founders, but partially also because co-founders are careful with the promises they make. Another important aspect noted in the interviews was that co-founders are seen as a separate entity (the 'boss'), even though there is no strong hierarchy within Stad in de Maak. One of the reasons for this separation that was given, is the fact that the co-founders are in contact with Havensteder and are responsible for ensuring the continuation of Stad in de Maak.

As the position of residents and co-founders within Stad in de Maak differs, one could argue whether you can speak of bonding social capital among them. Bonding social capital is local, and occurs among a community of individuals (Larsen et al., 2002; Putnam, 2000, p. 22). Linking social capital is about connecting to people with varying levels of power and/or social status (Aldrige et al., 2002 in Muir, 2011). The co-founders have another level of power than the residents, as they are in contact with Havensteder and responsible for the continuation of Stad in de Maak. The question is whether that means there is actually a form of linking capital between the residents and co-founders, instead of bonding capital.

However, both residents and co-founders stated there is no hierarchy within Stad in de Maak. The fact that the co-founders handle the communication with Havensteder, is more due to the fact that it is a precarious relationship. The wish to have no social hierarchy matches with the description of Williams (2005) of cohousing, noting that the lack of social hierarchy is what distinguishes cohousing from other forms of collaborative housing. The co-founders also noted they wish to close this gap between them and the residents.

In sum, the bonding capital between residents and co-founders is present, but there is a distinction in the roles of residents and co-founders, which opens the question whether the social capital among them can be solely described as bonding social capital.

Bridging capital
Bridging capital was studied for residents and co-founders. Bridging relationships with other cohousing communities and neighbors of Stad in de Maak buildings were found.

Looking at the relationship with other cohousing communities, a distinction between residents and co-founders was found. The co-founders have the most connections with other communities, partially through the syndicate VrijCoop, but also with other collaborative housing communities that are not part of VrijCoop. One resident noted that she had attended shared meetings with other collaborative housing communities, but apart from that no specific contact was noted.

The interviewees noted that contact with other collaborative housing communities is important for knowledge sharing and sharing of experiences. This is in line with Bakker et al. (2019), stating that bridging capital allows collaboration of communities through sharing knowledge. Furthermore, according to Larsen et al. (2004), bonding social capital is sometimes viewed as necessary to build bridging social capital. This could indicate that in order to build bridging capital, the residents and co-founders of Stad in de Maak should focus on improving bonding capital first.

Looking at the relationship with neighbors, residents stated they sometimes are in contact with their neighbors, but the opinions of both residents differed. One resident was overall positive, the other resident noted that the level of trust with neighbors could be improved. Open initiatives in the commons were addressed by interviewees as ways to get into contact with neighbors. Residents and co-founders noted that contact with neighbors can be useful for making yourself as a community essential within the

area. This could then be a signal to Havensteder that Stad in de Maak is a valuable project, according to one housing corporation interviewee. According to Ruiu (2016), communities become more involved with the wider community as the cohousing community becomes more established. In some cases, cohousing projects are met with hostility from local communities. This has not been noted in the interviews. However, the temporary nature of many of the Stad in de Maak buildings might influence the process of building bridging social capital with neighbors, as there is less time to become an established community. In sum, Stad in de Maak has some bridging capital, but there is a difference in bridging capital between residents and co-founders. Furthermore, the relationship with neighbors could be improved. Residents and co-founders noted the importance of relationships with neighbors and other collaborative housing communities.

Linking capital

Linking capital was researched in the interviews with residents, co-founders and employees of Havensteder. Residents were clear in not having a relationship with Havensteder, as this precarious relationship is to be protected and handled by the co-founders. Thus, similar to bridging capital, there was a difference in the social capital of the residents and of the co-founders. This can be confirmed by looking at literature. Hawkins & Maurer (2010) state that bonding, bridging and linking capital are not separate, but rather they work together and build upon one another. This is similar to the notion by Larsen *et al.* (2004) that bonding capital might be necessary for building bridging capital. This literature suggests that the fact that the co-founders have more bridging and linking capital than the residents might be connected.

The co-founders have one substantial linking relationship, namely with Havensteder. Furthermore, they have very limited contact with the municipality and municipal council. Havensteder noted that Stad in de Maak could benefit from building relationships with other housing corporations. According to literature, linking social capital consists of weak ties, but can result in a lot of value (Hawkins & Maurer, 2010). Woolcock (2001) notes that bridging and linking capital can lead to exposure to and development of new perspectives, values and ideas. This could indicate that increasing the amount of bridging and linking capital can positively affect Stad in de Maak.

The relationship between Stad in de Maak and Havensteder will now be elaborated on in more detail. Regarding association, the co-founders try to stay on top of what Havensteder is up to so they can jump aboard projects or pitch ideas for new buildings. Havensteder knows to some extent what Stad in de Maak is doing, especially

at the Almondestraat, which is a short term project. The frequency of communication depends on the building and whether everything is running smoothly at that location. Regarding trust, there is a dependent relationship in which Havensteder is not always sure whether Stad in de Maak is approaching the financial feasibility of their plans correctly. Havensteder addressed the public image of Stad in de Maak and suggested that their image can impact their trustworthiness. Importance of trust for governance is also mentioned by Bakker *et al.* (2019), stating that it "enables the exchange of information and improves collaboration for joint decision-making".

In sum, the most important form of linking capital is the relationship of the co-founders and Havensteder. The level of trust in this relationship could be improved. The relationship with the municipality of Rotterdam is limited. Residents of Stad in de Maak have zero to no linking capital. Furthermore, Stad in de Maak could work towards buildings relationships with other housing corporations. Similar to bridging capital, there is a distinction in capital between residents and co-founders, which might be connected, according to literature.

Conclusion sub-question 6

This question has been answered in several steps. Below, these steps are brought together.

Bonding capital among residents is present, however, the level of trust and association could be improvement. Bonding capital between residents and co-founders is present, though a separation is present between roles of residents and co-founders. This sparked the question whether the social capital between these two groups can be viewed as a pure form of bonding social capital, or might be a form of linking capital. Stad in de Maak has some bridging capital, but a distinction between residents and co-founders can be made. The relationship with neighbors could be improved, as well as the relationship between residents and other collaborative housing communities. Linking capital is present between the co-founders and Havensteder. The relationship with the municipality can be strengthened, and relationships with other housing corporations could be built. Literature suggests that strengthening the bridging and linking capital of Stad in de Maak can lead to increased value. Furthermore, it is suggested that the development of bonding, bridging and linking capital is connected. This could indicate that the fact that co-founders have more bridging and linking capital than the residents have, is connected.

Regarding these conclusions, it must be stressed that the sample group of this research was quite small. This means the results might not be completely representative of Stad in de Maak's social capital.

8.2.7 SUB-QUESTION 7

In this section, sub-question 7 is answered:

7. *How can the sharing economy of the cohousing initiative support its bonding, bridging and linking social capital?*

This question is answered by using the findings on the connection between sharing economy and social capital (section 5.2). Additionally, conclusions from the communication tool (section 7.3) are incorporated.

In order to establish whether Stad in de Maak's sharing economy can support bonding, bridging and linking capital, the responses of interviewees regarding sharing economy were matched to the variables that measure these forms of social capital. The outcomes of this research step were described in section 5.2 and visible in Appendix B4.

It was found that Stad in de Maak's sharing economy only has a relatively strong connection to bonding capital. In section 4.1.4, it was found that the level of trust and association between residents could be improved. Strengthening the sharing economy might be able to support this, as all characteristics of Stad in de Maak's sharing economy could be connected to bonding capital. Especially the characteristic 'consumer-to-consumer interaction' and the advantage 'having a strong community & network' showed a relationship with bonding capital. However, disadvantages of the sharing economy of Stad in de Maak, especially 'intense relationships' and 'complex communication', were also linked to bonding capital. The connection between sharing economy and both Stad in de Maak's bridging and linking capital was quite weak.

In sum, the sharing economy of Stad in de Maak might support community empowerment through supporting bonding capital. However, bridging and linking capital are not supported. Still, a positive effect could arise, as that bonding capital might support building bridging capital (Larsen *et al.*, 2004). In order to build bonding capital, the disadvantages of Stad in de Maak's sharing economy, especially 'intense relationships' and 'complex communication', need to be reduced. This is similar to the findings regarding Stad in de Maak's sharing economy and its conditions for self-organization (section 8.2.5).

Communication tool

The communication tool, which was also presented in detail in section 8.2.5, was developed as a possible solution for Stad in de Maak's communication issues. Furthermore, one requirement for this tool was that it should support trust and association, and as a result bonding social capital. The results of the test of the communication tool were conclusive that the tool contributed to trust and association among the participants using it. The tool can support bonding social capital in two ways. First, improving the sharing economy will increase Stad in de Maak's level of bonding capital, as this relationship appears to be present based on the interview findings (section 5.2). Second, the process of using the tool itself also contributes to trust and association, which are the variables facilitating bonding capital.

Furthermore, indirectly the communication tool will contribute to empowerment of Stad in de Maak as a cohousing community. As found in the literature study (section 2.5), social capital – in the form of bonding, bridging and linking capital – contributes to the feeling of community empowerment.

However, as mentioned in the discussion, the tool has not been tested long term and thus the direct and indirect effects cannot be identified in detail. Furthermore, it only contributes to bonding social capital, and not to bridging and linking capital. In sum, the communication tool and the test are promising with regards to its use and impact on Stad in de Maak's bonding social capital, but further research would be necessary to test its direct and indirect effects on Stad in de Maak's sharing economy, social capital, and community empowerment.

8.2.8 MAIN RESEARCH QUESTION

This research aimed to answer the following main question: *How can the concept of sharing economy support empowerment of cohousing communities towards self-organization to create affordable homes?*

This question will be answered by bringing the answers of the sub-questions together. Moreover, the aim of this research – supporting affordability of housing by empowering cohousing communities to self-organize through sharing economy – is reflected on.

Synthesis answers sub-questions

First of all, it was established whether Stad in de Maak, the cohousing project used as a case study in this research, can be described as a sharing economy. It became clear that to a certain level it can be described as a sharing economy, but online tools for communication are not used. Furthermore, the use of the idle spaces (i.e. the commons) at Stad in de Maak has not been optimized. Advantages and disadvantages of the sharing economy were both found, of which some showed ambiguity, meaning these aspects could be either positive or negative, dependent on the interviewee.

Next to that, it was studied what conditions for Stad in de Maak's self-organization are currently hampered by barriers. It was found that Stad in de Maak faces seven barriers. Out of the six conditions for self-organization that were set up based on literature, '(a common) intrinsic motivation' and 'mutual trust within and beyond the organization' were the most affected by the found barriers. 'Room for initiatives' was also hampered.

Thirdly, the level of social capital – in the form of bonding, bridging and linking capital – of Stad in de Maak's residents and co-founders was studied. For bonding capital, it was found that it is present, but the level of trust and association among residents could be improved. Between residents and co-founders, a separation is present, which creates a certain hierarchy according to one resident. For bridging and linking capital, it became clear that the co-founders possess more of these forms of social capital than the residents. For bridging capital, both the relationship with neighbors and the relationship between residents and other collaborative housing communities could be improved. For linking capital, the relationship with Havensteder could be improved, especially when it comes to trust. Furthermore, the relationship with the municipality could be strengthened, and relationships with other housing corporations could be built.

Next, the results on sharing economy were connected to the findings for self-organization and social capital. The goal was to understand whether Stad in de Maak's

sharing economy could have a positive effect on both these aspects. A positive effect means supporting self-organization through improving its conditions, and empowering the Stad in de Maak community to self-organize through supporting social capital. It was found that there might be a positive relationship between Stad in de Maak's sharing economy and its self-organization. However, the sharing economy in itself also faces barriers regarding communication and the lack of usage of idle assets. This complicates the relationship between sharing economy and self-organization. Stad in de Maak's sharing economy supports building a strong community, which can benefit the conditions '(a common) intrinsic motivation', 'mutual trust within and beyond the organization' and 'room for initiatives'. Using idle assets could save money, which can contribute to the conditions 'room for initiatives' and 'financial feasibility'. For social capital, it was found that the sharing economy of Stad in de Maak might support community empowerment through supporting bonding capital. The connection between sharing economy and bridging and linking capital was weak. To build bonding capital, the disadvantages of Stad in de Maak's sharing economy, especially 'intense relationships' and 'complex communication', need to be reduced. The findings for Stad in de Maak's sharing economy and both its conditions for self-organization and its social capital thus both show that especially the disadvantages 'intense relationships' and 'complex communication' need to be lessened.

These findings provided the starting point for the development of the communication tool, which focuses on lessening Stad in de Maak's sharing economy disadvantage and, as a result, supporting both its conditions for self-organization and building bonding capital among residents. A creative session was carried out with residents and co-founders of Stad in de Maak, and external designers. The design requirements for the tool set up based on the interview results and the outcome of the creative session. After this, a communication tool was developed individually. It must be noted that the communication tool was a research step which was carried out to improve the practical applicability of this research. It is one solution to achieve the optimization of Stad in de Maak's sharing economy. As mentioned in section 8.1, the sample group of this research was quite small, which impacted the amount of data and thus the generalizability of the findings. However, the close collaboration with the case study provided opportunities to increase the practical contribution of the research findings through the development of a tool.

This close collaboration could have been even more, by using co-design in all stages of the design process, as mentioned in the discussion. This could have led to a

better tool, and would have given increased power to the residents participating in the research.

The tool, '(im)Perfection Puzzle', uses geometric shapes to help residents explain their thoughts and ideas about a specific problem and then work towards acceptance of the differences in everyone's ideas. This difference in opinion was present in the ambiguity of interview responses, as discussed earlier. The tool test showed that a simple tool like this might be useful for improving communication, and in the test it was also confirmed that communication is indeed a problem within Stad in de Maak's sharing economy. However, not all design requirements were met. Especially the acceptance of imperfection could not be confirmed nor denied based on the test.

This tool may support Stad in de Maak's sharing economy through improving communication. In this manner, it will reduce the disadvantages Stad in de Maak's sharing economy experiences, which currently hamper the positive relationship between Stad in de Maak's sharing economy and both its conditions for self-organization and its bonding social capital. As a result, the tool can lead to improved conditions for self-organization and bonding social capital. As stated in the literature review, social capital contributes to community empowerment. In the end, the tool can thus support empowerment of cohousing communities to self-organize by improving their sharing economy. Moreover, looking at affordability of cohousing, supporting Stad in de Maak's sharing economy could also increase the advantage 'saving time & money', which might contribute to the affordability for the residents, as mentioned in section 8.2.2.

The discussion also presented other points of discussion regarding the tool. First of all, a design adjustment to the tool, namely changes to the manual accompanying the tool, was made based on the responses of residents to the tool with the intention of meeting all design requirements. However, this design adjustment was not tested, so it is merely expected that this adjustment will lead to the necessary improvements. Furthermore, co-design could have incorporated better during the design process to improve the level of citizen empowerment and usefulness of the final communication tool.

Lastly, as mentioned above, the tool can lead to increased empowerment of the cohousing community by improving its social capital. However, this is an indirect effect which cannot be confirmed nor denied based on a short term research like this one. The same reasoning counts for the positive impact on housing affordability.

In sum, the communication tool and its test are promising regarding its use and impact on Stad in de Maak. Further research is necessary to test its direct and indirect effects.

Conclusion research aim

In the introduction, it was stated that the aim of the research was to empower communities to self-organize by supporting their social capital, in order to create affordable homes. This aim was set up, as the affordability of housing is under pressure. This problem is exacerbated by the fact that the number of single-person households is growing, which puts a larger pressure on the housing market.

In this research, the concept of sharing economy was connected to both self-organization and social capital. The conclusions above show that the sharing economy of the studied cohousing project can indeed be connected to both self-organization and bonding social capital. However, the sharing economy of Stad in de Maak needs to be improved, especially regarding communication aspects and regarding the optimization of the use of idle spaces, to fulfill that potential. Also, empowerment might take place through improving Stad in de Maak's sharing economy, but this is a rather indirect long term effect which cannot be measured in this research.

Furthermore, the final piece of the puzzle needed to answer the research question, is whether the results of this research can contribute to the affordability of housing.

First, the affordability of housing at Stad in de Maak will be presented. Both interviewed residents addressed their rent. One resident stated that she did not believe her rent to be lower than for other types of housing, and that she lives at Stad in de Maak because of the social network it offers. The other resident, however, did state that a room at Stad in de Maak was probably the only affordable option for her. One of the co-founders addressed that they keep low-level rents, which limits their investment opportunities as an organization. This means that the housing is affordable for a small group, but they do not have the means to present this opportunity for a larger target group. The low rents at Stad in de Maak are made possible as Stad in de Maak as an organization does not pay any rent for the properties, which are derelict properties of housing corporation Havensteder.

Looking at the results on Stad in de Maak's sharing economy in relation to affordability, two remarks can be made. Firstly, one of the advantages found in the interviews was 'saving time and money', as for example tools can be borrowed from roommates which you otherwise would have to buy yourself. This might positively impact the affordability of housing, as you have to spend less money on this. In contrast, the sharing economy of Stad in de Maak revolves around the use of commons at the ground floor. These commons are free for use, and included in the rent of the residents. As was found, the use of these commons is not optimized. They stand idle a

lot of the time, meaning more benefits could be created. One co-founder stated that the goal was to create micro-economies within these commons, but this has not worked yet. Thus, more economic benefit could be created by optimizing the use of the commons.

The proposed communication tool '(Im)Perfection Puzzle' might contribute to optimizing Stad in de Maak's sharing economy. As a result, more economic benefit could be created, as 'saving time and money' is one of the advantages of Stad in de Maak's sharing economy.

In sum, the sharing economy of Stad in de Maak might thus support affordability of cohousing, but three remarks must be made. First of all, improvements of Stad in de Maak's sharing economy are needed on communication-related issues and on the optimization of the use of idle assets. A practical solution that was proposed in this thesis is to deal with communication issues by means of a communication tool, which will support sharing economy. As a result self-organization and the building of social capital will be supported as well, as has been shown in this research. Using the results from this thesis could thus have a trickle-down effect on the affordability of housing at Stad in de Maak, but it must be stressed that this relationship is rather weak. Secondly, as mentioned in the discussion, the long term direct and indirect effects of the communication tool cannot be defined based on this research. Thirdly, as mentioned in the discussion

(8.1), one can question whether cohousing is the right solution for the entire target group which struggles with the affordability of housing.

To conclude, zooming out to the entire research aim - to empower communities to self-organize by supporting their social capital, in order to create affordable homes – it can be concluded that, within this research, all the components of the research aim have been touched upon. The interview findings show a relationship between sharing economy and both self-organization and social capital. Furthermore, affordability is pointed towards in the interview findings. The communication tool brings together all components of the research and research aim in a practical solution. However, two critical remarks must be made. First of all, the findings of this research merely present ingredients that can contribute to, not the clearly outlined path towards the research aim. Secondly, one can wonder whether cohousing and thus empowerment of communities to self-organize is the right solution for affordability. Certainly, it might contribute to it, but within the housing market, larger forces are at play which influence the development of housing. This research then gives some power back to the people in the hope of pushing back to these larger forces. In sum, this thesis provides one piece of the complicated puzzle which must be solved to create more affordable housing in the Netherlands.

8.3 RECOMMENDATIONS

8.3.1 APPLICABILITY IN REAL-LIFE CONTEXT

Based on this research, three recommendations for the applicability in the real-life context can be given. These are all recommendations for Stad in de Maak as a cohousing project, as the generalizability of the findings of this research beyond Stad in de Maak is unclear.

First of all, the findings present several barriers which Stad in de Maak could focus on. To improve the sharing economy, this research showed that Stad in de Maak should focus on communication issues. The communication tool which was developed in this research could help with this. Stad in de Maak could start implementing this tool to understand more about the communication issues they face, and work towards dealing with these issues.

Secondly, from a social capital perspective, the research showed that several improvements are possible. For bonding capital, the level of trust and association among residents can be improved, as well as the dichotomy between residents and co-founders. This might support the building of bridging and linking capital as well, as research shows that forms of social capital build upon each other (Larsen et al., 2004; Hawkins & Maurer, 2010). The communication tool '(im)Perfect Puzzle' proved to be a simple way of improving trust and association among the residents using it. For bridging capital, the relationship with neighbors could be improved at the Bloklandstraat location, as well as the level of knowledge sharing with other collaborative housing communities that residents engage in. For linking capital, also improvements can be made. The level of trust with Havensteder could increase, and Stad in de Maak could work towards building relationships with other housing corporations to decrease their level of dependency from Havensteder. Furthermore, the relationship with the municipality of Rotterdam might be strengthened as well.

Last, the findings of this research were translated into a small brochure which people involved in Stad in de Maak can use as a source of information (Appendix E1). The findings of these research are broader than only the communication issues, and presenting the breadth of these findings may help them to decide what problems they want to focus and, and which strengths of the project they want to use or reinforce.

In sum, the outcomes of this research can be applied in several ways. The research provides a knowledge base of what Stad in de Maak could improve, as well as a practical contribution – through the communication tool '(im) Perfect Puzzle' – to solving specific problems.

8.3.2 FUTURE RESEARCH

Four recommendations for future research can be given. First of all, the research can be repeated with other cohousing projects to increase validity and generalizability of the results. This research used a single case study, and thus provided in-depth information on the specific case, but the small sample impacts the generalizability of the research results. Studying how sharing economies work within other cohousing projects, and studying their self-organization and social capital as well, can verify or falsify the results of this research. As a result, the applicability of this research will become more clear as well.

Secondly, the communication tool which was developed in this research, can be tested with other cohousing initiatives. The results from a test like this will be twofold. First of all, it will help give insight into how the communication tool works and what needs to be improved. Secondly, a test can work to gather data on other cohousing communities regarding their communication issues. In this research, the test of the communication tool provided an opportunity to validate the findings of the interviews. A communication tool test with another cohousing project might support validation of the findings from this research.

Thirdly, the long term effects of the communication tool on Stad in de Maak can be studied. This helps to understand if the tool does work for improving its sharing economy and thus improves its conditions for self-organization, social capital, level of community empowerment, and impacts the affordability on their housing.

Lastly, following from the second recommendation, future research can focus on how alternative research methods, specifically science communication research and communication tool design research, can be used for collaborative housing research. As mentioned in section 8.1, collaborative housing research faces research fatigue, which impacted this research as well. However, the creative session and communication tool test session garnered positive responses from the residents of Stad in de Maak, also the ones that were skeptical towards this research upon its beginning. Even though the reliability of these creative methods might be lower than when using interviews, for example, the applicability might be higher. Possibly, the creative session and test session allowed participants to talk more freely, as it felt less formal than an interview. Both sessions generated valuable information about the case study, and confirmed findings from the interviews as well. In the future, interdisciplinary research like this might prove to be a valuable new method of carrying out collaborative housing research.

9 REFLECTION

This reflection consists of five components. First of all, the relationship between the research and both MSc programs will be reflected upon. Secondly, the research design and used methods are reflected upon. Thirdly, the applicability of the results of the research is presented. This is followed by any ethical issues and dilemma's that were come across during the research. Lastly, a personal reflection is given.

RELATIONSHIP RESEARCH AND MBE/SC

This research was carried out for two MSc programs, namely the MSc Management in the Built Environment, and MSc Science Communication. As mentioned at the beginning of this thesis, I intended to elevate the result by combining management and communication. The MBE program focuses on managing urban development and construction process to help stakeholders achieve high quality and financially rewarding development. This research presented an in-depth view of the residential processes that are part of living in cohousing and cohousing development. The research was thus tailored to the wishes of residential stakeholders. The results can help them improve the quality of their cohousing project, and possibly also make their housing more affordable. The communication tool is a practical example of how they could go around doing this. However, the research was not only focused on residential stakeholders, as the co-founders of Stad in de Maak, and the housing corporation, were also part of the research. The results may also benefit Havensteder, as Stad in de Maak can use the findings to improve their position towards the institutional environment they are part of.

Science Communication focuses on optimizing strategic communication processes within and between organizations and society. In the end, innovations can be attuned to societal demands. In this research, cohousing can be perceived as the innovation which might help deal with problems on the housing market. The whole research was intertwined in such a manner that the MBE and SC parts are not really distinguishable anymore, but one could say that the communication tool is a result which was triggered by SC thinking, even though it has managerial implications as well. The communication tool is a practical example of what could change within cohousing to work towards improving this 'innovation'.

RESEARCH DESIGN & METHODS

In this section, the research design and used methods are reflected upon.

Before looking at the methods themselves, I would like to discuss the relation between the problem statement (affordability of housing, and the increase in single-person households) and the studied concepts: sharing economy, self-organization and social capital.

Initially, the idea was to focus on sharing economy as this is an economy, which I connected to potential for financial feasibility and a focus on affordability. However, the research took a bit of a different turn, with a focus more on communication-related aspects and less so on the financial side of sharing economy. This can be attributed to two things. First of all, self-organization and social capital focus a lot on the relationships between people. Of course, financial feasibility is a part of self-organization, but many other components are present as well. The scope of the research thus extended beyond financial feasibility only, and towards the communication processes that are part of cohousing and sharing. This shift took place gradually throughout the research. Secondly, the interview results presented that sharing economy is not only about financially rewarding sharing, but can have a lot of other components as well, such as building friendships or a network. Of course, saving money is an advantage which was found in the interview, but within cohousing sharing economies are broader than that. In the end, thus, affordability has an indirect relationship with the interview results. However, I do think the results of this research are useful to understand what sharing can mean for a cohousing community and how they can utilize the positive effects of sharing to improve their level of self-organization.

Literature study

A literature study was used as a source of information on the following topics: collaborative housing and cohousing, sharing economy, self-organization, empowerment and social capital.

The set-up of the literature study was quite disorganized at the beginning, which led to a lot of unstructured information. Later, the literature study was structured to make it more clear how the data was collected.

In sum, the literature study provided solid starting points for this research, but the lack of a clear structure at the beginning led to extra work and makes it more complex to check whether all useful literature has been taken into account.

Semi-structured interviews

The interviews were used to gain an understanding from the perspective of residents of Stad in de Maak, co-founders of Stad in de Maak and involved housing corporation employees on the studied topics.

The fact that semi-structured interviews were used, was useful to gather as much information as possible and to let the interviewee guide the topics at hand. Furthermore, the three different perspectives (i.e. resident, co-founder, housing corporation) that were given complemented each other.

However, one downside of the interviews was the small resource group, which was due to research fatigue at the studied case. Furthermore, subjective interpretation of

STRONG ASPECTS   METHOD   WEAK ASPECTS

Clear structure after a while

Solid research starting point

LITERATURE STUDY

Disorganized starting point

Interviewee could steer the interview to useful topics

Three different perspectives

SEMI-STRUCTURED INTERVIEWS

Small research sample

Analysis reliability

Easier to find participants than with interviews

Enthusiastic and engaged participants

Informal setting allows collection of more data

CREATIVE SESSION

Generic and hard to apply results

Not an academic research method

Tool test provided validation of findings

Positive response of case study

COMMUNICATION TOOL DEVELOPMENT & TEST

Small test group

Adjusted tool has not been tested

Co-design could have been incorporated more

Figure 9.1. Strong and weak aspects of the used methods. (own ill.)

the data had to be avoided. This was done by setting up variables and codes for the interview analysis, and by sending out a validation to interviewees.

Creative session
A creative session was selected as a research method to avoid research fatigue. Many Stad in de Maak residents are artists or designers, and it was argued that a creative session fits well with this target group.
Three aspects about the creative session were positive. First of all, more participants were found than for the interviews, and these were also new residents (i.e. residents that had not been interviewed). As a result, a larger group of residents had been reached with the research. Secondly, the setting of the creative session allowed for an enthusiastic group of participants which actively engaged in the session. Thirdly, the creative session allowed for information that probably would not have been collected with a formal interview, as participants feel more comfortable and less 'studied'.

However, the creative session also had two weaker aspects. First of all, the outcomes of the session were still quite generic and not as applicable as one would hope when setting up a creative session. Secondly, a creative session cannot be analyzed in a traditional academic manner. Thus, results and statements are anecdotal.

Communication tool development and test session
The results of the research were used to design and develop a communication tool. This tool was tested in a session with residents from Stad in de Maak.
Two positive aspects of this research step can be noted. First of all, the test session provided an opportunity to validate the findings from the interviews. Of the three participants, two had not been interviewed, and thus the resident group that was part of this research became bigger. The residents noted aspects that were also part of the interview results, thus confirming these findings. Secondly, the response to the communication

tool and test session was positive. One resident, who had previously declined an invitation to be interviewed as he was tired of researchers taking up his time, was very enthusiastic that the tool was developed and that I came by to test it. He elaborated that I was the first researcher that returned with a practical method to help Stad in de Maak, which was why he was willing to take part in the test session. This shows, similar to the creative session, that interdisciplinary research or using alternative research methods might be a useful approach to deal with research fatigue in cohousing or collaborative housing research. Alternative research methods might impact the reliability of the result, but can increase the applicability, as the communication tool illustrates.

However, three negative aspects can be noted as well. The test group was quite small, namely with three participants. The tool can be used in larger groups as well, and the effects of this have not been tested yet. Secondly, based on the test, it became clear that the tool does not meet all design requirements. Adjustments have been proposed, but these have not been tested, so it is unclear whether with these adjustments, the tool will meet its design requirements. Lastly, the principles of co-design could have implemented better in the communication tool design process, to improve its outcomes and empower the residents partaking in the process.

RESEARCH IN PRACTICE

As mentioned in the introduction, the interest for the concept of collaborative housing is growing. The housing market is under pressure, and this research aimed to bring attention to that subject by focusing on a specific case study. The practical implications are threefold.

First of all, Stad in de Maak as a case study can benefit from the results of this research to deepen their understanding of the strengths and challenges of their cohousing initiative. Furthermore, the communication tool hands them a practical solution to deal with the communication challenge in their housing project.

Secondly, the results might be translated to the wider cohousing context, for example by validating the findings with other cohousing projects. This would make the results applicable to other cohousing initiatives as well, who could then draw lessons from this research to improve their project. Again, the communication tool could be a practical way of doing so.

Thirdly, the communication tool in general can be used in communities, not even necessarily cohousing communities, to improve trust and association and

understand ambiguity in the ideas and thoughts of those that are part of the community. The communication tool was developed for the specific case study, but its application is not limited to housing projects. The tool can be used in any context in which discussions need to be supported and where ambiguity is at play.

ETHICAL ISSUES

This study raised one ethical issue, which also has been mentioned in section 3.5. The used methods collected personal data of participants, namely their address, but also personal details about how they perceived their living environment.

To ensure privacy of the participants, all data was anonymized in this thesis. It is not possible to deduct from this thesis who the residents were that participated in this research. Furthermore, to ensure participants understood how data was collected and processed, informed consents were used for the interviews, creative session and tool test (Appendices A7, A8, C1, D4).

PERSONAL REFLECTION

Lastly, I will reflect on my personal development and what I have learned during this thesis process. This will be done by looking at four aspects. First of all, I will state what I learned from carrying out an interdisciplinary thesis project. Secondly, I will elaborate on how I look back on the feedback that I was given and how I translated feedback into my work. Thirdly, I will discuss how I used and incorporated the feedback between the green light and the final presentation to improve my research. Lastly, I will reflect on how I learned from my own work, both on the content level and on the process/personal level.

Learning from interdisciplinary research

From the beginning of my thesis, I was certain I wanted to fully integrate the two research projects I had to carry out. I thought this would be the most efficient way of doing the research, but most it important, it fit well with the whole reason I wanted to study communication next to management in the first place: studying the deeper communication layer which is often forgotten, and understand how you can utilize it to support innovation. At some moments, I have definitely wondered why I ever decided to do a Double Degree, as it puts an extra layer of pressure on top of an already challenging study phase. However, looking back, I can say that I have learned three important things from carrying out this interdisciplinary research project, which I otherwise would not have learned.

First of all, I learned that managing your thesis, thus the administrative aspects and things like getting your mentors together at the right moment and on the same page, can be quite challenging. This did not always run smoothly, even though I tried my best to ensure it did. Sometimes it felt a bit like juggling with all the expectations and rules and regulations from both departments. I think this is very useful to have experienced, as it will most likely be a part of my future career as well. Also, it speaks to the level of independence and individual responsibility you are supposed to have after doing a master's degree.

Secondly, carrying out the integrated thesis allowed me to start seeing the overlaps between the two research fields. All my previous master courses had been separate, thus in my mind, the two fields were still somewhat separate. However, in your thesis you continuously think about the overlap between the fields, and the value of your research for both fields. This was challenging at times, but in the end I think my research fit together really well, which is illustrative of how tied together management and communication is in our day-to-day lives. As a science communication professional it is essential to be able to 'see' the communication layers in your professional practice, so I am very happy I got to learn that throughout this project.

Lastly, doing an integrated thesis project means having more mentors than a regular student. This meant I was lucky, as I got to learn from people with very different backgrounds and areas expertise. I think all these different perspectives helped me to, hopefully, bring my thesis to a higher level, which was what I aimed to achieve by doing this integrated project.

Feedback

For feedback, there are four aspects I would like to address.

At the P2, one of my main points of feedback was to learn to work autonomously and trust my own judgment and skills. This was something I had to remember myself of regularly during the graduation process. Even though I had always successfully completed the courses preceding the thesis project, I struggled with the uncertainty and autonomy that was part of doing a thesis, especially at the beginning. Suddenly, there are no clear guidelines or goals. Apart from some feedback from time to time, you have to believe in your own judgment as a researcher. Of course, there are academic rules you should follow, but within this academic framework there is still a lot of freedom. This turned out to be a blessing and a curse. At the beginning, it felt more like a curse, but over the course of the project I realized that my research was about how I wanted to approach it and this gave me a lot of breathing

room. Overall, I think I was able to use this feedback from the P2 to grow both on content level, but also on process level.

Secondly, another P2 feedback aspect was to stay critical of the concepts I was dealing with. I chose this topic out of idealism, and thus it was hard at the beginning to be critical of cohousing. However, the research itself proved to be a good wake-up call. The process and results learned me that cohousing is far from a perfect solution, and the idealism of those involved makes it more complicated to deal with its shortcomings. I got the impression that especially the co-founders mistake idealism with creating an ideal solutions. As I have seen, the project does great things, but it is far from ideal, as the ideal solution simply does not exist.

From a more practical perspective, I always made notes from the meetings and tried to incorporate all feedback points afterwards. For example, at the P3 I got the feedback that I should validate my findings. I immediately set this up and succeeded in validating my findings in time. This is illustrative for my approach, in which I always try to do something with the feedback, no matter how small. I tried to take all feedback as useful steps forward, and not criticism as to what I have done "wrong". That is not the intention from your mentors, and it is also not the right way to look at it if you want to learn from your feedback.

Lastly, managing the feedback from both master programs sometimes proved to be challenging. Even though I was lucky, as the programs do not conflict and actually fit together really well, there may be different ideas on how to set up the thesis report, for example. I tried to get feedback from both programs whenever I had reached a certain milestone, and, when there was conflicting feedback, I would weigh the feedback and then decide myself how I wanted to proceed. This again ties into trusting my own judgment and working autonomously.

Between the green light and the final presentation

At the green light, I stated several points of improvements. I wanted to create a small brochure, make adjustments to the communication tool, improve the visual aspects of the thesis, and incorporate the feedback I got at the meeting. I will now discuss if and how I tried to make these improvements.

First of all, I made the brochure, which can be found in Appendix E1. This is a short and sweet overview of the research findings on two sheets of A4 paper which can be folded into each other. I intend to visit Stad in de Maak after graduating, to hand over the tool and leave a couple prints of the brochure there.

Secondly, I adjusted the tool by adjusting the manual, as this was proposed by the participants of the tool test. This

manual responds to the remarks made by the residents. However, the manual has not been tested unfortunately, as it was not possible to arrange this with the case within the final weeks.

Thirdly, looking at the visual aspects, I mainly made improvements in chapter 7, the communication tool. I used match/mismatch table to clarify the design process. Other than that, I was quite happy with the visual output of my research, and decided to focus on the content of the thesis and improving the text.

Lastly, looking at the feedback I got at the green light, I started by writing down all the feedback and trying to find the main paint points of the research. I used my final weeks to focus on three main aspects: the main research question and research gap and whether I addressed it, the step from the research finding to the communication tool and clarifying this process, and adjusting chapter 8 to incorporate and present the findings in a critical and thorough manner. During these final weeks, I also had to realize that unfortunately you are never truly finished with a thesis. You will always see imperfections that will continue to be there, as once you've polished them, other imperfections pop up. In that sense, the '(Im)Perfection Puzzle' could also be a metaphor for my thesis research.

Learning points content-wise and process-wise
In this section, the things I have learned on content level and process level are elaborated on. Some aspects that have been mentioned earlier in this personal reflection.

On content level, three main aspects can be noted. First of all, this research helped me understood the ambiguity and complexity of cohousing initiatives. At the beginning of this research, I thought the problems cohousing initiatives face are merely outside of their scope, for example between the initiative and the institutional environment. However, this research learned me that within the cohousing projects there can be a lot of problems as well, which complexes the already complex situation these initiatives are in. This contributed to my second learning point, namely taking a critical perspective towards the research subject. At the beginning, it was easy to confuse my interest with enthusiasm or support of the concept. Now, I have taken a more academic stance in which I tried to understand the concept, which is separate from

whether or not I agree with the concept. Lastly, I have learned a lot about carrying out academic research. This includes how hard it can be to gather data when research fatigue is present within your case. I learned that academic research is not only about gathering the data, but also consists of a lot of management aspects, which can be even harder than the actual "thinking" you are doing.

On the process level, I have learned two valuable things about myself during this process. First of all, I learned to trust my own judgment and thinking, and that this is an important part of academic research as well. If I look back on the process, I feel that, even though intellectually it can be challenging, the biggest challenge is mentally. Almost all conversations with my friends the past months have been about either my thesis or their thesis, and, independent of personality, a thesis gets under everyone's skin. I certainly had not expected that I would struggle with this, as overall I am confident about my skills and work ethic. This is also why I am proud of myself and proud of this thesis, as finishing this shows that I pushed through even when nobody wanted to be interviewed, or even when I thought I could never finish everything in time. In the thesis process, you are either running or at a standstill, which can be very tiring, but – if you're open to it – you can learn a lot about yourself on top of learning about the topic itself. Furthermore, my thesis challenged me to be more flexible and open-minded. I like to take a structured approach towards life in general, and as a result also towards studying. Whenever I have to finish an assignment, I set up a plan, and I carry out that plan. However, when doing a thesis you have to go with the flow sometimes, and adjust your research plan if it turns out that it does not fit. Accepting this was challenging for me. In the end, however, I am happy that I tried to stay flexible. This allowed me to think about what research steps would be best for my research, and I could incorporate things I found along the way.

In sum, I think I used this graduation process to learn about both the topic and myself, which resulted in a quite intense but rewarding year. My thesis may never be perfect, as I addressed, but accepting the imperfections may be the most important learning point of all.

Nina van Wijk, November 2019

VI RESOURCES

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APPENDIX

This appendix is divided into several components.

A1 OPERATIONALIZATION

CONCEPT & CHARACTERISTICS	DEFINITION	VARIABLES
Sharing economy	**Collaborative consumption of under-utilized goods, enabled by the sharing, exchanging, and rental of resources, often through use of community-based online services.**	
Consumer-to-consumer interaction (possibly by using online services)	Consumers offer others access to their consumption goods (Frenken, 2017)	1. Communication with other consumers (face-to-face, phone call, online services e.g. email, social media, telephone apps) (Frenken, 2017)
Access rather than ownership	The sharing economy is an instance of the access economy, where consumers increasingly opt for access over ownership. Access is granted through practices such as sharing, exchanging or renting (Frenken, 2017)	2. Presence of sharing (use together, at the same time or apart) 3. Presence of exchanging (exchange for another good/service) 4. Presence of renting (exchange for monetary fee) (Frenken, 2017)
Use of under-utilized assets (circularity)	There is a better use of under-utilized physical assets. As more people make use of a single good, fewer goods may be needed to fulfil the same level of demand. (Frenken, 2017)	5. Idleness of asset/good without use
Self-organization	**Initiatives that emerge spontaneously in civil society from autonomous community-based networks of citizens, who are part of the urban system but independent of government procedures, and that are created around a common intrinsic motivation.**	
(a common) Intrinsic motivation	People find themselves through a common idea/initiative/ideal or interest. There are shared goals amongst people within the group. (Huygen et al., 2012, p. 13)	1. Free choice of being part of the activity 2. Interest, enjoyment (Ryan & Deci, 2000)
Organization through negotiation and soft leadership	There is no designated leader, the hierarchy follows naturally. People's roles are based on activities/commitment. (Huygen et al, 2012, p.14)	3. Hierarchy (Huygen et al., 2012, p. 14)
Autonomy	Large degree of independence, the initiative is separate from governmental/regular institutions, it gets its shape without a central direction (Huygen et al., 2012, p. 14)	4. Level of independence from the institutional environment (Huygen et al., 2012, p.14)
Spontaneous emergence & creativity	The initiative evolves spontaneously, not necessarily with the goal of solving a centrally defined problem. There is space and creativity for ideas to flourish. (Huygen et al., 2012, p. 14)	5. Spontaneous development of ideas 6. Creativity of ideas (Huygen et al., 2012, p. 14)
Social capital	**Social capital refers to the norms and networks that facilitate collective action. (Woolcock, 2001); "Social capital refers to features of social organization, such as networks, norms, and trust, that facilitate coordination and cooperation for mutual benefit" (Putnam, 1993, p. 35)**	
Bonding	Bonding social capital is local and inward looking, leading to the development of strong ties such as friendship and kinship which are helpful for 'getting by' but can also rein- force "exclusive identities and homogeneous groups" (Putnam, 2000, p. 22 in Muir, 2011)	1. Association with others within the group (Larsen et al., 2004) 2. Trust in others within the group (Larsen et al., 2004)
Bridging	Bridging social capital networks are wider, bringing together individuals from different backgrounds, such as members of professional networks (Putnam, 2000 in Muir, 2011) Bridging social capital occurs when members of one group connect with members of other groups to seek access or support or to gain information (Larsen et al., 2004)	3. Communication with/connection to external groups/communities
Linking	linking social capital connects those with different levels of power or social status (Aldridge et al., 2002 in Muir, 2011)	4. Communication with/connection to those with different levels of power/status

A2 VARIABLES

VARIABLES SHARING ECONOMY

	VARIABLE	MEASURES	MEASUREMENT	CONFIRMATION VARIABLE IS PRESENT
1	Communication with other consumers (face-to-face, phone call, online services e.g. email, social media, telephone apps)	Consumer-to-consumer interaction	Presence of communication.	Any type of communication with other consumers related to sharing/exchanging/renting.
2	Presence of sharing (use together, at the same time or apart)	Access rather than ownership	Presence and consequence of access.	Access is provided through sharing, meaning the consumer needn't be owner.
3	Presence of exchanging (exchange for another good/service)	Access rather than ownership	Presence and consequence of access.	Access is provided through exchanging, meaning the consumer needn't be owner.
4	Presence of renting (exchange for monetary fee)	Access rather than ownership	Presence and consequence of access.	Access is provided through renting, meaning the consumer needn't be owner.
5	Idleness of asset/good without use	Use of under-utilized goods (circularity)	Presence of idleness.	If the object stands idle without the access provided.

In order for the object to be defined as a sharing economy, 1 and 5 have to be present, together with 2 or 3 or 4.

VARIABLES SELF-ORGANIZATION

	VARIABLE	MEASURES	MEASUREMENT	CONFIRMATION VARIABLE IS PRESENT
1	Free choice	(a common) Intrinsic motivation	Preference of doing another activity if possible.	If the respondent prefers doing another activity when given the chance, free choice is lacking
2	Interest, enjoyment	(a common) Intrinsic motivation	Presence of an interest or enjoyment	If the respondent has no interest or enjoyment from the activity (engaging in the cohousing community), intrinsic motivation is lacking
3	Hierarchy	Organization through negotiation and soft leadership	Presence of a leader	If the respondent feels there is no leader present within the organization.
4	Relationship with institutional environment	Autonomy	Independence from institutions	The organization is independent from the institution: communication can be present, but it is not leading the project.
5	Spontaneous development	Spontaneous emergence & creativity	Level of spontaneity	The organization evolves through spontaneous ideas.
6	Creativity	Spontaneous emergence & creativity	Level of creativity	The organization involves through creative ideas of people.

In order for self-organization to be present, 1 or 2 has to be present, combined with 3, 4 and 5 or 6.

	VARIABLE	MEASURES	MEASUREMENT	CONFIRMATION VARIABLE IS PRESENT
1	Association	Bonding, bridging, linking	Communication, interest in others, level of knowledge of others' lives, frequency of contact	Regular communication, helping each other out and knowing each other well indicate association
2	Trust	Bonding, bridging, linking	Perceived trust in others	Feeling that others can be trusted, either inside the community, outside or people from institutions organizations that hold power.
3	Connection with external group	Bridging	Presence of communication.	Any type of communication with other residents/people outside the community.
4	Connection different levels of power/status	Linking	Presence of relationships	Relationships with institutions/organization that hold power.

A3 INTERVIEW PROTOCOL RESIDENT

Introduction: before starting the interview
- Discuss informed consent
- Introduce myself
- Explain the purpose of the interview
- Explain the to be discussed subjects
- Ask for permission to record the interview

General introduction interviewee: role interviewee in relation to SidM, and evolution SidM
1. Can you tell something about you as a resident of Stad in de Maak:
   a. In which Stad in de Maak building do you live?
   b. When did you become part of the project/started living there?
   c. Were you involved in the early developments?
   d. What is your current role as resident of Stad in de Maak in relation to its future development?

Presence of sharing economy characteristics
If necessary: explain the three characteristics of sharing economy: under-utilized goods/spaces, sharing of these goods/space (by sharing, exchanging, rental), online tool.

2. What do you think about when you hear the term sharing economy?
3. Do you make use of a shared space that otherwise remains unused?
   a. Could you tell me more about the sharing of that space? How does the process take place? (monetary benefits, exchange for good/service, using the space together with others)
   b. How does the contact with other users take place?
   c. Do you use online tools for sharing?
   d. What do you think are benefits?
   e. What do you think are disadvantages?
4. Hearing these characteristics; would you describe Stad in de Maak as a sharing economy?
5. Would you want to incorporate sharing economy characteristics?
   a. If so, why? How?
   b. Are there unused areas that might be used?

Barriers to self-organization
6. What do you think about when you hear the term self-organization? (depends on knowledge interviewee)
7. Do you consider Stad in de Maak a project that relies on self-organization? (ask if interviewee appears to understand the concept)
   a. Why do you think that?
8. What was your motivation for becoming part of/living at Stad in de Maak?
9. How do you feel about being involved in a project like Stad in de Maak?
   a. Would you consider living elsewhere if you could? If so; why?/What kind of alternative would it be?
10. How would you describe the leadership and organization within your living community? (e.g. strong hierarchy, no hierarchy at all)
11. Do you consider yourself part of this organization?
12. What is the relationship between you and the other residents?
13. What is the relationship between you and the co-founders?
14. Are there relations with external institutions? (might be unnecessary to ask to a resident)
    a. If so, what are these relations like?
15. Do you get the impression that creativity or spontaneity are used for the development/change within Stad in de Maak?
    a. If so, can you name an example?

16. Did you or do you experience barriers in the development of Stad in de maak?
    a. If so, can you name examples?
    b. Which parties were involved?
    c.What do you think could have helped to relieve the barriers?
17. Is Stad in de Maak currently facing barriers towards their development?
    a. If so, can you name examples?
    b. Which parties are involved?
    c. What do you think can help to relieve the barriers?
18. Do you think there are enablers of the development of Stad in de Maak?
    a. If so, could you name examples?
    b. Which parties are involved in this?
    c. Why is this example an enabler?

Presence of bonding, bridging and linking activities
    • Focus on the communication the interviewee has
    • Focus: trust, frequency contact, type of contact, knowledge about others, helping each other

19. Who do you communicate with within or about your living environment?
20. How is your communication with other residents and co-founders?
    a. Do you trust the other residents/co-founders?
    b. Do you feel you are up-to-date with what other residents and co-founders are working on?/the details of their lives?
    c. Do you help out other residents or co-founders?
21. Is there communication with other housing communities?
    a. If so, how is this communication going?
    b. Do you think this communication adds to the project? If so; how?
    c. Could there be improvements?
    d. Focus on: trust, knowledge about other communities, helping each other out
22. Is there communication with other communities within the area?
    a. If so, how is this communication going?
    b. Do you think this communication adds to the project? If so; how?
    c. Could there be improvements?
    d. Focus on: trust, knowledge about other communities, helping each other out
23. How is your communication with external parties? (e.g. housing corporation, municipality)
    a. Do you think this communication adds to the project? If so; how?
    b. Could there be improvements?
    c. Focus on: tactics, type of communication, frequency.

Introductie: voor start interview
- Het informed consent formulier bespreken
- Toestemming vragen om het interview op te nemen
- Mezelf introduceren
- Het doel van het interview uitleggen
- De onderwerpen van het interview uitleggen: deeleconomie, structuur van de woongemeenschap en communicatienetwerk

Algemene introductie geïnterviewde: rol geïnterviewde binnen SidM, evolutie SidM
1. Kunt u iets vertellen over uzelf als inwoner van Stad in de Maak:
    a. In welk Stad in de Maak gebouw leeft u?
    b. Wanneer bent u daar gaan wonen/onderdeel geworden van het project?
    c. Was u betrokken bij de vroege ontwikkelingen van Stad in de Maak?
    d. Wat is uw huidige rol als bewoner van Stad in de Maak in relatie tot de toekomstige ontwikkeling?

Aanwezigheid sharing economy kenmerken
- Wanneer nodig: uitleggen 3 kenmerken van sharing economy: onderbenutte plaatsen/spullen, delen van deze plaatsen of spullen (door delen, ruilen of huren), gebruik van een online tool.

2. Waar denkt u aan bij het begrip sharing economy?
3. Deelt u binnen Stad in de Maak een ruimte/spullen die anders niet gebruikt worden?
    a. Kunt u me daar meer over vertellen? Hoe vindt het deelproces plaats? (financieel voordeel, het uitwisselen van een andere service/goed, het delen samen met anderen)?
    b. Hoe vindt het contact met de andere gebruikers plaats?
    c. Gebruikt u online hulpmiddelen om het delen te faciliteren?
    d. Wat zijn volgens u de voordelen?
    e. Wat zijn volgens u de nadelen?
4. Als u de kenmerken van sharing economy hoort, zou u Stad in de Maak dan beschrijven als een sharing economy?
5. Zou u kenmerken van sharing economy willen gebruiken in Stad in de Maak?
    a. Zo ja, waarom? Hoe?
    b. Zijn er onbenutte plaatsen in uw woonomgeving die gebruikt zouden kunnen worden?

Barrières zelforganisatie
6. Waar denkt u aan bij het begrip zelforganisatie? (vragen afhankelijk van kennis interviewee)
7. Ziet u Stad in de Maak als een project dat leunt op zelforganisatie? (wanneer interviewee het concept begrijpt, en anders het uitleggen)
    a. Waarom denkt u dat?
8. Wat was uw motivatie van onderdeel worden/leven op Stad in de Maak?
9. Hoe voelt u zich over onderdeel zijn van Stad in de Maak?
    a. Zou u ervoor kiezen om ergens anders te wonen als dat zou kunnen? Zo ja; waarom?/Wat voor alternatief zou dat zijn?
10. Hoe zou u het leiderschap en de organisatie binnen uw leefomgeving omschrijven? (e.g. een sterke hiërarchie, geen hiërarchie)
11. Ziet u uzelf als onderdeel van deze organisatie?
12. Wat is de relatie tussen u en de andere bewoners?
13. Wat is de relatie tussen u en de oprichters?
14. Zijn er relaties met externe instanties, organisaties of bedrijven? (misschien onnodig om aan bewoner te vragen)
    a. Zo ja, hoe zijn deze relaties?

15. Heeft u de indruk dat spontane ideeën of creativiteit gebruikt worden voor ontwikkeling of verandering binnen Stad in de Maak?

    a. Zo ja, kunt u een voorbeeld noemen?

16. Heeft u barrières ondervonden in de ontwikkeling van Stad in de Maak?

    a. Zo ja, kunt u een voorbeeld/voorbeelden noemen?

    b. Welke partijen waren betrokken?

    c. Wat had volgens u kunnen helpen om de barrières te verminderen?

17. Ondervindt Stad in de Maak op het moment barrières richting de ontwikkeling?

    a. Zo ja, kunt u een voorbeeld/voorbeelden noemen?

    b. Welke partijen zijn betrokken?

    c. Wat zou volgens u kunnen helpen om de barrières te verminderen?

18. Denkt u dat er dingen zijn die de ontwikkeling van Stad in de Maak in staat kunnen stellen?

    a. Zo ja, kunt u een voorbeeld/voorbeelden noemen?

    b. Welke partijen zijn betrokken?

    c. Waarom zou dit volgens u kunnen helpen?

Aanwezigheid van bonding, bridging en linking activiteiten

    • Richten op de communicatie van de geïnterviewde/het communicatienetwerk

    • Focus: vertrouwen, regelmaat contact, vorm contact, kennis over anderen, helpen van elkaar.

19. Met wie communiceert u binnen of over uw leefomgeving?

20. Hoe is de communicatie met andere bewoners en oprichters?

    a. Vertrouwt u de andere bewoners/oprichters?

    b. Heeft u het gevoel op de hoogte te zijn van de levens van de andere bewoners/oprichters? (e.g. waar ze aan werken)

    c. Helpt u andere bewoners of oprichters met taken?

21. Is er communicatie met andere woongemeenschappen?

    a. Zo ja, hoe is deze communicatie?

    b. Denkt u dat deze communicatie iets bijdraagt aan het project? Zo ja; hoe?

    c. Zouden er verbeteringen kunnen plaatsvinden?

    d. Focus op: vertrouwen, kennis over andere woongemeenschappen, elkaar helpen

22. Is er communicatie met andere gemeenschappen/groepen in de omgeving?

    a. Zo ja, hoe is deze communicatie?

    b. Denkt u dat deze communicatie iets bijdraagt aan het project? Zo ja; hoe?

    c. Zouden er verbeteringen kunnen plaatsvinden?

    d. Focus op: vertrouwen, kennis over andere gemeenschappen, elkaar helpen

23. Hoe is de communicatie met externe partijen? (e.g. woningcorporatie, gemeente)

    a. Denkt u dat deze communicatie bijdraagt aan het project? Zo ja; hoe?

    b. Zouden er verbeteringen kunnen plaatsvinden?

    c. Focus op: tactieken, vorm van communicatie, regelmaat.

A4 INTERVIEW PROTOCOL CO-FOUNDER

Introduction: before starting the interview
- Discuss informed consent
- Introduce myself
- Explain the purpose of the interview
- Explain the to be discussed subjects
- Ask for permission to record the interview

General introduction interviewee: role interviewee in relation to SidM, and evolution SidM
1. Can you tell something about your role within/relation to Stad in de Maak:
    a. How did you become part of the project?
    b. How long have you been involved in the project?
    c. What is your current role within the project?
    d. Did your role change over time?
2. Could you tell something about the evolution of the project?

Presence of sharing economy characteristics
- If necessary: explain the three characteristics of sharing economy: under-utilized goods/spaces, sharing of these goods/space (by sharing, exchanging, rental), online tool.

3. What do you think about when you hear the term sharing economy?
4. When setting up Stad in de Maak, did you consider integrating unused spaces through sharing?
    a. If so, can you name an example?
    b. How did you envision the sharing to take place? (monetary benefits, exchange for good/service, using the space together) (online tools)
    c. How did you set it up?
    d. Did it work?
    e. What do you think are the benefits for Stad in de Maak?
    f. What do you think are the disadvantages for Stad in de Maak?
5. Do you think currently residents of Stad in de Maak are using unused spaces through sharing?
6. Hearing these characteristics; would you describe Stad in de Maak as a sharing economy?
7. Would you want to incorporate sharing economy characteristics?
    a. If so, why? How?
    b. Are there unused areas that might be used?

Barriers to self-organization
8. What do you think about when you hear the term self-organization? (depends on knowledge interviewee)
9. Do you consider Stad in de Maak a project that relies on self-organization? (ask if interviewee appears to understand the concept)
    a. Why do you think that?
10. What was your motivation for setting up Stad in de Maak?
11. How do you feel about being involved in a project like Stad in de Maak?
    a. Would you consider working on another project if you could instead of Stad in de Maak? If so; why?/What kind of alternative would it be?
12. How would you describe the leadership and organization within Stad in de Maak? (e.g. strong hierarchy, no hierarchy at all)
13. Do you consider yourself part of this organization?/What is the relationship between you and the residents?
14. Are there relations with external institutions?
    a. If so, what are these relations like?

15. Do you get the impression that creativity or spontaneity are used for the development/change within Stad in de Maak?
    a. If so, can you name an example?
16. Did you experience barriers in the development of Stad in de maak?
    a. If so, can you name examples?
    b. Which parties were involved?
    c. What do you think could have helped to relieve the barriers?
17. Is Stad in de Maak currently facing barriers towards their development?
    a. If so, can you name examples?
    b. Which parties are involved?
    c. What do you think can help to relieve the barriers?
18. Do you think there are enablers of the development of Stad in de Maak?
    a. If so, could you name examples?
    b. Which parties are involved in this?
    c. Why is this example an enabler?

Presence of bonding, bridging and linking activities (focus on linking)
    • Focus on the communication the interviewee has
    • Focus: trust, frequency contact, type of contact, knowledge about others, helping each other

19. How is the communication with external parties? (e.g. housing corporation, municipality)
    a. Do you think this communication adds to the project? If so; how?
    b. Could there be improvements?
    c. Do you employ specific tactics/use specific activities in contact with external parties?
    d. Focus on: tactics, type of communication, frequency.
20. Is there communication with other housing communities?
    a. If so, how is this communication going?
    b. Do you think this communication adds to the project? If so; how?
    c. Could there be improvements?
    d. Focus on: trust, knowledge about other communities, helping each other out
21. Is there communication with other communities within the area?
    a. If so, how is this communication going?
    b. Do you think this communication adds to the project? If so; how?
    c. Could there be improvements?
    d. Focus on: trust, knowledge about other communities, helping each other out
22. How is the communication between you as co-founder and the residents?
    a. Do you think this communication adds to the project? If so; how?
    b. Could there be improvements?
    c. Focus on: trust, knowledge about life details, frequency

Introductie: voor start interview
- Het informed consent formulier bespreken
- Toestemming vragen om het interview op te nemen
- Mezelf introduceren
- Het doel van het interview uitleggen
- De onderwerpen van het interview uitleggen: deeleconomie, structuur van de woongemeenschap en communicatienetwerk

Algemene introductie geïnterviewde: rol geïnterviewde binnen SidM, evolutie SidM
1. Kunt u iets vertellen over u rol binnen Stad in de Maak:
    a. Hoe bent u onderdeel van het project geworden?
    b. Hoe lang bent u al onderdeel van het project?
    c. Wat is uw huidige rol binnen het project?
    d. Is uw rol gedurende de tijd veranderd?
2. Kunt u iets meer vertellen over de evolutie van het project?

Aanwezigheid sharing economy kenmerken
- Wanneer nodig: uitleggen 3 kenmerken van sharing economy: onderbenutte plaatsen/spullen, delen van deze plaatsen of spullen (door delen, ruilen of huren), gebruik van een online tool.

3. Waar denkt u aan bij het begrip sharing economy?
4. Bij het ontwikkelen van Stad in de Maak, heeft u toen overwogen om ongebruikte plaatsen te gaan gebruiken voor delen?
    a. Zo ja, kunt u een voorbeeld noemen?
    b. Hoe zag u voor zich dat dat delen in zijn werk zou gaan? (financieel voordeel, het uitwisselen van een andere service/goed, het delen samen met anderen)
    c. Hoe heeft u het opgezet?
    d. Heeft het gewerkt?
    e. Wat zijn volgens u de voordelen voor Stad in de Maak?
    f. Wat zijn volgens u de nadelen?
5. Denkt u dat huidige bewoners van Stad in de Maak onderbenutte plaatsen gebruiken voor delen?
6. Als u de kenmerken van sharing economy hoort, zou u Stad in de Maak dan beschrijven als een sharing economy?
7. Zou u kenmerken van sharing economy willen gebruiken in Stad in de Maak?
    a. Zo ja, waarom? Hoe?
    b. Zijn er onbenutte plaatsen in uw woonomgeving die gebruikt zouden kunnen worden?

Barrières zelforganisatie
8. Waar denkt u aan bij het begrip zelforganisatie? (vragen afhankelijk van kennis interviewee)
9. Ziet u Stad in de Maak als een project dat leunt op zelforganisatie? (wanneer interviewee het concept begrijpt, en anders het uitleggen)
    a. Waarom denkt u dat?
10. Wat was uw motivatie voor het ontwikkelen/oprichten van Stad in de Maak?
11. Hoe voelt u zich over onderdeel zijn van Stad in de Maak?
    a. Zou u ervoor kiezen om mee te werken aan een ander project als dat zou kunnen? Zo ja; waarom?/Wat voor alternatief zou dat zijn?
12. Hoe zou u het leiderschap en de organisatie binnen Stad in de Maak omschrijven? (e.g. een sterke hiërarchie, geen hiërarchie)
13. Ziet u uzelf als onderdeel van deze organisatie?/Wat is de relatie tussen u en de bewoners?
14. Zijn er relaties met externe instanties, organisaties of bedrijven?
    a. Zo ja, hoe zijn deze relaties?

15. Heeft u de indruk dat spontane ideeën of creativiteit gebruikt worden voor ontwikkeling of verandering binnen Stad in de Maak?

    a. Zo ja, kunt u een voorbeeld noemen?

16. Heeft u barrières ondervonden in de ontwikkeling van Stad in de Maak?

    a. Zo ja, kunt u een voorbeeld/voorbeelden noemen?

    b. Welke partijen waren betrokken?

    c. Wat had volgens u kunnen helpen om de barrières te verminderen?

17. Ondervindt Stad in de Maak op het moment barrières richting de ontwikkeling?

    a. Zo ja, kunt u een voorbeeld/voorbeelden noemen?

    b. Welke partijen zijn betrokken?

    c. Wat zou volgens u kunnen helpen om de barrières te verminderen?

18. Denkt u dat er dingen zijn die de ontwikkeling van Stad in de Maak in staat kunnen stellen?

    a. Zo ja, kunt u een voorbeeld/voorbeelden noemen?

    b. Welke partijen zijn betrokken?

    c. Waarom zou dit volgens u kunnen helpen?

Aanwezigheid van bonding, bridging en linking activiteiten

• Richten op de communicatie van de geïnterviewde/het communicatienetwerk

• Focus: vertrouwen, regelmaat contact, vorm contact, kennis over anderen, helpen van elkaar.

19. Hoe en met wie is de communicatie met externe partijen? (e.g. woningcorporatie, gemeente)

    a. Voegt deze communicatie iets toe aan het project? Zo ja, hoe?

    b. Zouden er verbeteringen kunnen plaatsvinden?

    c. Gebruikt u specifieke tactieken/activiteiten voor dit contact?

    d. Focus op: tactieken, type van communicatie, regelmaat.

20. Is er communicatie met andere woongemeenschappen?

    a. Zo ja, hoe is deze communicatie?

    b. Denkt u dat deze communicatie iets bijdraagt aan het project? Zo ja; hoe?

    c. Zouden er verbeteringen kunnen plaatsvinden?

    d. Focus op: vertrouwen, kennis over andere woongemeenschappen, elkaar helpen

21. Is er communicatie met andere gemeenschappen/groepen in de omgeving?

    a. Zo ja, hoe is deze communicatie?

    b. Denkt u dat deze communicatie iets bijdraagt aan het project? Zo ja; hoe?

    c. Zouden er verbeteringen kunnen plaatsvinden?

    d. Focus op: vertrouwen, kennis over andere gemeenschappen, elkaar helpen

22. Hoe is de communicatie tussen u als oprichter en de bewoners?

    a. Denkt u dat deze communicatie bijdraagt aan het project? Zo ja; hoe?

    b. Zouden er verbeteringen kunnen plaatsvinden?

    c. Focus op: vertrouwen, regelmaat, kennis over leven.

A5 INTERVIEW PROTOCOL HAVENSTEDER

Introductie: voor start interview
- Het informed consent formulier bespreken
- Toestemming vragen om het interview op te nemen
- Mezelf introduceren & afstudeeronderzoek
- Doel interview: blik op SidM vanuit Havensteder
- De onderwerpen van het interview uitleggen: rol Havensteder, motivatie, samenwerking in het algemeen, verbeterpunten

Achtergrond & motivatie
1. Kunt u iets vertellen over uw rol binnen Stad in de Maak:
    - a. Wat was uw rol binnen Havensteder?
    - b. Wat was de motivatie van u om mee te doen?
    - c. Hoe bent u onderdeel van het project geworden?
    - d. Wat waren uw voornaamste taken/bezigheden?
    - e. Hoe lang bent u er onderdeel van geweest?
    - f. Is uw rol gedurende de tijd veranderd?
    - g. Wat is uw huidige rol binnen het project?
2. Wat was de motivatie van Havensteder?
    - a. Is de motivatie van Havensteder gedurende de tijd veranderd?
3. Wat zijn de voordelen van Stad in de Maak voor Havensteder?
4. Wat zijn de nadelen van Stad in de Maak voor Havensteder?

Evaluatie samenwerking
5. Wat ging goed aan de samenwerking?
6. Wat ging niet goed aan de samenwerking?
7. Wat maakte SidM moeilijk voor Havensteder?
8. Wat had Havensteder anders kunnen doen?

Toekomst
9. Denkt u dat de samenwerking nog lang blijft bestaan?
10. Hoe ziet u de ideale samenwerking met Stad in de Maak voor zich zien?
11. Hoe ziet u de ideale toekomst met Stad in de Maak voor zich?
12. Wat zou Havensteder anders kunnen doen?
13. Wat zou de ontwikkeling van SidM kunnen bevorderen?

Communicatie
14. Hoe zou u het contact tussen SidM en Havensteder omschrijven? (hiërarchie, verschillende rol, coöperatie)
    - a. Regelmaat? Vertrouwensband? Op de hoogte zijn van elkaar?
15. Zijn er binnen het contact nog andere partijen bij betrokken? (bijv. gemeente)

	CHARACTERISTIC	VARIABLE	RESIDENT	CO-FOUNDER	HAVENSTEDER
SHARING ECONOMY	Consumer-to-consumer interaction	Communication with other users	3-5	4-7	-
	Access rather than ownership	Presence of sharing	3-5	4-7	-
		Presence of exchanging	3-5	4-7	-
		Presence of renting	3-5	4-7	-
	Use of under-utilized assets	Idleness of asset/good without use	3-5	4-7	-
	(a common) Intrinsic motivation	Free choice of being part of the activity	8, 9	10, 11	2
		Interest, enjoyment in the activity	8, 9	10, 11	2
SELF-ORGANIZATION	Organization through negotiation and soft leadership	Hierarchy	7, 10-13	9, 12, 13	-
	Autonomy	Level of independence from the institutional environment	7, 14	9, 14	-
	Spontaneous emergence & creativity	Spontaneous development of ideas	7, 15	9, 15	-
		Creativity of ideas	7, 15	9, 15	-
SOCIAL CAPITAL	Bonding	Association with others within the group	12, 13, 19, 20	13, 22	-
		Trust in others within the group	12, 13, 19, 20	13, 22	-
	Bridging	Communication with/connection to external groups/communities	21, 22	20, 21	-
		Association with external groups/communities	21, 22	20, 21	-
		Trust in external groups/communities	21, 22	20, 21	-
	Linking	Communication with those with different levels of power/status	14, 23	14, 19	5-8, 14, 15
		Association with those with different levels of power/status	23	19	5-8, 14, 15
		Trust in those with different levels of power/status	-	19	5-8, 14, 15

MISCELLANEOUS QUESTIONS RESIDENT

1	General introduction interviewee
2	Impression understanding Sharing economy
6	Impression understanding self-organization
7	Impression connection self-organization
16	Previous barriers self-organization
17	Current barriers self-organization
18	Enabler self-organization

MISCELLANEOUS QUESTIONS CO-FOUNDER

1	General introduction interviewee
2	General information Stad in de Maak
3	Impression understanding Sharing economy
8	Impression understanding self-organization
16	Previous barriers self-organization
17	Current barriers self-organization
18	Enabler self-organization

MISCELLANEOUS QUESTIONS HAVENSTEDER

1	General introduction interviewee
3	Advantages Stad in de Maak for Havensteder
4	Disadvantages Stad in de Maak for Havensteder
9-13	Future and enablers of Stad in de Maak

Consent Form for thesis project Nina van Wijk

Please tick the appropriate boxes	Yes	No
Taking part in the study		
I have read and understood the study information dated 29/03/2019, or it has been read to me. I have been able to ask questions about the study and my questions have been answered to my satisfaction.	○	○
I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason.	○	○
I understand that taking part in the study involves an interview (with audio-recording and written notes), and two focus groups (with audio-recording and written notes).	○	○
Use of the information in the study		
I understand that information I provide will be used for the thesis project carried out by Nina van Wijk, MSc-student at the Delft University of Technology.	○	○
I understand that personal information collected about me that can identify me, such as my name or where I live, will not be shared beyond the study team.	○	○
I agree that my information can be quoted anonymously in research outputs.	○	○
Future use and reuse of the information by others		
I give permission for the audio recordings and notes of the interview answers and focus group contribution that I provide to be archived in the researchers' personal database so it can be used for future research and learning.	○	○
I give permission for the anonymized transcripts of the interview answers and focus group contribution that I provide to be archived in the researchers' offline, protected database so it can be used for future research and learning.	○	○

Signatures

_____   _____ _____
Name of participant   Signature   Date

I have accurately read out the information sheet to the potential participant and, to the best of my ability, ensured that the participant understands to what they are freely consenting.

_____   _____ _____
Name of researcher   Signature   Date

Study contact details for further information: Nina van Wijk, +31636188642, ninavanwijk@gmail.com

Information sheet thesis project Nina van Wijk

Date: 29/03/2019
Researcher name and contact details: Nina van Wijk, +31636188642, ninavanwijk@gmail.com
Representatives researcher: Dr Darinka Czischke Ljubetic, d.k.czischke@tudelft.nl, Dr Maarten van der Sanden, m.c.a.vandersanden@tudelft.nl
Institution: Delft University of Technology, MSc Management in the Built Environment (Faculty of Architecture and the Built Environment), MSc Science Communication (Faculty of Applied Sciences)

1 Research details and purpose

The case study Stad in de Maak is part of the integrated master thesis of Nina van Wijk, student of two MSc-programs at the Delft University of Technology. The research consists of a round of interviews, followed by two focus groups. The research starts in April 2019, and the final focus group will be carried out in September 2019. The research will conclude with the presentation of the written thesis in front of an audience, at the Delft University of Technology, in November 2019. The written thesis will be publicly available on the online repository of the Delft University of Technology. The purpose of the research is to connect the concept of sharing economy to cohousing initiatives, and whether sharing economy can support self-organization of cohousing initiatives. Furthermore, the research aims to provide a tangible advice or tool for the participating cohousing community, which will be tested in the second (final) focus group.

2 Benefits and risks of participating

The to-be-developed advice or tool will be beneficial for the participant, as the goal is to benefit the Stad in de Maak community. The risk of participating is possible leakage of personal data (section 4). This risk is minimized by anonymizing all data which will be shared with the study team, or referred to in the written thesis. Furthermore, personal data will only be stored on the private, protected, offline hard drive of the researcher, and not in any cloud or online service.

3 Procedure for withdrawal from the study

At any given moment the participant can withdraw from the study, by sending a written notice to the email address of the researcher. A reason for withdrawal is not required.

4 Collection of personal information from the participant

The amount of personal information from the participant that will be collected is limited to the participants' name and address. The personal information will be stored on the private, protected, offline hard drive of the researcher, and not in any cloud or online service. The address and names will be collected for research purposes only. Names will be anonymized in all documents that are available to anyone other than the researcher herself. Rectifications of, access to or erasure of personal data are available by sending a written request to the researchers' email address. Names will be anonymized in all research data on the offline hard drive after finishing the project.

5 Data usage and dissemination

Data from the interviews and focus groups will be collected in two ways: audio recording and written notes. This data will be stored on the private, protected, offline hard drive of the researcher, and not in any cloud or online service. Furthermore, the audio recordings will be transcribed. Transcriptions will be anonymized, referring to participants as "Co-founder 1, Co-founder 2, …" or "Resident 1, Resident 2, …". The anonymized data will be stored on the hard drive of the researcher for 10 years, which is in line with the Dutch Code of Conduct for Academic Practice.

Audio recordings, written notes or transcriptions will not be disseminated and are only available to the researcher herself. Data will be shared within the study team (i.e. with representatives and mentors of the researcher). The data will not be used for any commercial purposes.

Research data will be used for the written thesis and for developing a specific advice or tool. In the written thesis, anonymized quotes of participants will be used, referring to participants as "Co-founder 1, …" or "Resident 1, …".

Consent Form for thesis project Nina van Wijk

Please tick the appropriate boxes	Yes	No
Taking part in the study		
I have read and understood the study information dated 25/04/2019, or it has been read to me. I have been able to ask questions about the study and my questions have been answered to my satisfaction.	O	O
I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason.	O	O
I understand that taking part in the study involves an interview (with audio-recording and written notes).	O	O
Use of the information in the study		
I understand that information I provide will be used for the thesis project carried out by Nina van Wijk, MSc-student at the Delft University of Technology.	O	O
I understand that personal information collected about me that can identify me, such as my name or where I live, will not be shared beyond the study team.	O	O
I agree that my information can be quoted anonymously in research outputs.	O	O
Future use and reuse of the information by others		
I give permission for the audio recordings and notes of the interview answers to be archived in the researchers' personal database so it can be used for future research and learning.	O	O
I give permission for the anonymized transcripts of the interview answers to be archived in the researchers' offline, protected database so it can be used for future research and learning.	O	O

Signatures

_____   _____   _____
Name of participant   Signature   Date

I have accurately read out the information sheet to the potential participant and, to the best of my ability, ensured that the participant understands to what they are freely consenting.

_____   _____   _____
Name of researcher   Signature   Date

Study contact details for further information: Nina van Wijk, +31636188642, ninavanwijk@gmail.com

Information sheet thesis project Nina van Wijk

Date: 25/04/2019
Researcher name and contact details: Nina van Wijk, +31636188642, ninavanwijk@gmail.com
Representatives researcher: Dr Darinka Czischke Ljubetic, d.k.czischke@tudelft.nl, Dr Maarten van der Sanden, m.c.a.vandersanden@tudelft.nl
Institution: Delft University of Technology, MSc Management in the Built Environment (Faculty of Architecture and the Built Environment), MSc Science Communication (Faculty of Applied Sciences)

1 Research details and purpose

The case study Stad in de Maak is part of the integrated master thesis of Nina van Wijk, student of two MSc-programs at the Delft University of Technology. The research consists of a round of interviews, followed by two focus groups. The research starts in April 2019, and the final focus group will be carried out in September 2019. The research will conclude with the presentation of the written thesis in front of an audience, at the Delft University of Technology, in November 2019. The written thesis will be publicly available on the online repository of the Delft University of Technology. The purpose of the research is to connect the concept of sharing economy to cohousing initiatives, and whether sharing economy can support self-organization of cohousing initiatives. Furthermore, the research aims to provide a tangible advice or tool for the participating cohousing community, which will be tested in the second (final) focus group.

2 Benefits and risks of participating

The to-be-developed advice or tool will be beneficial for the participant, as the goal is to benefit the development of the Stad in de Maak community. The risk of participating is possible leakage of personal data (section 4). This risk is minimized by anonymizing all data which will be shared with the study team, or referred to in the written thesis. Furthermore, personal data will only be stored on the private, protected, offline hard drive of the researcher, and not in any cloud or online service.

3 Procedure for withdrawal from the study

At any given moment the participant can withdraw from the study, by sending a written notice to the email address of the researcher. A reason for withdrawal is not required.

4 Collection of personal information from the participant

The amount of personal information from the participant that will be collected is limited to the participants' name and current & former employment. The personal information will be stored on the private, protected, offline hard drive of the researcher, and not in any cloud or online service. The personal data will be collected for research purposes only. Names will be anonymized in all documents that are available to anyone other than the researcher herself. Rectifications of, access to or erasure of personal data are available by sending a written request to the researchers' email address. Names will be anonymized in all research data on the offline hard drive after finishing the project.

5 Data usage and dissemination

Data from the interview will be collected in two ways: audio recording and written notes. This data will be stored on the private, protected, offline hard drive of the researcher, and not in any cloud or online service. Furthermore, the audio recordings will be transcribed. Transcriptions will be anonymized. The anonymized data will be stored on the hard drive of the researcher for 10 years, which is in line with the Dutch Code of Conduct for Academic Practice.
Audio recordings, written notes or transcriptions will not be disseminated and are only available to the researcher herself. Data will be shared within the study team (i.e. with representatives and mentors of the researcher). The data will not be used for any commercial purposes.
Research data will be used for the written thesis and for developing a specific advice or tool. In the written thesis, anonymized quotes of participants will be used.

A9 CODING FRAMEWORK & EXAMPLES

CHARACTERISTICS	VARIABLE	CODE	EXPLANATION
Consumer-to-consumer interaction (possibly by using online services)	Communication with other consumers	Communication with other users	Interviewee addresses communication with other users.
Access rather than ownership	Presence of sharing	Sharing	Interviewee addresses access to the good in the form of sharing.
	Presence of exchanging	Exchanging	Interviewee addresses access to the good in the form of an exchange.
	Presence of renting	Renting	Interviewee addresses access to the good in the form of renting.
Use of under-utilized assets (circularity)	Idleness of asset/good without use	Idleness asset/good	Interviewee addresses whether the asset/good stands idle without use.
General information	Advantage sharing	Advantage – sharing	Interviewee addresses advantages of sharing.
	Disadvantage sharing	Disadvantage – sharing	Interviewee addresses disadvantages of sharing.
	Presence sharing economy	Presence sharing economy	Interviewee addresses whether a sharing economy is present.

CHARACTERISTICS	VARIABLE	CODE	EXPLANATION
(a common) Intrinsic motivation	Free choice	Free choice	Interviewee addresses free choice
	Interest, enjoyment	Interest/enjoyment	Interviewee addresses feelings of interest or enjoyment.
Organization through negotiation and soft leadership	Hierarchy	Hierarchy	Interviewee addresses the hierarchy within the project.
Autonomy	Level of independence from the institutional environment	Independence institutional environment	Interviewee addresses the (in)dependence of the institutional environment.
Spontaneous emergence & creativity	Spontaneous development	Spontaneous development	Interviewee addresses spontaneous development of initiatives within the project.
	Creativity	Creativity	Interviewee addresses creativity of initiatives within the project.
General	Barrier self-organization	Barrier – self-organization	Interviewee addresses barriers to the development of the project.
	Enabler self-organization	Enabler – self-organization	Interviewee addresses enablers of the development of the project.

FORM SOCIAL CAPITAL	VARIABLE	CODE	EXPLANATION CODE
Bonding capital among residents	General	Communication residents - Evaluation	Interviewee evaluates the communication with other residents.
		Communication residents – Frequency & process	Interviewee addresses the process of communication with other residents.
	Association	Communication residents - Association	Interviewee addresses the level of association with other residents.
	Trust	Communication residents - Trust	Interviewee addresses the level of trust with other residents.
Bonding capital between residents and co-founders	General	Communication residents & co-founders - Evaluation	Interviewee evaluates the communication between residents and co-founders.
		Communication residents & co-founders - Frequency & process	Interviewee addresses the process of communication between residents and co-founders.
	Association	Communication residents & co-founders - Association	Interviewee addresses the level of association between residents and co-founders.
	Trust	Communication residents & co-founders - Trust	Interviewee addresses the level of trust between residents and co-founders.
Bridging capital	General	Communication external communities - Evaluation	Interviewee evaluates the communication with external communities.
		Communication external communities - Frequency & process	Interviewee addresses the process of communication with external communities.
	Association	Communication external communities - Association	Interviewee addresses the level of association with external communities.
	Trust	Communication external communities - Trust	Interviewee addresses the level of trust with external communities.
Linking capital	General	Communication other levels of power - Evaluation	Interviewee evaluates the communication between residents/co-founders and other levels of power.
		Communication other levels of power - Frequency & process	Interviewee addresses the process of communication between residents/co-founders and other levels of power.
	Association	Communication other levels of power - Association	Interviewee addresses the level of association between residents/co-founders and other levels of power.
	Trust	Communication other levels of power - Trust	Interviewee addresses the level of trust between residents/co-founders and other levels of power.

Category	CODE	EXAMPLE QUOTE (FROM THE CODED INTERVIEWS)
SHARING ECONOMY	Communication with other users	"Het is gewoon een beetje vragen in ons eigen groepje dit pand zeg maar, of hij vrij is en of er iemand kan slapen." (resident 1)
	Sharing	"Laatst was ik mijn fiets aan het repareren toen had ik een tangetje nodig waarmee je een ketting kan openschroeven. Is een speciaal tuutje. En toen vertelde Luuk dat was ie er zo eentje had ie toen mocht ik er eentje hebben want die had er een over." (resident 1)
	Exchanging	"Dus ja in ruil je zou kunnen zeggen hij betaalt zijn huur voor een deel in werkzaamheid op andere plekken." (co-founder 1)
	Renting	"Je kunt voor een avond de hele boel afhuren en voor veel mensen koken daar." (co-founder 1)
	Idleness asset/good	"Die ruimte kan je gewoon gebruiken want die staat hier vrij." (resident 2)
	Advantage – sharing	"Ik vind het gewoon heel fijn dat er weer iets gebeurt. Dat vind ik een voordeel." (resident 2)
	Disadvantage – sharing	"You know all aspects of life are sort of coming together here. Yeah. So that is really intense." (resident 1)
	Presence sharing economy	"I mean yes of course. Because I think actually their basic concept is purely like a sharing economy." (resident 1)
SELF-ORGANIZATION	Free choice	"Het zou best kunnen maar ik wil het niet." (resident 2)
	Interest/enjoyment	"Ik zit hier heel fijn en ik vind het netwerk heel veel waard." (resident 2)
	Hierarchy	"Iedereen heeft overal evenveel recht op alleen het enige wat er gebeurt, is dat ik vaak degene ben die contactpersoon is maar dat is niet een hiërarchische keuze of plek." (resident 2)
	Independence institutional environment	"Ze zijn natuurlijk best wel afhankelijk van Havensteder." (resident 2)
	Spontaneous development	"It's very improvised. So we just uh take effort to put some chairs on." (resident 1)
	Creativity	"And then I got to see that paper that called a bulletin. That was for example an initiative of one of the residents of the building." (resident 1)
	Barrier – self-organization	"Finding the right language, a common language, is a challenge." (resident 1)
	Enabler – self-organization	"Maar ik vond hun format van zo'n pension, weet je wel. Dat idee dat concept dat hadden ze eigenlijk geprojecteerd op dat kopen. Op die koppanden. Ik vond dat wel een heel goed idee." (housing corporation 1)
BONDING	Communication residents - Evaluation	"So I just find myself very comfortable like this. I mean. There is a lot of things that don't, of course they're not perfect because being constantly confronted with other people is a challenge to yourself." (resident 1)
	Communication residents – Frequency & process	"Eigenlijk moet je gewoon meetings hebben, in ieder geval één keer in het half jaar ofzo, dat je iedereen ziet." (resident 2)
	Communication residents - Association	"Especially in this building, yeah. Most of the times. Yeah. To some general knowledge yeah what everyone is up to or doing." (resident 1)
	Communication residents - Trust	"Dat ik dacht, huh, maar dat is toch heel vanzelfsprekend dat je elkaar gewoon vertrouwt. Dus toen schrok ik even en ik dacht oh oke dat is dus niet, dat is dus gewoon perspectief." (resident 2)
BONDING CO-FOUNDERS	Communication residents & co-founders - Evaluation	"Erik best vaak, ik kan het ook heel goed vinden met Erik." (resident 2)
	Communication residents & co-founders - Frequency & process	"They try to be as much in contact with us as possible.." (resident 1)
	Communication residents & co-founders - Association	"Dat zijn altijd een beetje sneeuwvlokjes, dus hoor je niet heel veel over maar af en toe is er gewoon een bijeenkomst en dan hoor je het een beetje of je komt hem tegen en dan vertelt hij het een en ander." (resident 2)
	Communication residents & co-founders - Trust	"Jahoor, ik kan ze wel vertrouwen, maar dat is ook omdat ze natuurlijk wel voorzichtig zijn met beloftes." (resident 2)
BRIDGING	Communication external communities - Evaluation	"Er is niet echt buurtcontact hier eerlijk gezegd, dat vind ik wel jammer." (resident 2)
	Communication external communities - Frequency & process	"Ik ken een paar mensen, die zeg je gedag, maar dat is een beetje zoals iedereen die in de stad woont." (resident 2)
	Communication external communities - Association	"I think it would be just pure knowledge sharing and experience." (resident 1)
	Communication external communities - Trust	"Wat er nu met Luuuk gebeurt en zijn werkplaats, is dat hij zo veel dure apparatuur heeft en gewoon een beetje bang is dat als hij de gordijnen openzet dat mensen daar naar binnen gaan gluren en dingen willen jatten." (resident 2)
LINKING	Communication other levels of power - Evaluation	"En inderdaad die andere manier van denken vond ik ook een prettige." (housing corporation 1)
	Communication other levels of power – Frequency & process	"… liep ie gewoon binnen op kantoor. Hij maakt geen afspraak ofzo, maar stond ineens aan de balie." (housing corporation 1)
	Communication other levels of power - Association	"Wij hebben nu een probleem, zij niet, dus we moeten echt, zeg maar, voorstellen aankaarten." (co-founder 1)
	Communication other levels of power - Trust	"Ik heb daar wel een goeie vertrouwensband mee opgebouwd. Ik ken hen ook lang hè, dus dat scheelt." (housing corporation 1)

A10 COMPLETE RESULTS SHARING ECONOMY

CHARACTERISTIC	VARIABLE	RESIDENT 1	RESIDENT 2	CO-FOUNDER 1/2	HOUSING CORPORATION 1	HOUSING CORPORATION 2	CONCLUSION
CONSUMER-TO-CONSUMER INTERACTION	Communication with other users	Hard being constantly confronted with other people's lives; communication comes naturally because there is friendship; unanimous decision-making for new initiatives.	Permission is asked for initiatives in the commons; wants to make schedules/rosters for sharing spaces; some sharing practices happen without set rules; sharing the extra bedroom goes well; WhatsApp is used for communication; plan to improve common spaces with roommates.	Several rules in the commons: (1) Leave the commons empty after use (e.g. a clean desk policy); (2) you need to improve a space when you use it often.	-	-	Communication is mostly face-to-face or through WhatsApp; there are some rules for using the spaces, but not strictly defined; unanimous decision-making is used.
ACCESS RATHER THAN OWNERSHIP	Presence of sharing	Access is the currency (sharing); cinema has no entrance fee; sharing of facilities; residents are asked to work (for money); common space is free	Free ground floor and other shared places; borrow idle assets/goods.	Commons downstairs are shared.	-	-	Most of the access to space/goods within Stad in de Maak is based on sharing.
	Presence of exchanging	Residents are asked to do work in the buildings for a small fee.	-	Resident renovated an apartment in exchange for free rent.	-	-	Some exchanging takes place within Stad in de Maak.
	Presence of renting	Neighbors pay a small fee to use the washing machine in the commons.	-	One building rents out their commons as a restaurant space.	-	-	Some renting takes place within Stad in de Maak.
USE OF UNDER-UTILIZED ASSETS	Idleness of asset/good without use	Cinema had to get rid of the chairs so residents took them for their cinema initiative.	Other resident had an unused spinning wheel, which she is planning on using; commons downstairs stands idle; spare bedroom stands idle.	The buildings were idle properties in the housing corporation's portfolio; commons are empty when they are not used; idleness leads to new initiatives among residents.	Two buildings were in need of renovation and empty, within a street that was also in Havensteder's portfolio.	-	Buildings were standing idle; residents use idle spaces and idle goods (within the community or beyond); idle spaces provide opportunities for initiatives.
GENERAL INFORMATION	Presence sharing economy	Yes, the basic concept is a sharing economy.	Yes, but improvements are needed, as people are not aware enough of what happens in the buildings and what is possible.	-	-	-	Yes, but one resident thinks improvements are needed, as people are not aware of what happens in the buildings and what is possible.
	Advantages	Financial affordability; saving products.	Saving time/money and products; activity/dynamic around you.	Being self-sufficient with your economy; creating a community.	-	-	Saving money/time; creating and being part of a community & having a network.
	Disadvantages	More confrontation than if you would alone; intensity of relationships, as you share your life.	When spaces stand idle, it's very quiet; communication is very important to avoid annoyances.	Disagreements among co-founders about whether to 'force' residents to use empty spaces.	-	-	Intensity of relationships; communication is complex; lack of usage of empty spaces.

A11 COMPLETE RESULTS SELF-ORGANIZATION

CHARACTERISTIC	VARIABLE	RESIDENT1	RESIDENT 2	CO-FOUNDER 1/2	HOUSING CORPORATION 1	HOUSING CORPORATION 2	CONCLUSION
(A COMMON) INTRINSIC MOTIVATION	Free choice of being part of the activity	Not free choice; forced because of the market conditions (but addresses all living is conditional).	Yes; could live elsewhere but does not want to.	-	-	-	For one resident, it is free choice, for the other it is not (financial reasons/no alternative).
	Interest, enjoyment in the activity	Situation can be suffocating because of the intense way of living together.	Learning a lot from others; more fun than regular renting; happy to know others and being able to use the network	-	Fun solution.	The enthusiasm of Stad in de Maak is contagious.	Fun initiative; learning from others; more fun than regular renting; network makes one resident happy, other resident can feel suffocated.
ORGANIZATION THROUGH NEGOTIATION AND SOFT LEADERSHIP	Hierarchy	Co-founders are a bit separate; does not really have a feeling of hierarchy.	Co-founders are part of the group, but still seen as separate; everyone has similar rights; various roles (e.g. communication role) do not lead to hierarchy.	Unfortunately seen as 'the co-founders' and the 'boss'.	-	-	There is no hierarchy in role or rights, but co-founders are seen as separate. Residents find it remarkable that co-founders live elsewhere. Co-founders do not want to be 'the boss'.
AUTONOMY	Level of independence from the institutional environment	Dependent from Havensteder, creates feeling of uncertainty.	Dependent from Havensteder, creates feeling of uncertainty, but she does not think this is a problem.	Dependent from Havensteder; dependent from the municipal rules.	Stad in de Maak pays no rent, and is dependent of Havensteder.	They are dependent of Havensteder, and Havensteder is dependent of higher authorities.	There is dependence of Havensteder, and to some extent from the municipality. This creates uncertainty for residents. Co-founders want to acquire property, but finances are complex.
SPONTANEOUS EMERGENCE & CREATIVITY	Creativity	Bulletin is an example of a creative activity that at a resident set up.	At Pieter de Raadtstraat there is a lot of creativity; Wasbuur, cinema, working space.	-	-	-	Several initiatives used creativity: the Bulletin, Wasbuur, cinema and working space.
	Spontaneous development	Set up of the cinema was spontaneous; initiatives happen through talking to one another.	At Bloklandstraat there could be more spontaneous development. Resident attributes it to the closed commons.	Cinema arised spontaneously from residents' intiative; residents should be involved in new initiatives to make it work.	-	-	Activities (should) happen through spontaneous development from the residents, because of the possibilities of the empty spaces.
	Intrinsic motivation	Political and societal (different way of doing things); practical (financial, not many options as foreigner).	Having a strong network; more fun concept than regular renting; had to find a place in Rotterdam because of a new degree she started.	Do something good for the neighborhood; new way of practicing architecture; societal/political (people without money should be able to be part of something like this); question social housing (why should you pay as much as is affordable)	Solution to temporary problem; not a standard business case (but still useful for Havensteder)	(societal) Novel ideas that they know how to portray; they can have an impact on the neighborhood & on the relationship with current residents that have to move; solution for a problem in Havensteder's portfolio; no financial motivation	Motivations show some overlap. Some are political/societal, others more practical.
GENERAL INFORMATION	Barrier	Dependence Havensteder; people have various motivations; there is no structure; lack of contact with some buildings; various cultures; knowledge of what other buildings do is lacking.	Uncertain situation/dependence Havensteder; motivations for people to join differ; not knowing what everyone is doing; distance co-founders (because they are not residents).	Uncertainty of the situation/dependence Havensteder; municipal rules do not correspond with SidM; consensus democracy has not been formalized, people want more rules, also for sharing; limited time as co-founders to work on buying a building.	Project only works because they do not pay rent, SidM is not independent; not everyone within Havensteder is convinced of SidM's model; SidM's image.	Less opportunities within Havensteder portfolio; strict governmental rules; they are dependent on Havensteder; property sale will be checked by authorities, and as long as social aspects are not taken into account SidM will lose; SidM is more focused on social goals than their business case, threatens their image.	Finances; dependence institutional environment; differing motivations; lack of rules for decision-making; setting up rules for sharing; complex communication; image SidM.
	Enabler	Permanent building/minimizing outside forces; stay on top of development outside; the market; do-it-yourself attitude; organize themselves; make sure everyone is heard; add value in the neighborhood.	Knowing what people are up to/who to contact; become essential in the neighborhood; share knowledge/experience with other communities; join forces, maybe buy something with residents together; co-founder convinced Havensteder through ideas.	Not having to pay rent; becoming essential in the neighborhood; give residents the opportunity to organize stuff themselves; market situation and political situation; small group; having self-reliant residents.	Novel and interesting ideas; create projects that exceed the expectations; watch market and trends (cooperative economy as a trend); working with other housing corporations.	Societal goals; regular contact (to notice opportunities); connection to Havensteders' plan (inclusive city); working together with another housing corporation in the area (e.g. Woonstad, Vestia).	Market situation; political situation; feasible business case; knowledge sharing inside or outside the community; contribution to the neighborhood; having self-reliant residents; joining forces (with residents or other communities); novel ideas; working with other housing corporations.

CHARACTERISTIC	VARIABLE	RESIDENT1	RESIDENT 2	CO-FOUNDER 1/2	HOUSING CORPORATION 1	HOUSING CORPORATION 2	CONCLUSION
BONDING AMONG RESIDENTS	Association	There is knowledge of what everyone is up to; you know who should call for what kind of thing; Bulletin was great for staying in touch; share knowledge; help your fellow (foreign) residents out; everyone has their own lifestyle/engagements; roommates are seen as friends.	Everyone is slightly up-to-date of what everyone is doing, but can be improved; information on one roommate is lacking; everyone has their own schedule/lifestyle; learning from each other.	-	-	-	Knowledge sharing could be better; association depends on lifestyle; identified as friends.
	Trust	Lot of trust, also with the other residents.	Varying levels of trust; personally trusts everyone; trust level in the group can be improved.	-	-	-	There is trust, but it depends on the person how much.
	Frequency & process	Talk to each other in the halls, frequently with residents in the same building; some buildings communicate less with other buildings than others.	Talk face-to-face when you run into one another; sometimes through Whatsapp; regular meetings should become a thing.	-	-	-	Frequent communication; regular meetings with all residents might be good.
	Evaluation	It is challenging, intense and sometimes a bit suffocating; likes the personal relationship. Describes roommates as friends.	Learn a lot about each other and what everyone is doing, but this can be improved; relationships are good, but you have people you like and dislike.	-	-	-	Relationships can be intense, but are enjoyed; there are people you like and dislike.
BONDING BETWEEN CO-FOUNDERS AND RESIDENTS	Association	-	Would want to stay on top of what the co-founders are working on.	-	-	-	Co-founders provide snowflakes of information.
	Trust	She and other residents trust the co-founders.	Yes, also because the co-founders are careful with making promises.	-	-	-	There is a level of trust.
	Frequency & process	Communication with Erik & Piet regularly, as they are in the same building.	Part of the residents; snowflakes of information; main contact person of her building.	Distinction between residents and co-founders.	-	-	Communication whenever's needed; co-founders are seen as separate.
	Evaluation	Open and personal relationship; strange that they are not part of the residents, but maybe healthy	Bit strange that the co-founders are no residents	Residents know Erik better; Piet is the theorist and boss; Marc & Ana are more distant; distinction residents and co-founders	-	-	No fixed process; there is an open and personal relationship; possibly strange the co-founders are not resident.
BRIDGING	Association	Co-founders stay on top of other models; share the knowledge and experience with other cooperatives; not necessarily personal contact with other communities.	SidM can learn from the process of other housing communities; within the neighborhood you greet the neighbors.	Work together with other communities to create VrijCoop through sharing knowledge/expertise/experiences; contact with Woongenootschap, Poortgebouw, some street residents.	-	-	Co-founders have the most connections with other communities. Can be useful for learning (knowledge and experience sharing); low-key relationship with neighbors, dependent on the building.
	Trust	Lot of trust.	Could be improved, not everyone trusts the neighbor.	-	-	-	There is trust, but could be improved.
	Frequency & process	Some contact with people within the neighborhood at events	Whenever you run into one another.	There is some communication, they do not come by super regularly.	-	-	Contact at events from SidM or on the street.
	Evaluation	Good to learn from other cohousing communities.	Relationship with the neighbors could be improved, regarding trust but also that they feel welcome at the Bloklandstraat.	Tried to create a lobby group, but they had to do everything within the group; contact with the neighbors is good.	-	Havensteder wonders if SidM creates an added value for the neighborhood.	Contact can be useful, might be improved; positive relationship with the neighbors.

Association	Zero contact with Havensteder; knowing what happens through the co-founders.	Information is gained through co-founders.	Havensteder does not have a problem anymore, so SidM has to actively engage with them and come up with ideas	Stad in de Maak probably learned about the whole housing corporation system world through Havensteder; corporation was inspired by way of thinking SidM	At Almondestraat there is knowledge of what is happening, at Pieter de Raadtstraat SidM operates independently	Co-founders try to stay on top of what Havensteder is up to; residents gain information on the relationship through the co-founders. Havensteder knows to some extent what Stad in de Maak is up to (e.g, at Almondestraat), but not for every property.
Trust	Zero contact.	Zero contact.	-	Trust with them, especially Erik and Piet; they have been in his network for a while	There is a level of trust, but not entirely in whether they can create a feasible/viable business case	Havensteder trusts the co-founders, but is unsure of the financial feasibility of their plans; co-founders are dependent
LINKING						
Frequency & process	Zero contact.	No contact with Havensteder, not encouraged by the co-founders.	Whenever a meeting is necessary	Informal process, spontaneous sometimes and sometimes regularly.	SidM comes over to tell about the project to other (not yet convinced) employees, without a pattern; there are regular evaluation meetings for the Almondestraat.	No contact between residents and Havensteder; perceived as an informal process by Havensteder. Previously no regularity in meetings, now regular evaluation meetings for Almondestraat
Evaluation	Zero contact.	Relationship co-founders and Havensteder is fragile, interviewee thinks it makes sense that residents are not in contact with them.	SidM has to stay on top of Havensteder and keep the contact and collaboration going.	Co-founder 2 was good at keeping contact; other way of thinking was enjoyed.	Stad in de Maak should get into contact with other corporations if possible. Not everyone at Havensteder is pro SidM as the project and their ideas do not fit in a standard box.	SidM has to stay on top of Havensteder and keep the contact and housing project going; other way of thinking is enjoyed by Havensteder; resident perceives the relationship between co-founders and Havensteder as fragile.

A13 SET-UP VALIDATION

VALIDATION EMAIL RESIDENTS & CO-FOUNDERS (ENGLISH)

Dear [interviewee],

Earlier this year I interviewed you for my master thesis research on sharing economy and self-organization. Thank you again for your time, you have contributed greatly to my research! I have analyzed the interview findings and was wondering if you would be willing to have a look at the findings, and answer the questions formulated below. It will take approximately 10 minutes and would help me a great deal!

I have attached a PDF file with two sections: sharing economy and self-organization. For both, there is a small description (corresponding with questions 1 for both), and tables with the main findings.

Sharing economy
1. Does the description of the sharing economy within Stad in de Maak match with your perception of how sharing takes place within Stad in de Maak?
2. Do the advantages and disadvantages of the sharing economy within Stad in de Maak match with your perception of advantages and disadvantages of sharing within Stad in de maak?
3. The opinions on disadvantages were ambiguous: some interviewees view the disadvantages as a problem, others do not. Do you think that residents of Stad in de Maak have varying ideas of what the disadvantages of sharing are?

Self-organization
1. Does the description of the self-organization of Stad in de Maak match with your perception of how Stad in de Maak is organized?
2. Do the barriers and enablers of self-organization of Stad in de Maak match with your perception of what the barriers and enablers of self-organization of Stad in de Maak are?
3. The opinions on barriers were ambiguous: some interviewees view the barriers as a problem, others do not. Do you think that within Stad in de Maak there are varying opinions of what the barriers to its organization are?

Please let me know if it would be possible to have a look at the results. I would like to start reviewing the responses a week from now.

Again, it would help me a lot if you could review the results! Thank you in advance.

Best wishes,
Nina van Wijk
Student MSc Management in the Built Environment & MSc Science Communication, TU Delft

VALIDATION EMAIL RESIDENTS & CO-FOUNDERS (DUTCH)

Beste [interviewee],

Eerder dit jaar heb ik u geïnterviewd voor mijn master thesis onderzoek over sharing economy en zelforganisatie. Opnieuw bedankt voor uw tijd, uw bijdrage heeft een hele hoop toegevoegd aan mijn onderzoek! Ik heb de interviewresultaten geanalyseerd en vroeg me af of u tijd zou hebben om de interviewresultaten te bekijken, en onderstaande vragen te beantwoorden. Het kost ongeveer 10 minuten en zou mij heel erg helpen!

Ik heb een PDF bijgevoegd met twee onderdelen: sharing economy en self-organization. Voor beide is er een kleine omschrijving (horend bij vragen 1 bij beide),en tabellen met de belangrijkste bevindingen. De resultaten zijn in het Engels, ik hoop dat dit geen probleem is, en anders hoor ik het graag.

Sharing economy
1. Komt de omschrijving van de sharing economy van Stad in de Maak overeen met uw perceptie van hoe delen in zijn werk gaat bij Stad in de Maak?
2. Komen de voor- en nadelen van de sharing economy van Stad in de Maak overeen met uw perceptie van wat de voor- en nadelen zijn van delen binnen Stad in de Maak?
3. De meningen over voor- en nadelen waren ambigu: sommige interviewees zien nadelen als een probleem, voor anderen zijn het geen problemen. Denkt u dat bewoners van Stad in de Maak verschillende ideeën hebben over wat de nadelen van delen zijn?

Self-organization
1. Komt de omschrijving van de zelforganisatie van Stad in de Maak overeen met uw perceptie van hoe Stad in de Maak is georganiseerd?
2. Komen de barrières (barriers) en aanjagers (enablers) van de zelforganisatie van Stad in de Maak overeen met uw perceptie van wat barrières en aanjagers van Stad in de Maak zijn?
3. De meningen over barrières waren ambigu: sommige interviewees zien barrières als een probleem, voor anderen zijn het geen problemen. Denkt u dat bewoners van Stad in de Maak verschillende ideeën hebben over wat de barrières voor de organisatie van Stad in de Maak zijn?

Ik hoor graag of het mogelijk zou zijn voor u om naar de resultaten te kijken. Ik ben voornemens de antwoorden te verwerken over één week vanaf nu.

Het zou me heel erg helpen als u naar de resultaten zou kunnen kijken! Alvast bedankt.

Met vriendelijke groet,
Nina van Wijk
Student MSc Management in the Built Environment & MSc Science Communication, TU Delft

STAD IN DE MAAK INTERVIEWS - FINDINGS

FINDINGS SHARING ECONOMY

Stad in de Maak can be described as a sharing econo-my. Residents share common spaces, which is facili-tated through frequent (face-to-face) contact. The common spaces stand idle without sharing.

Online tools are rarely used, apart from WhatsApp as communication medium.
Below, advantages and disadvantages of the sharing economy at Stad in de Maak are given.

Advantages	Saving time and money	By sharing, you can save time and money.
	Having a strong community & network	The sharing taking place within Si/dM leads to a strong community and network.
Disadvantages	Intense relationships	Daily sharing of living spaces can intensify the relationships with those your share the spaces with.
	Complex communication	Residents have other wishes and backgrounds, which makes communication complex.
	Lack of usage of empty spaces	The empty common spaces are not necessarily used.

FINDINGS SELF-ORGANIZATION

To improve the level of self-organization Stad in de Maak, several aspects need to be worked on. Not all residents live there out of free choice, some have no alternative. Also, there is a dichotomy between resi-dents and co-founders, creating a hierarchy.

Thirdly, Stad in de Maak is dependent of housing cor-poration Havensteder, hampering their autonomy. Below, barriers and enablers of the development of Stad in de Maak are given.

Barriers	Complex communication	There is limited communication between Si/dM buildings and finding a common language is hard.
	Setting up rules for sharing	Developing rules for sharing is complex.
	Differing motivations	Motivations to be part of Si/dM differ between residents and co-founders, and among residents.
	Decision-making	Collective decision-making about Si/dM is informal and ad hoc.
	Dependence institutions	Si/dM is dependent of Havensteder for having property.
	Finances	Si/dM is not financially feasible without borrowing Havensteders' property.
	Image Stad in de Maak	The image of Si/dM may hamper connections with other parties.

Enablers	Political situation	The political climate influences policies and thus Si/dM.
	Knowledge sharing	Knowledge sharing among residents or with other cohousing initiatives can help.
	Joining forces	Residents can join forces to buy a building together, or Si/dM can join forces with the VrijCoop syndicate.
	Market situation	Si/dM is a result of the crisis, and the market can help in the future.
	Self-reliant residents	Self-reliant residents are essential for setting up initiatives in the commons.
	Contribution to the neighborhood	Si/dM wants to contribute to the area, and for Havensteder it provides added societal value.
	Working with other housing corporations	Working with other corporations could lead to more properties and make Si/dM less dependent.
	Novel ideas Si/dM	Havensteder is inspired by the ideas of Si/dM.
	Feasible business case	Creating a feasible business case can support Si/dM.

VALIDATION EMAIL HOUSING CORPORATION EMPLOYEES (DUTCH)

Beste [interviewee],

Eerder dit jaar heb ik u geïnterviewd voor mijn master thesis onderzoek over Stad in de Maak. Opnieuw bedankt voor uw tijd, uw bijdrage heeft een hele hoop toegevoegd aan mijn onderzoek! Ik heb de interviewresultaten geanalyseerd en vroeg me af of u tijd zou hebben om de interviewresultaten te bekijken, en onderstaande vraag te beantwoorden. Het kost ongeveer 10 minuten en zou mij heel erg helpen!

Ik heb een PDF bijgevoegd met de bevindingen over de organisatie van Stad in de Maak, bestaande uit twee tabellen, en barrières en aanjagers. De resultaten zijn in het Engels, ik hoop dat dit geen probleem is, en anders hoor ik het graag.

Zelforganisatie
1. Komen de barrières (barriers) en aanjagers (enablers) van de zelforganisatie van Stad in de Maak overeen met uw perceptie van wat barrières en aanjagers van Stad in de Maak zijn?

Ik hoor graag of het mogelijk zou zijn voor u om naar de resultaten te kijken. Ik ben voornemens de antwoorden te verwerken over één week vanaf nu.

Het zou me heel erg helpen als u naar de resultaten zou kunnen kijken! Alvast bedankt.

Met vriendelijke groet,
Nina van Wijk
Student MSc Management in the Built Environment & MSc Science Communication, TU Delft

STAD IN DE MAAK INTERVIEWS - FINDINGS

FINDINGS SELF-ORGANIZATION

Barriers	Complex communication	There is limited communication between Si/dM buildings and finding a common language is hard.
	Setting up rules for sharing	Developing rules for sharing is complex.
	Differing motivations	Motivations to be part of Si/dM differ between residents and co-founders, and among residents.
	Decision-making	Collective decision-making about Si/dM is informal and ad hoc.
	Dependence institutions	Si/dM is dependent of Havensteder for having property.
	Finances	Si/dM is not financially feasible without borrowing Havensteders' property.
	Image Stad in de Maak	The image of Si/dM may hamper connections with other parties.

Enablers	Political situation	The political climate influences policies and thus Si/dM.
	Knowledge sharing	Knowledge sharing among residents or with other cohousing initiatives can help.
	Joining forces	Residents can join forces to buy a building together, or Si/dM can join forces with the VrijCoop syndicate.
	Market situation	Si/dM is a result of the crisis, and the market can help in the future.
	Self-reliant residents	Self-reliant residents are essential for setting up initiatives in the commons.
	Contribution to the neighborhood	Si/dM wants to contribute to the area, and for Havensteder it provides added societal value.
	Working with other housing corporations	Working with other corporations could lead to more properties and make Si/dM less dependent.
	Novel ideas Si/dM	Havensteder is inspired by the ideas of Si/dM.
	Feasible business case	Creating a feasible business case can support Si/dM.

B1 CONDITIONS SELF-ORGANIZATION

OPERATIONALIZATION CONDITIONS FOR SELF-ORGANIZATION

CONDITION	DEFINITION	VARIABLES
(a common) Intrinsic motivation	People find themselves through a common idea/initiative/ideal or interest. There are shared goals amongst people within the group. (Huygen et al., 2012, p. 13)	1. Free choice of being part of the activity 2. Interest, enjoyment (Ryan & Deci, 2000)
Mutual trust within and beyond the organization	People involved trust each other and the people they cooperate with. (Huygen et al., 2012, p. 35)	3. Trust within the group 4. Trust in people beyond the organization (Huygen et al., 2012, p. 35)
Rules for collective use and decision-making	The group has simple rules for collective use and for decision-making. (Brandsen & Helderman, 2012)	5. Rules for collective use 6. Rules for decision-making (Brandsen & Helderman, 2012)
Definition of boundaries of the initiative	Those involved understand the mission of the organization, to avoid unwanted developments. (Brandsen & Helderman, 2012; Huygen et al., 2012, p. 34)	7. Collective understanding of the goal of the initiative (Brandsen & Helderman, 2012; Huygen et al., 2012, p. 34)
Room for initiatives	Initiatives of those involved can grow, thus supporting the self-organization. (Huygen et al., 2012, p. 34)	8. Available space 9. Like-minded people (Huygen et al., 2012, p. 33-34)
Financial feasibility	The organization is in a financially feasible position, ensuring the continuation of the project. (Brandsen & Helderman, 2012; Czischke, 2018)	10. Financially feasible business case

VARIABLES CONDITIONS FOR SELF-ORGANIZATION

	VARIABLE	MEASURES	MEASUREMENT	CONFIRMATION VARIABLE IS PRESENT
1	Free choice	(a common) Intrinsic motivation	Preference of doing another activity if possible	If the respondent prefers doing another activity when given the chance, free choice is lacking.
2	Interest, enjoyment	(a common) Intrinsic motivation	Presence of interest or enjoyment	If the respondent has no interest or enjoyment from the activity (engaging in the cohousing community), intrinsic motivation is lacking.
3	Trust within the group	Mutual trust within and beyond the organization	Perceived trust in others	Presence of a feeling that others inside the group can be trusted.
4	Trust in people beyond the organization	Mutual trust within and beyond the organization	Perceived trust in others	Presence of a feeling that people and organizations outside the group can be trusted.
5	Rules for collective use	Rules for collective use and decision-making	Presence of rules for collective use	There are rules for collective use.
6	Rules for decision-making	Rules for collective use and decision-making	Presence of rules for decision-making	There are rules for decision-making.
7	Collective understanding of the goal of the initiative	Definition of boundaries of the initiative	Presence of collective understanding of the goal of the initiative	People involved present similar ideas of what the goal is of the initiative.
8	Available space	Room for initiatives	Presence of available space	There is available space for opportunities, so if people involved want to set up an initiative, this is possible.
9	Like-minded people	Room for initiatives	Presence of like-minded people	Within (or beyond) the organization there are like-minded people who might set up an initiative together.
10	Financially feasible business case	Financial feasibility	Presence of a financially feasible business case	The organization has a financially feasible business case.

B2 CONNECTION BARRIERS/ENABLERS TO SELF-ORGANIZATION

BARRIERS

VARIABLE CONDITION	(A COMMON) INTRINSIC MOTIVATION		MUTUAL TRUST WITHIN AND BEYOND THE ORGANIZATION		RULES FOR COLLECTIVE USE AND DECISION-MAKING		DEFINITION OF BOUNDARIES OF THE INITIATIVE	ROOM FOR INITIATIVES		FINANCIAL FEASIBILITY	TOTAL BARRIER	NUMBER OF CONDITIONS
	FREE CHOICE	INTEREST/ ENJOYMENT	TRUST WITHIN GROUP	TRUST BEYOND GROUP	RULES COLLECTIVE USE	RULES DECISION-MAKING	COLLECTIVE UNDERSTANDING	AVAILABLE SPACE	LIKE-MINDED PEOPLE	FEASIBLE BUSINESS CASE		
Differing motivations	1	1					2		2		6	3
Complex communication			1	1	2		2		2		8	4
Dependence institutional environment	1			2				2			5	3
Setting up rules for sharing		1	1		3		1				6	4
Lack of rules for decision-making		1			2	1					4	2
Finances	1			1				4		2	8	4
Image Stad in de Maak				1							1	1
TOTAL VARIABLE	3	3	2	5	7	1	5	6	4	2		
TOTAL CONDITION	6		7		8		5	10		2		
NUMBER OF BARRIERS	5		5		3		3	4		1		

ENABLERS

VARIABLE CONDITION	(A COMMON) INTRINSIC MOTIVATION		MUTUAL TRUST WITHIN AND BEYOND THE ORGANIZATION		RULES FOR COLLECTIVE USE AND DECISION-MAKING		DEFINITION OF BOUNDARIES OF THE INITIATIVE	ROOM FOR INITIATIVES		FINANCIAL FEASIBILITY	TOTAL ENABLER	NUMBER OF CONDITIONS
	FREE CHOICE	INTEREST/ ENJOYMENT	TRUST WITHIN GROUP	TRUST BEYOND GROUP	RULES COLLECTIVE USE	RULES DECISION-MAKING	COLLECTIVE UNDERSTANDING	AVAILABLE SPACE	LIKE-MINDED PEOPLE	FEASIBLE BUSINESS CASE		
Market situation								5			5	1
Political situation								1			1	1
Joining forces	1									3	4	2
Knowledge sharing			1				1		2	1	5	4
Self-reliant residents					1	1					2	1
Contribution to the neighborhood		1		3			1			1	6	4
Having novel ideas		2		1							3	2
Working with other housing corporations	1							2			3	2
Building a feasible business case				1						2	3	2
TOTAL VARIABLE	2	3	1	5	1	1	2	8	2	7		
TOTAL CONDITION	5		6		2		2	10		7		
NUMBER OF ENABLERS	4		4		1		2	4		4		

CHARACTERISTICS SHARING ECONOMY

CONDITION / VARIABLE CONDITION	(A COMMON) INTRINSIC MOTIVATION		MUTUAL TRUST WITHIN AND BEYOND THE ORGANIZATION		RULES FOR COLLECTIVE USE AND DECISION-MAKING		DEFINITION OF BOUNDARIES OF THE INITIATIVE	ROOM FOR INITIATIVES		FINANCIAL FEASIBILITY	TOTAL CHARACTERISTIC	NUMBER OF CONDITIONS
	FREE CHOICE	INTEREST/ ENJOYMENT	TRUST WITHIN GROUP	TRUST BEYOND GROUP	RULES COLLECTIVE USE	RULES DECISION-MAKING	COLLECTIVE UNDERSTANDING	AVAILABLE SPACE	LIKE-MINDED PEOPLE	FEASIBLE BUSINESS CASE		
Use of idle assets								3	1	1	5	2
Consumer-to-consumer interaction		2	1		1		2		1		7	5
Access rather than ownership			1	1				2	1		5	2
TOTAL VARIABLE	0	2	2	1	1	0	2	5	3	1		
TOTAL CONDITION	2		3		1		2	8		1		
NUMBER OF CHARACTERISTICS	1		2		1		1	3		1		

ADVANTAGES SHARING ECONOMY

CONDITION / VARIABLE CONDITION	(A COMMON) INTRINSIC MOTIVATION		MUTUAL TRUST WITHIN AND BEYOND THE ORGANIZATION		RULES FOR COLLECTIVE USE AND DECISION-MAKING		DEFINITION OF BOUNDARIES OF THE INITIATIVE	ROOM FOR INITIATIVES		FINANCIAL FEASIBILITY	TOTAL ADVANTAGE	NUMBER OF CONDITIONS
	FREE CHOICE	INTEREST/ ENJOYMENT	TRUST WITHIN GROUP	TRUST BEYOND GROUP	RULES COLLECTIVE USE	RULES DECISION-MAKING	COLLECTIVE UNDERSTANDING	AVAILABLE SPACE	LIKE-MINDED PEOPLE	FEASIBLE BUSINESS CASE		
Saving time & money								2		2	4	2
Having a strong community & network		2					2		2		6	3
TOTAL VARIABLE	0	2	0	0	0	0	2	2	2	2		
TOTAL CONDITION	2		0		0		2	4		2		
NUMBER OF ADVANTAGES	1		0		0		1	2		1		

DISADVANTAGES SHARING ECONOMY

CONDITION	(A COMMON) INTRINSIC MOTIVATION		MUTUAL TRUST WITHIN AND BEYOND THE ORGANIZATION		RULES FOR COLLECTIVE USE AND DECISION-MAKING		DEFINITION OF BOUNDARIES OF THE INITIATIVE	ROOM FOR INITIATIVES		FINANCIAL FEASIBILITY	TOTAL DISADVANTAGE	NUMBER OF CONDITIONS
VARIABLE CONDITION	FREE CHOICE	INTEREST/ ENJOYMENT	TRUST WITHIN GROUP	TRUST BEYOND GROUP	RULES COLLECTIVE USE	RULES DECISION-MAKING	COLLECTIVE UNDERSTANDING	AVAILABLE SPACE	LIKE-MINDED PEOPLE	FEASIBLE BUSINESS CASE		
Intense relationships		2			1						3	2
Complex communication			1	1	2		2		2		8	4
Lack of usage empty spaces		1					1				2	2
TOTAL VARIABLE	0	3	1	1	3	0	3	0	2	0		
TOTAL CONDITION	3		2		3		3	2		0		
NUMBER OF DISADVANTAGES	2		1		2		2	1		0		

B4 CONNECTION SHARING ECONOMY TO SOCIAL CAPITAL

CHARACTERISTICS SHARING ECONOMY

FORM OF SOCIAL CAPITAL → VARIABLE SOCIAL CAPITAL	BONDING COMMUNICATION	BONDING ASSOCIATION	BONDING TRUST	BONDING (co-founders) COMMUNICATION	BONDING (co-founders) ASSOCIATION	BONDING (co-founders) TRUST	BRIDGING COMMUNICATION	BRIDGING ASSOCIATION	BRIDGING TRUST	LINKING COMMUNICATION	LINKING ASSOCIATION	LINKING TRUST	TOTAL CHARACTERISTIC	TOTAL CAPITAL
Use of idle assets	2	1								2			5	2
Consumer-to-consumer interaction	1	2	1	1					1				6	3
Access rather than ownership	2						2						4	2
TOTAL VARIABLE	5	3	1	1	0	0	2	0	1	2	0	0		
TOTAL CONDITION		9			1			3			2			
NUMBER OF CHARACTERISTICS		3			1			2			1			

ADVANTAGES SHARING ECONOMY

FORM OF SOCIAL CAPITAL → VARIABLE SOCIAL CAPITAL	BONDING COMMUNICATION	BONDING ASSOCIATION	BONDING TRUST	BONDING (co-founders) COMMUNICATION	BONDING (co-founders) ASSOCIATION	BONDING (co-founders) TRUST	BRIDGING COMMUNICATION	BRIDGING ASSOCIATION	BRIDGING TRUST	LINKING COMMUNICATION	LINKING ASSOCIATION	LINKING TRUST	TOTAL ADVANTAGE	TOTAL CAPITAL
Saving time & money													0	0
Having a strong community & network	1	2											3	1
TOTAL VARIABLE	1	2	0	0	0	0	0	0	0	0	0	0		
TOTAL CONDITION		3			0			0			0			
NUMBER OF ADVANTAGES		1			0			0			0			

DISADVANTAGES SHARING ECONOMY

FORM OF SOCIAL CAPITAL → VARIABLE SOCIAL CAPITAL	BONDING COMMUNICATION	BONDING ASSOCIATION	BONDING TRUST	BONDING (co-founders) COMMUNICATION	BONDING (co-founders) ASSOCIATION	BONDING (co-founders) TRUST	BRIDGING COMMUNICATION	BRIDGING ASSOCIATION	BRIDGING TRUST	LINKING COMMUNICATION	LINKING ASSOCIATION	LINKING TRUST	TOTAL DISADVANTAGE	TOTAL CAPITAL
Intense relationships	1												1	1
Complex communication	3	1	1						1				6	2
Lack of usage empty spaces													0	0
TOTAL VARIABLE	4	1	1	0	0	0	0	0	1	0	0	0		
TOTAL CONDITION		6			0				1		0			
NUMBER OF DISADVANTAGES		2			0				1		0			

Consent Form for thesis project Nina van Wijk

Please tick the appropriate boxes	Yes	No
Taking part in the study		
I have read and understood the study information dated 8/7/2019, or it has been read to me. I have been able to ask questions about the study and my questions have been answered to my satisfaction.	O	O
I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason.	O	O
I understand that taking part in the study involves a creative session (with photographs and written notes).	O	O
Use of the information in the study		
I understand that information I provide will be used for the thesis project carried out by Nina van Wijk, MSc-student at the Delft University of Technology.	O	O
I understand that personal information collected about me that can identify me, such as my name or where I live, will not be shared beyond the study team.	O	O
I agree that my information can be quoted anonymously in research outputs.	O	O
I agree that photographs can be used in the written thesis.	O	O
Future use and reuse of the information by others		
I give permission for the photographs and notes of the creative session to be archived in the researchers' personal database so it can be used for future research and learning.	O	O

Signatures

_____   _____ _____
Name of participant   Signature   Date

I have accurately read out the information sheet to the potential participant and, to the best of my ability, ensured that the participant understands to what they are freely consenting.

_____   _____ _____
Name of researcher   Signature   Date

Study contact details for further information: Nina van Wijk, +31636188642, ninavanwijk@gmail.com

Information sheet thesis project Nina van Wijk

Date: 8/7/2019
Researcher name and contact details: Nina van Wijk, +31636188642, ninavanwijk@gmail.com
Representatives researcher: Dr Darinka Czischke Ljubetic, d.k.czischke@tudelft.nl, Dr Maarten van der Sanden, m.c.a.vandersanden@tudelft.nl
Institution: Delft University of Technology, MSc Management in the Built Environment (Faculty of Architecture and the Built Environment), MSc Science Communication (Faculty of Applied Sciences)

1 Research details and purpose

The case study Stad in de Maak is part of the integrated master thesis of Nina van Wijk, student of two MSc-programs at the Delft University of Technology. The research consists of a round of interviews, followed by a creative session. The research starts in April 2019, and will conclude with the presentation of the written thesis in front of an audience, at the Delft University of Technology, in November 2019. The written thesis will be publicly available on the online repository of the Delft University of Technology.

The purpose of the research is to connect the concept of sharing economy to cohousing initiatives, and whether sharing economy can support self-organization of cohousing initiatives. Furthermore, the research aims to provide a tangible advice or tool for the participating cohousing community.

2 Benefits and risks of participating

The to-be-developed advice or tool will be beneficial for the participant, as the goal is to benefit the development of the Stad in de Maak community. The risk of participating is possible leakage of personal data (section 4). This risk is minimized by anonymizing all data which will be shared with the study team, or referred to in the written thesis. Furthermore, personal data will only be stored on the private, protected, offline hard drive of the researcher, and not in any cloud or online service.

3 Procedure for withdrawal from the study

At any given moment the participant can withdraw from the study, by sending a written notice to the email address of the researcher. A reason for withdrawal is not required.

4 Collection of personal information from the participant

The amount of personal information from the participant that will be collected is limited to the participants' name and address, when residing in a Stad in de Maak building. The personal information will be stored on the private, protected, offline hard drive of the researcher, and not in any cloud or online service. The personal data will be collected for research purposes only. Names will be anonymized in all documents that are available to anyone other than the researcher herself. Rectifications of, access to or erasure of personal data are available by sending a written request to the researchers' email address. Names will be anonymized in all research data on the offline hard drive after finishing the project.

5 Data usage and dissemination

Data from the creative session will be collected in two ways: photographs and written notes. This data will be stored on the private, protected, offline hard drive of the researcher, and not in any cloud or online service. The anonymized data will be stored on the hard drive of the researcher for 10 years, which is in line with the Dutch Code of Conduct for Academic Practice.

Photographs may be included in the written thesis of the researcher, but names will not be mentioned. Written notes will not be disseminated and are only available to the researcher herself. Data will be shared within the study team (i.e. with representatives and mentors of the researcher). The data will not be used for any commercial purposes.

Research data will be used for the written thesis and for developing a specific advice or tool. In the written thesis, anonymized quotes of participants may be used.

C2 PHOTOGRAPHS CREATIVE SESSION

All photographs in this appendix were taken either by the author of this thesis, or by creative session participants with the camera of the author.


Description photographs
1. Working on ideas for the 'Dream' scenario.
2. Working on ideas for the 'Nightmare' scenario.
3. Making clusters of all the ideas.
4. Purging first ideas.
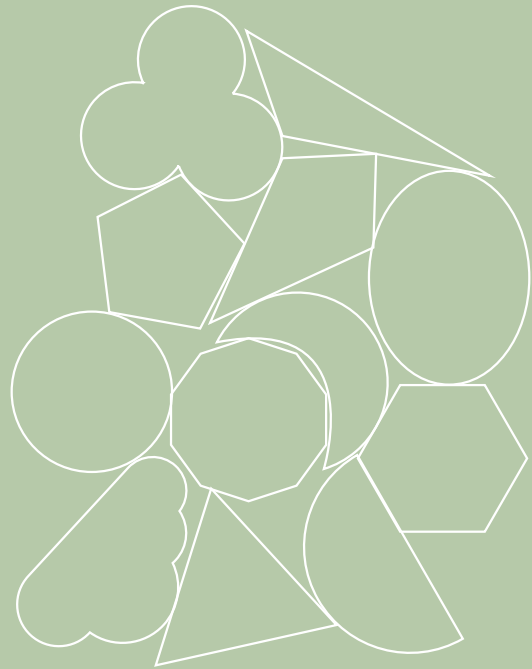5. Setting up the Problem as Perceived.
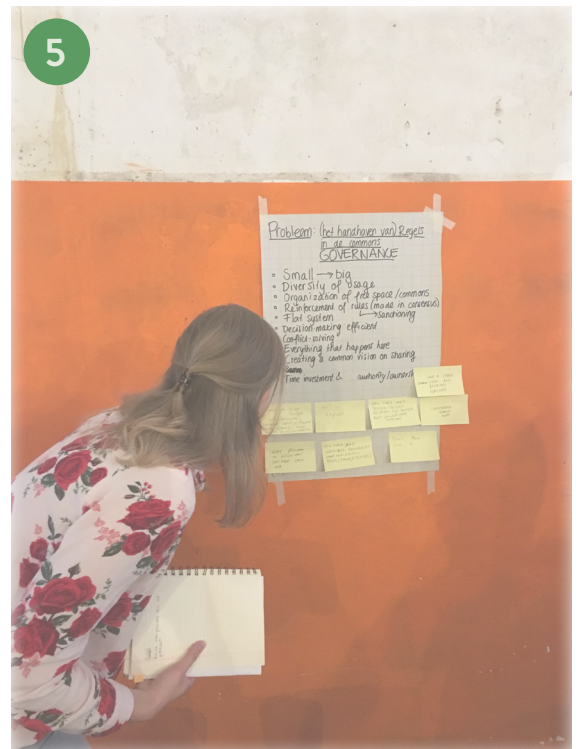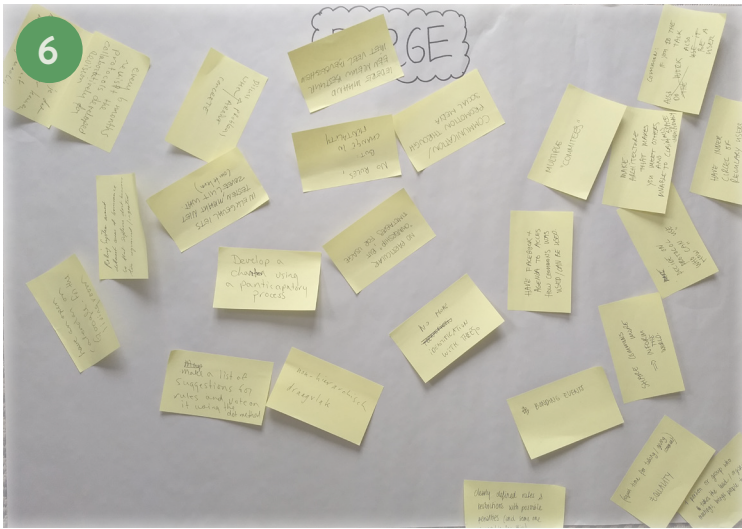
Description photographs
6. Ideas of the purging stage.
7. Clusters.
8. Eco governance concept.
9. Drawings of the participants after the warm-up.
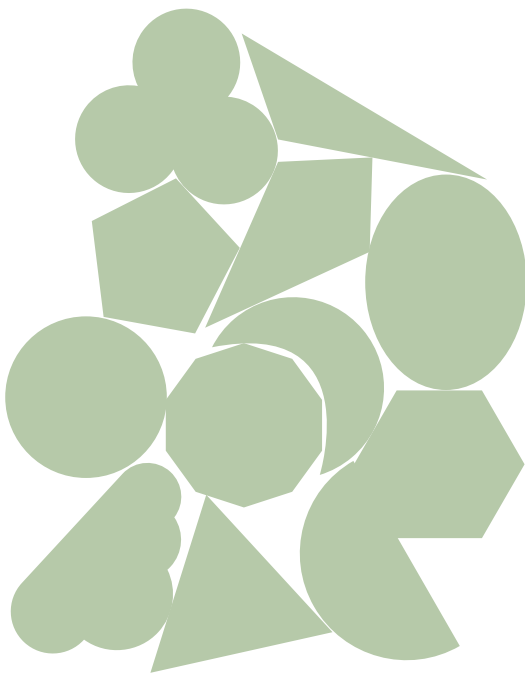10. God in a machine concept.
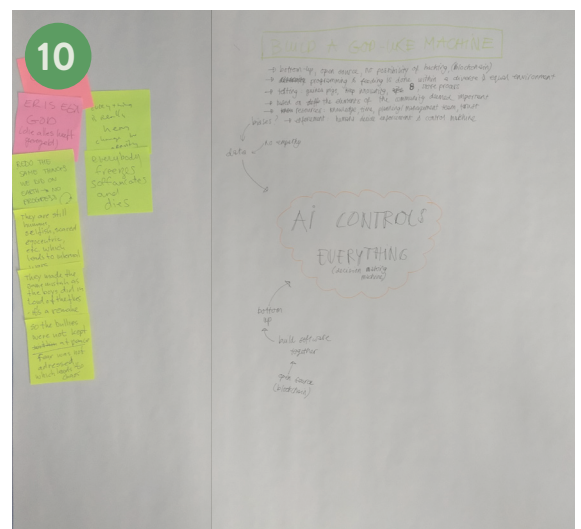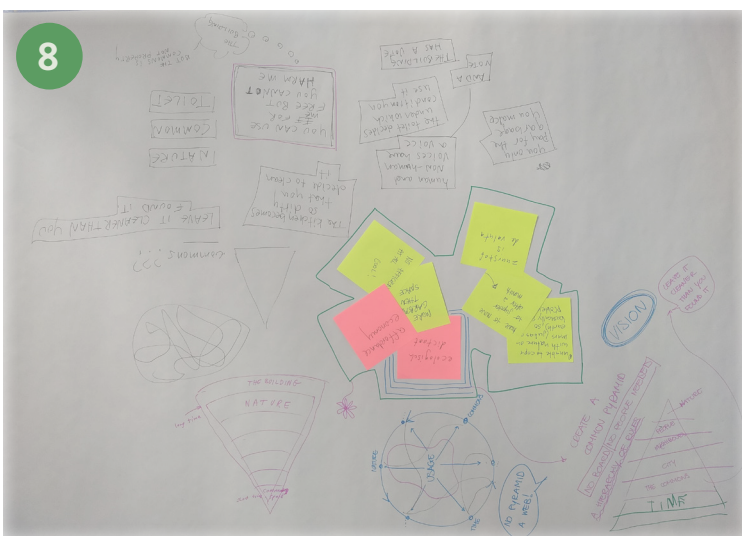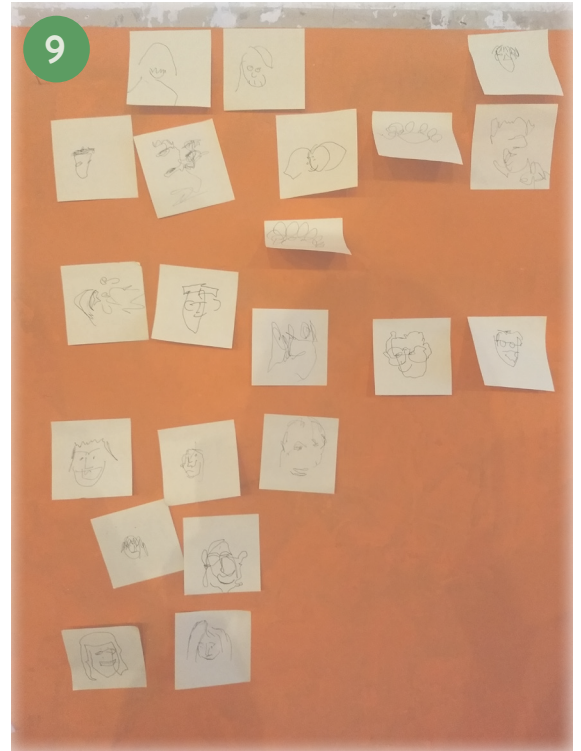
(IM)PERFECTION PUZZLE

A COMMUNICATION TOOL FOR
UNDERSTANDING & ACCEPTING (IM)PERFECTION
USER MANUAL

🕐 30-45'   👤 2-12

TOOL DEVELOPED BY NINA VAN WIJK

MANUAL

DESCRIPTION
Living with roommates can be challenging. Everyone has other ideas, lifestyles, goals and priorities. Organizing initiatives might be challenging. If you're ever in need, this tool is here for you to help start the conversation!

REQUIREMENTS
- One phone with timer
- Conversation topic

INSTRUCTIONS
1. Set the timer for 1 minute.
2. In 1 minute, all participants select one object from all objects which best describes their idea/opinion.
   Ready, set, go!
3. Set the timer for 30 seconds.
4. All participants get 30 seconds individually to explain why (s)he picked that object.
   Finished your explanation? Place the object on the table, and - unless you're the first to do so - attach it to the objects already lying there. Explain what is different or similar to the ideas or opinions of the other participants.
   Ready, set, go!
5. When everyone finished, reflect on the puzzle as a group.

D2 REFLECTION QUESTIONS TOOL TEST

(IM)PERFECTION PUZZLE - TEST - STAD IN DE MAAK

Name: _____

1. What did you think about the final result (i.e. the puzzle)?

2. Do you think using this tool will help improve the sharing economy of Stad in de Maak? Why/Why not?

3. Did using the tool give insight into the ideas of others regarding the conversation topic? Why/Why not?

4. Did the tool contribute to a trusting atmosphere? Why/Why not?

5. Would you use this tool to optimize discussions within Stad in de Maak? Why/Why not?

6. What drew your attention when selecting a shape?

7. Was the manual clear? If not: what changes do you suggest?

8. Are there any changes you would suggest for improving the tool?

Extra space for answers/other remarks:

Consent Form for thesis project Nina van Wijk

Please tick the appropriate boxes	Yes	No
Taking part in the study		
I have read and understood the study information dated 6/9/2019, or it has been read to me. I have been able to ask questions about the study and my questions have been answered to my satisfaction.	○	○
I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason.	○	○
I understand that taking part in the study involves a communication tool test session (with photographs, audio recording, written notes and written answers to questions).	○	○
Use of the information in the study		
I understand that information I provide will be used for the thesis project carried out by Nina van Wijk, MSc-student at the Delft University of Technology.	○	○
I understand that personal information collected about me that can identify me, such as my name or where I live, will not be shared beyond the study team.	○	○
I agree that my information can be quoted anonymously in research outputs.	○	○
I agree that photographs can be used in the written thesis.	○	○
Future use and reuse of the information by others		
I give permission for the photographs and notes of the creative session to be archived in the researchers' personal database so it can be used for future research and learning.	○	○

Signatures

_____   _____ _____
Name of participant   Signature   Date

I have accurately read out the information sheet to the potential participant and, to the best of my ability, ensured that the participant understands to what they are freely consenting.

_____   _____ _____
Name of researcher   Signature   Date

Study contact details for further information: Nina van Wijk, +31636188642, ninavanwijk@gmail.com

Information sheet thesis project Nina van Wijk

Date: 6/9/2019
Researcher name and contact details: Nina van Wijk, +31636188642, ninavanwijk@gmail.com
Representatives researcher: Dr Darinka Czischke Ljubetic, d.k.czischke@tudelft.nl, Dr Maarten van der Sanden, m.c.a.vandersanden@tudelft.nl
Institution: Delft University of Technology, MSc Management in the Built Environment (Faculty of Architecture and the Built Environment), MSc Science Communication (Faculty of Applied Sciences)

1 Research details and purpose

The case study Stad in de Maak is part of the integrated master thesis of Nina van Wijk, student of two MSc-programs at the Delft University of Technology. The research consists of a round of interviews, followed by a creative session and communication tool test. The research starts in April 2019, and will conclude with the presentation of the written thesis in front of an audience, at the Delft University of Technology, in November 2019. The written thesis will be publicly available on the online repository of the Delft University of Technology.

The purpose of the research is to connect the concept of sharing economy to cohousing initiatives, and whether sharing economy can support self-organization of cohousing initiatives. Furthermore, the research aims to provide a tangible tool for the participating cohousing community.

2 Benefits and risks of participating

The to-be-developed tool will be beneficial for the participant, as the goal is to benefit the development of the Stad in de Maak community. The risk of participating is possible leakage of personal data (section 4). This risk is minimized by anonymizing all data which will be shared with the study team, or referred to in the written thesis. Furthermore, personal data will only be stored on the private, protected, offline hard drive of the researcher, and not in any cloud or online service.

3 Procedure for withdrawal from the study

At any given moment the participant can withdraw from the study, by sending a written notice to the email address of the researcher. A reason for withdrawal is not required.

4 Collection of personal information from the participant

The amount of personal information from the participant that will be collected is limited to the participants' name and address, when residing in a Stad in de Maak building. The personal information will be stored on the private, protected, offline hard drive of the researcher, and not in any cloud or online service. The personal data will be collected for research purposes only. Names will be anonymized in all documents that are available to anyone other than the researcher herself. Rectifications of, access to or erasure of personal data are available by sending a written request to the researchers' email address. Names will be anonymized in all research data on the offline hard drive after finishing the project.

5 Data usage and dissemination

Data from the tool test session will be collected in four ways: photographs, written notes, an audio recording and written answers to reflection questions. This data will be stored on the private, protected, offline hard drive of the researcher, and not in any cloud or online service. The anonymized data will be stored on the hard drive of the researcher for 10 years, which is in line with the Dutch Code of Conduct for Academic Practice.
Photographs may be included in the written thesis of the researcher, but names will not be mentioned. Written notes will not be disseminated and are only available to the researcher herself. Data will be shared within the study team (i.e. with representatives and mentors of the researcher). The data will not be used for any commercial purposes.
Research data will be used for the written thesis and for adjusting the communication tool. In the written thesis, anonymized quotes of participants may be used.

D4 PHOTOGRAPHS TOOL TEST

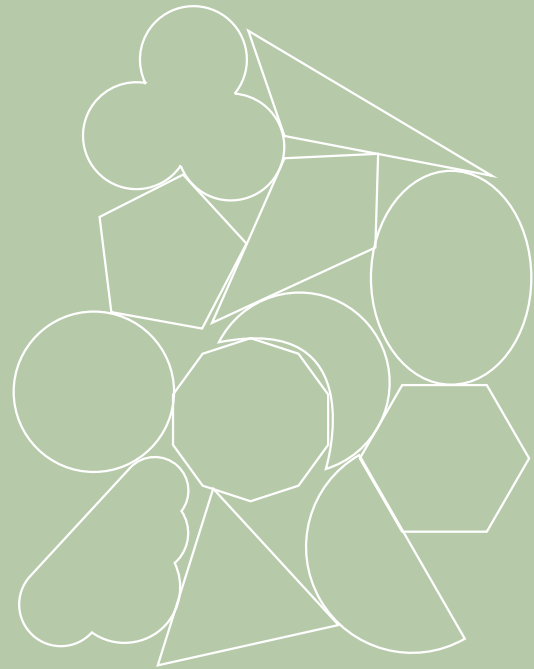All photographs in this appendix were taken by the author of this thesis.

Description photographs
1. Participants discussing the shape of the puzzle.
2. Participants reading the manual.
3. Participants discussing the shape of the puzzle.

D5 ADJUSTED USER MANUAL TOOL

(IM)PERFECTION PUZZLE

A COMMUNICATION TOOL FOR
UNDERSTANDING & ACCEPTING (IM)PERFECTION
USER MANUAL

🕐 30-45'   👤 2-12

TOOL DEVELOPED BY NINA VAN WIJK

MANUAL

DESCRIPTION
Living with roommates can be challenging. Everyone has other ideas, lifestyles, goals and priorities. Organizing initiatives or making rules might be a struggle. This tool supports sharing your ideas and opinions and finding common ground.

REQUIREMENTS
- Conversation topic: the topic/problem you want to focus on
- One (phone with) timer
- Pen & post-it's

INSTRUCTIONS
1. Set the timer for 1 minute.
2. In 1 minute, all participants select one object from all objects which best describes their idea/opinion.
3. Set the timer for 30 seconds.
4. All participants get 30 seconds individually to explain why (s)he picked that object. Finished your explanation?
   Write one key word on a post-it and stick it to the object. Place the object on the table, and attach it to the other objects. Explain what is different or similar to the ideas or opinions of the other participants.
5. A puzzle has formed on the table. Reflect on this puzzle by discussing the following questions:
   - How could you reshuffle the puzzle to show the differences and similarities between everyone's ideas?
   - What did you learn about other participants?
   - Can the ideas of everyone be combined into one idea?
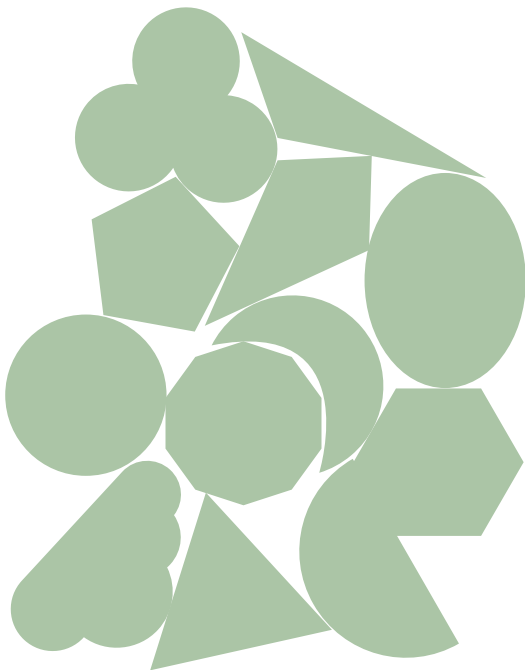
WHAT'S MINE IS OURS

Optimizing sharing economies in cohousing initiatives to improve self-organization
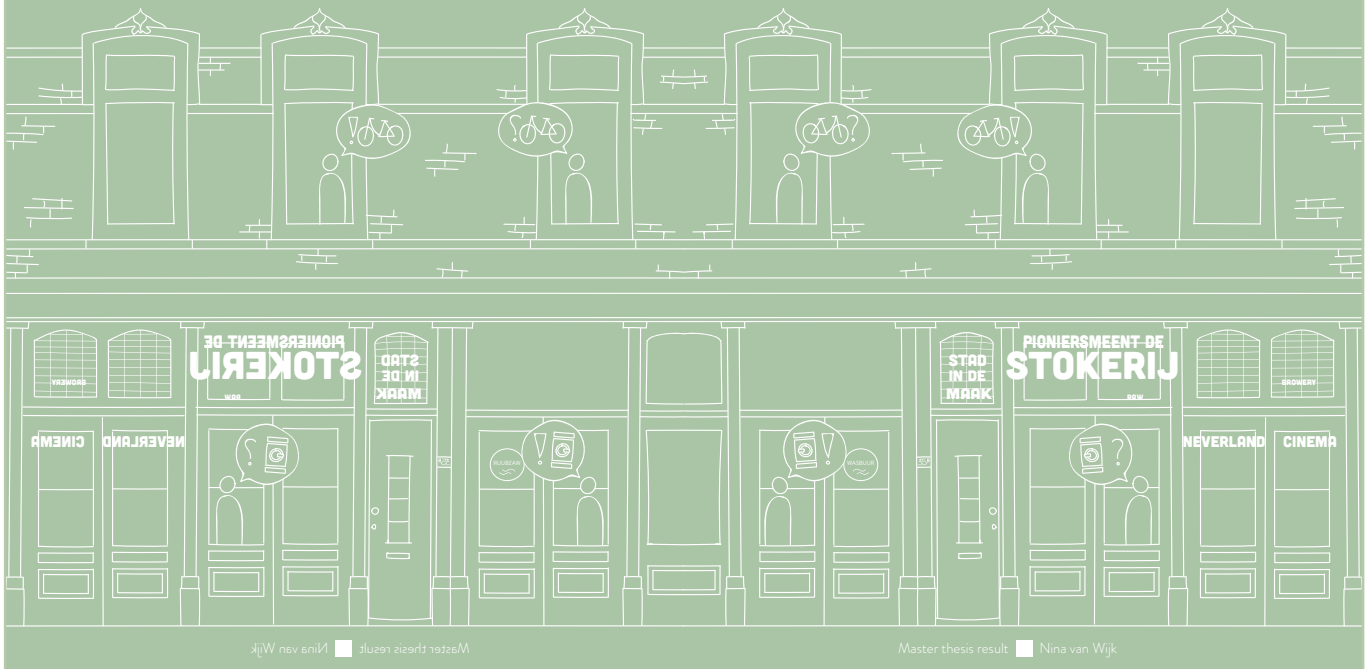
INTRODUCTION

A year ago I started researching cohousing initiatives, as a response to the decreasing affordability of Dutch housing, especially in the larger cities. I wanted to look into sharing economies of cohousing initiatives, to see if these provide opportunities for growth and can help cohousing initiatives to flourish.

I approached you - Stad in de Maak - as a case study and luckily you were happy to contribute. Throughout my research I was involved with Stad in de Maak at several steps. I carried out interviews with residents, co-founders and employees of Havensteder. Furthermore, after I analyzed the interview results, I organized a creative session at the Pieter de Raadtstraat. This is a method for finding solutions as a group by looking outside the box. At the creative session, residents, co-founders and external interested designers joined. It was a fun evening with lots of great ideas. After this creative session, I used the input to design a communication tool. I returned to the Pieter de Raadtstraat to test this tool.

This small booklet provides a summary of the most important findings. You can use this information to start improving, optimizing and finetuning Stad in de Maak, or use it for other cohousing initiatives.
If you are interested in my work, you can find the entire thesis report on this website: *repository.tudelft.nl > Education repository > search for: Nina van Wijk*

I hope you will enjoy reading this booklet as much as I enjoyed researching your living environment!

Nina van Wijk, October 2019

CONTENT BOOKLET

COMMUNICATION TOOL

The '(Im)Perfection Puzzle' is a communication tool with several purposes. It helps to:
1. Gather opinions
2. Express ideas in an easy way
3. Realize there is no perfect solution possible when facing a problem
4. Facilitate streamlined communication and avoid repetition
5. Support building trust among residents
6. Support getting to know each other's ideas

The tool consists of a box filled with 12 geometrical shapes, made of wood, in the color green. The following process takes place:
1. Residents gather for the session, and set up a clear goal of the session. For example: come up with solutions regarding setting up and reinforcing rules for the commons.
2. In one minute, all participating residents select one shape from the box which best describes the idea/opinion they have regarding the chosen subject.
3. All participants get 30 seconds to explain why they chose the shape by elaborating on what their idea/opinion is. When they are finished with their explanation, they place the shape on the table. Unless they are the first to do so, they have to attach their shape to the already present shapes. In doing so, they have to explain what, in their idea/opinion, is different or similar to the ideas of the other participants.
4. This process is repeated until everyone has put their shape on the table. Then, the group reflects on the imperfect puzzle that has begun to form on the table.

The tool comes with a manual which helps to streamline the process.


2

7

RECOMMENDATIONS

By using the interview findings, it has been analyzed if and how Stad in de Maak's sharing economy could help the organization of Stad in de Maak to flourish. Luckily, there seems to be a positive connection between the sharing that takes place at Stad in de Maak, and its self-organization. To give an example: sharing at Stad in de Maak requires people to communicate with each other. This helps to build trust and set up rules, among other things.

However, as mentioned on the previous page, Stad in de Maak's sharing economy faces challenges: intense relationships, complex communication and the lack of usage of empty spaces. This impacts the positive relationship the sharing economy could have on its organization, as is visualized below.

The communication tool, which will be explained on the next page, offers one solution. Other recommendations could be:

· discussing communication among Stad in de Maak as a group (e.g. with the tool)
· work towards using the empty spaces more
· analyze the barriers and enablers of Stad in de Maak's self-organization: is there any potential there for improvements

CURRENT SITUATION

GOAL COMMUNICATION TOOL
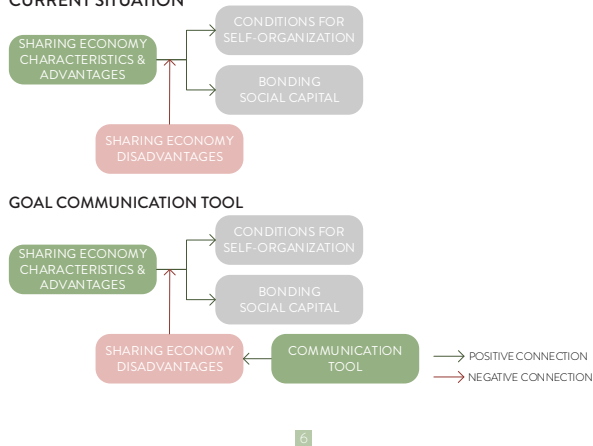
6

EXPLANATION CONCEPTS

WHAT IS SHARING ECONOMY?
In my research, I focused on the concept "sharing economy". This term has been used increasingly in media outlets, but what exactly does it mean?
Sharing economies revolve around using goods that are not used otherwise, by sharing these or consuming these goods together. Modern information and communication technologies have made sharing in this way more easy.
To give a fictitious example: Anne has a bike which she only uses on Mondays. Her friend Jacob wants to use a bike on Tuesdays, but he does not have the money to buy a bike. Anne allows Jacob to use the bike, and he might give something in return as well, though this is not necessary. In the end, the bike's use is optimized, Jacob saves money and Anne might also have added benefit. Furthermore, the sharing gives Anne and Jacob the opportunity to bond and their relationship grows.
This is just one of many examples one could think of. Maybe Anne decides to put her bike online on a goods-sharing platform, or maybe Anne and Jacob decide to buy a bike together. The bottom line is that this type of sharing can be driven by economic, social and environmental sustainability.
These drivers are very similar to cohousing, which is why I decided to connect the two.

WHAT IS SELF-ORGANIZATION?
Next to studying sharing economy, self-organization was studied. This component of cohousing initiatives is hampered by all sorts of outside barriers. I was curious how sharing economy can help improve self-organization. However, what exactly does self-organization mean?
I used the following definition: *Initiatives that emerge spontaneously in civil society from autonomous community-based networks of citizens, who are part of the urban system but independent of government procedures, and that are created around a common intrinsic motivation.*
However, that is quite a mouthful, so let's see if we can simplify it. For a project to be self-organized, it needs to have the following characteristics:

· the people involved have a (common) intrinsic motivation to join the project
· there is no hierarchy within the project
· the project is autonomous; it can stand on its own
· the project arose spontaneously and within it creative developments happen

3

FINDINGS SHARING ECONOMY

Stad in de Maak can be described as a sharing economy. Residents share common spaces, which is facilitated through frequent (face-to-face) contact. The common spaces stand idle without sharing. Online tools are rarely used, apart from WhatsApp as communication medium.

What are the advantages and disadvantages of sharing at Stad in de Maak?

Advantages	Saving time and money	By sharing, you can save time and money.
	Having a strong community & network	The sharing taking place within Si/dM leads to a strong community and network.
Disadvantages	Intense relationships	Daily sharing of living spaces can intensify the relationships with those your share the spaces with.
	Complex communication	Residents have other wishes and backgrounds, which makes communication complex.
	Lack of usage of empty spaces	The empty common spaces are not necessarily used.

4

FINDINGS SELF-ORGANIZATION

To improve the level of self-organization Stad in de Maak, several aspects need to be worked on. Not all residents live there out of free choice, some have no alternative. Also, there is a dichotomy between residents and co-founders, creating a hierarchy. Thirdly, Stad in de Maak is dependent of housing corporation Havensteder, hampering their autonomy.

What are the barriers and enablers of Stad in de Maak's self-organization?

Barriers	Complex communication	There is limited communication between Si/dM buildings and finding a common language is hard.
	Setting up rules for sharing	Developing rules for sharing is complex.
	Differing motivations	Motivations to be part of Si/dM differ between residents and co-founders, and among residents.
	Decision-making	Collective decision-making at Si/dM is informal & ad hoc.
	Dependence institutions	Si/dM is dependent of Havensteder for having property.
	Finances	Si/dM is not financially feasible without borrowing property.
	Image Stad in de Maak	Si/dM's image may hamper relationships with other parties.
Enablers	Political situation	The political climate influences policies and thus Si/dM.
	Knowledge sharing	Knowledge sharing among residents or with other cohousing initiatives can help.
	Joining forces	Residents can join forces to buy a building together, or Si/dM can join forces with the VrijCoop syndicate.
	Market situation	Si/dM is a result of the crisis, and the market can help in the future.
	Self-reliant residents	Self-reliant residents are essential for setting up initiatives in the commons.
	Contribution to the neighborhood	Si/dM wants to contribute to the area, and for Havensteder it provides added societal value.
	Working with other housing corporations	Working with other corporations could lead to more properties and make Si/dM less dependent.
	Novel ideas Si/dM	Havensteder is inspired by the ideas of Si/dM.
	Feasible business case	Creating a feasible business case can support Si/dM.

5