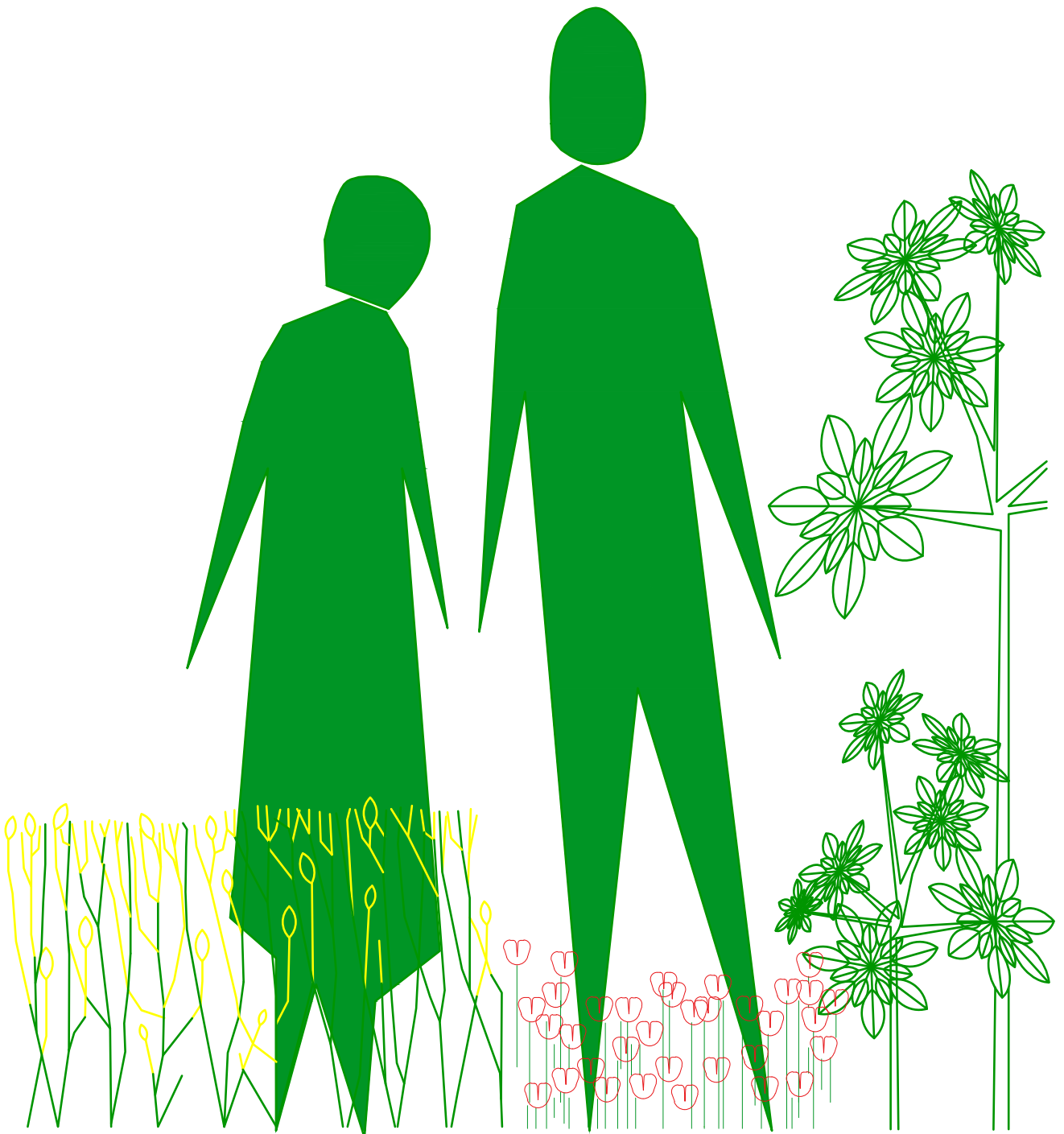# Fostering neighbourhood attachment through community gardens

A case study approach in Amsterdam

MSc Thesis Land Use Planning / Giovanni Pagano

Fostering neighbourhood attachment through community gardens

A case study approach in Amsterdam

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Abstract

Society is observing an extensive come up of "community gardens" (CGs) seeking to produce new spaces for identity, sociality and empowerment. Although, planners should be more considerate of the community's needs, especially in deprived urban areas, to avoid any additional stressors. However, little research has been undertaken on the connection of a CG and the surrounding area. Therefore, this study sought to ascertain which aspects of CGs influence the resident attachment to the neighbourhood the most. Thus, through the linking, bridging and bonding social capital framework the social relationships developed from CGs were identified. Then, by applying place attachment theories the relations between residents and such places were investigated. The research was undertaken in two CGs in Amsterdam, one with individual plots and the other with communal plots. Participants observation and semi-structured interviews were conducted in these CGs. Then, a survey was addressed to residents of the neighbourhood not involved in the CGs activities. The study concludes that, taking into account the diverse needs of different social groups, CGs that act comprehensively as a third place rather than interest-based club seem better integrated in the neighbourhood as a result of more informal interactions among neighbours beyond the garden environment.

Summary

Urban agriculture is becoming a well-known practice to alleviate problems caused by urbanization and globalization in the cities, such as loss of green areas and threaten the sense of community. For the purpose of this study, one specific form of urban agriculture has been taken into consideration: "community garden" (CG). Accordingly, society is observing an extensive surge of CGs in the urban context aiming to alter the meaning of the place. Throughout the years extensive studies conducted on CGs have noted the positive effects on participating in the gardening activities, however, few studies have investigated the connection between CGs and their surrounding area. Therefore, this study sought to find out the relationships developed from CGs and their connection with the surrounding area.

For this research a case study approach was employed. The research design comprised two CGs in the Municipality of Amsterdam. The selected CGs were managed and attended by people from the same neighbourhood and differ from each by their organisation between individual and communal plots. The CG with individual plots was BuurtMoesBinnenTuin, located in Kolenkitbuurt Noord. While, the one with communal plots was Het Eetbare Plantsoen, located in Borgerbuurt. Seeking for the social relationships developed from the CGs, participants observation and semi-structured interviews were employed with the CG members. Whereas, in order to get a better understanding of the CGs in the neighbourhoods, a survey was conducted among residents not involved in gardening activities.

Data analysis clearly showed that public institutions enable the implementation and sustainment of CGs by providing spaces in the neighbourhoods and through grants. Another common characteristic was the importance of the head gardener. In both cases, it was a well-known character in the neighbourhood that bridge the gap between CG members and public institutions and spur changes in the neighbourhood. However, results revealed that social relationships developed among gardeners are strongly related to their motivation to participate in the CG activities. Accordingly, the BuurtMoesBinnenTuin attracted people interested in cultivating their own products. In contrast, gardeners participating in Het Eetbare Plantsoen were driven by strengthening their social connection in the neighbourhood.

However, the two CGs studied seemed to fit in their neighbourhood in accordance to the residents' needs. Accordingly, Kolenkitbuurt Noord is mostly inhabited by Turkish, Syrian or Moroccan people that have a thorough knowledge in gardening and they perceive this activity as a way to be connected with their home country. Therefore, BuurtMoesBinnenTuin allowed them to grow their own fruits and vegetables. Additionally, the CG was fenced and accessible only by members with a key, therefore fitting the CG members' needs. Although, few other residents not involved in the garden were aware of its presence in the neighbourhood, also because of its location in a common area of a clustered housing setting.

Interestingly, such areas could be better used from children as a place where to safely play, which was strongly claimed by residents. On the other hand, Borgerbuurt is mostly inhabited by native Dutch, more incline to social interaction and familiarity with the neighbourhood. Therefore, a CG in which volunteers could gather to do gardening and other socio-cultural activities was in compliance with the residents' lifestyle. Additionally, being located in a public square, with a playground and other ordinary benches attracted also visitors and passers-by and create a third place in the neighbourhood for different users.

In conclusion, the two CGs fit in the neighbourhood in accordance to the residents' perception of a CG. However, Het Eetbare Plantsoen that acted comprehensively as a third place rather than BuurtMoesBinnenTuin interest-based club CG seemed to be better integrated in the neighbourhood as a result of the more informal interaction among neighbours and a better use of such place beyond the CG members only. Therefore, this study was set do to a first step to reinforce the understanding of a CG in the neighbourhood by giving a scientific background to planner or other CGs initiators for future implementation in compliance with the community's needs.

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1. Introduction

Nowadays, urban planners have to deal with two major issues in the urban development process: urbanisation and globalisation (Valente, Pasimeni, & Petrosillo, 2020). Generally, urban growth is defined as a man-made implementation in natural environment, e.g. the replacement of natural and agricultural areas with urban land cover such as buildings, roads or parking lots (Slemp et al., 2012). According to Slemp et al. (2012), urban growth brings access to a multitude of services (healthcare, shops, restaurants, bars and businesses) and increases job opportunity by strengthening the community economy. Unfortunately, it also causes the loss of green areas, impairs ecosystem functioning, and mostly threatens the sense of community ensuing in cultural change and social conflict.

In the last decade the quality of life for the residents has increasingly become an important issue in spatial planning (de Vries, Verheij, Groenewegen, & Spreeuwenberg, 2003). Accordingly, one of the main reasons is the supposedly positive effects of a high-quality living environment on health and well-being (de Vries et al., 2003). This research will focus on one specific aspect of environmental quality: the "greenness". Environmental physiologists have reviewed that natural public areas positively affect people, as measured in higher life satisfaction and happiness as well as lower stress levels (de Vries et al., 2003; Hazer, Formica, Dieterlen, & Morley, 2018). In order to create environments that support human health and well-being, planners need to take into consideration how the physical environment interacts with human, social and behavioural factors (Hazer et al., 2018).

Urban agriculture is an emerging solution that addresses the above-mentioned challenges (Casazza & Pianigiani, 2016). On one hand, the solution entails agricultural production in urban and peri-urban areas for food (e.g. fruits, vegetables and livestock). On the other hand, this solution refers to uses (urban greening, flowers, herbs) closely inter-related with the urban system/city region which are related to input supply, transport, processing, marketing and support devices ("Urban agriculture", 2018). For the purpose of this research, "community gardens" (CGs) are considered as the specific form of urban agriculture to study green spaces in urban and peri-urban areas.

CGs have been associated with ordinary and everyday urban spaces, designed differently and oriented towards different socio-environmental goals (Milbourne, 2011). Defined as plots of land on which citizens, either communally or individually, grow their own food (Pudup, 2008). Historically CGs were implemented as responses to emergency situations such as war or economic crises (Pudup, 2008). In recent times, generally initiated by citizens, artists, community developers, or housing associations, they are established to facilitate community development,

improve local environments, create functional and recreational green spaces, and to provide education (Ong, Baker, Aguilar, & Stanley, 2019).

Studies of community gardening have pointed to its social impacts. Veen et al. (2016) demonstrate that social cohesion in various CGs in the Netherlands was strengthened because people talk to and get to know each other. Ong et al. (2019) state that social cohesion is developed by a mutual interest which connects individuals. For instance, participants from different CGs in South Australia with this mutual interest felt engaged and the social engagement acted as a driver to develop sense of community. In addition, Firth, Maye and Pearson (2011) study social capital through two UK-based initiatives, and demonstrate how CGs created a sense of pride, increased ties between neighbours from different ages and cultures, and built links with institutions and authorities. Christensen et al. (2019), in their case study in Copenhagen, discover that trust and reciprocal respect were two other aspects of social capital that occur in CGs. Additionally, it is generally known that CGs are less about gardening and more about community. Previous research described CGs as "third places", even though finding a connection with this concept was not the primary objective (Christensen, Malberg Dyg, & Allenberg, 2019; Glover, 2004; Veen, Bock, Van den Berg, Visser, & Wiskerke, 2016). Noteworthy, Kingsley and Townsend (2006) while researching a CG in the outskirts of Melbourne, note that participation in certain initiatives led to growth in connections and networking.

1.2. Problem description

Previous research supports and highlights the numerous positive effects on participating to CGs. Nowadays, society is observing a mushrooming come up of CGs in the urban context seeking to alter the meaning of the place and throughout the physical transformation aim to produce new spaces of identity, sociality and empowerment in the neighbourhood (Milbourne, 2011). Therefore, initiators should be more considerate of community's needs in implementing a CG. Above all, towards communities in deprived neighbourhood, e.g. poor housing quality, crime, social disorder and unemployment (Curley, 2010), to avoid creating additional stressors (Hazer et al., 2018).

However, CGs differ from each other in different aspects, from organisation to participants and, thus, these aspects differently influence the connection with the surrounding community. To my knowledge this topic in CGs remains to research more in depth. Hence, this research is set to fill this gap and reinforce the understanding of a CG in order to be better integrated in the neighbourhood by embracing the community's needs, and not by being a stand-alone project.

1.2.1. Research questions and objectives

Considering the research problem, the main objective is therefore to determine the conditions that enable CGs to positively influence the neighbourhood. In order

to fulfil the objective of the research, the core question that is aimed to be answered is:

*"**Which aspects of community gardens foster attachment to the neighbourhood of the residents most?**"*

The key points of the study are relations. Firstly, the social relationships developed from the CG, and secondly, the bonds created between residents and the place CG.

Subsequently, the following sub-questions can be derived:

1. *Which and among whom social relationships have been developed from a community garden since its implementation?*

2. *How do residents perceive the presence of a community garden in their neighbourhood?*

Therefore, the aim of the first sub-question is to identify the different social relationships developed from the CG and their impacts in the neighbourhood. Whereas, the second sub-question broadens the study population, also, to residents not directly involved in gardening activities, and aims to identify the function of a CG in the neighbourhood for the people living there. However, it is expected that other neighbourhood features influence residents' attachment to their neighbourhood. The ultimate goal is to optimize urban planning practices for CGs to be developed in compliance with the residents' needs.

1.3. Study overview

The report, after having provided to the reader a background of the undertaken research on the topic and having delineated the research problem and objectives, will be structured as follows: in Chapter 2 the academic relevance of the research will be discussed by presenting the applied theories and a simplified illustration of the research. In Chapter 3, initially, the study area and the criteria for the selection of the cases will be shown. Then, the selected cases will be briefly described. Afterwards, the methods employed to gather the data, media analysis, participants observation, semi-structured interviews and survey will be extensively discussed and addressed in relation to the selected cases. Lastly, the extrapolation of qualitative data and the validity of the research will be discussed. The results of the two selected cases will be presented, respectively, in Chapter 4 and 5. In Chapter 6 the results will be interpreted and discussed in a way that the sub-research questions will be fulfilled. Lastly, in Chapter 7 the research objective, limitations on the methods employed and suggestions for further research and recommendations for management and policy of CGs will be addressed.

2. Theoretical framework

In this study CGs will be studied around two phenomena: (i) the social relationships developed among people from the CGs and (ii) the meaning of CGs for the inhabitants. Here below the theoretical framework of this research is elaborated. It starts with explaining the important concepts, their interpretation and how the existing scientific literature is used on behalf of this research. First, a definition of social capital is given, then place attachment will be discussed.

2.1. Social capital

Over the years the concept of social capital has been discussed by several theorists. Despite the abundance of research, a clear and well-defined definition of the concept is missing. This might be due to the fact that compared to other types of capital, such as economic, human and physical, social is not tangible (Humnath & Kumi, 2009). Social capital is an interdisciplinary concept that is oriented towards the importance of social networks and relationships of individuals or communities (Hunter, 2016). Social capital is rooted in the notion of norms, mutual interest, trust, relationships, networks, membership, participation, information flows and institutions (Humnath & Kumi, 2009). Notorious scholars that discussed social capital's definition are Pierre Bourdieu (1986), James Coleman (1988), Robert Putnam (1993), Francis Fukuyama (1995) and Nan Lin (2001).

Despite this diversity of interpretations, the core view of social capital is that individuals or networks share norms and value for a common purpose. Another aspect in common among different social capital definitions is that either the group or the individual can benefit from that. However, this abstractness of the theory creates difficulties in the measuring. Furthermore, a unique method to do is still to be discovered. Therefore, this study applies social capital theories in accordance with Jacobs (1961), referring to the value of networks.

In line with Firth, Maye and Pearson (2011) bonding, bridging and linking forms of social capital will be studied:

- *Bonding social capital* refers to ties among individuals who are similar to each other within a group, such as, family, close friends or neighbours;
- *Bridging social capital* refers to ties among individuals who are different in some way, such as, loose friendships, colleagues or ethnicity;
- *Linking social capital* refers to connection among individuals and people in power, such as those in politically or financially influential positions.

On behalf of this study, the respective forms of social capital are operationalised as follow: bonding social capital refers social relationships among gardeners or neighbours; bridging social capital refers to social relationships developed among

gardeners or neighbours who differ from each other in social status, education, income, ethnicity, networks or go across the neighbourhood; and linking social capital refers to connections with institutions with financial power. All three types of social capital are fundamental to achieve a strong sense of community. Accordingly, bonded group without bridging capital will remain isolated from the rest of the society, moreover, through linking social capital communities will be able to access to a far wider range of resources (Firth, Maye, & Pearson, 2011). Various studies propose that CGs can positively impact social capital (Glover, 2004; Kingsley & Townsend, 2006; Firth et al., 2011; Christensen et al., 2019). Firstly, it brings people together with a common purpose to participate in the activities. Additionally, these participants might have different background, nationality, education, religion and age. Secondly, it settles down a meeting place which enables people to interact. Thirdly, growing food, cooking and eating all together are all sociable activities. Lastly, a CG helps to build links within institutions and authorities by enabling the access to resources which otherwise would not be possible. However, Dekker (2007) defines distressed neighbourhoods as urban areas which are dealing with pollution, lack of maintenance, vandalism, crime, and social isolation. Usually, in these areas there is a high concentration of low-income households which exacerbate the social, economic and physical problems (Dekker, 2007). According to Curley (2010), social capital in poor areas is limited because their neighbourhood life involves interactions primarily with other, socially and financially, disadvantaged people. Therefore, this study will investigate the influence of CGs on the social capital of the neighbourhood.

2.2. Place attachment

Interestingly, in the mid 20th century urban theorists and planners pursued to understand the social dynamics of place and the meaning of the physical environment to employ place attachment as a basis for planning practice (Mooney, 2009). However, research in place attachment increasingly emphasized the social connection, and progressively place attachment was abandoned from planning theory and practice. As a matter of fact, in reviewing current research it could be deduced that attachment to place is an expression of attachment to people and social networks, and not to physical place (Hidalgo & Hernández, 2001). However, many environmental psychologist have, lately, confirmed that most people also develop bonds with places (Scannell & Gifford, 2014).

Despite the fact that, different conceptualisations of place attachment have been made, there is no agreement on a proper definition. Brown and Perkins (1992) definition of place attachment (as cited in Mihaylov & Perkins, 2014, p.61), synthesised over across this multifaceted concept:

> *"Place attachment involves positively experienced bonds, sometimes occurring without awareness, that are developed over time from the behavioural, affective, and cognitive ties between*

individuals and/or groups and their sociophysical environment. These bonds provide a framework for both individual and communal aspects of identity and have both stabilizing and dynamic features."

Previous studies on place attachment focused on different places, from a large scale, such as cities and nations, to a smaller scale, such neighbourhoods, parks, streets or home. However, most of the literature focuses on the neighbourhood level, referring to that as the most preferable spatial level of attachment (Hidalgo & Hernández, 2001). Similarly, this study will focus on the aspects of a CG that influence resident's neighbourhood satisfaction. According to Mooney (2009), a *'community'* is a voluntary association of people with a common purpose, and consequently, is also a communal space of work. Therefore, community means both a social network and a geographical location. Comstock et al (2010), notes that community-based interventions generate collective efficacy. It refers to a cohesive group of neighbours who intervene for a common good (Kleinhans et al., 2007). By means of improving social interactions, and an impetus for other community interventions. Furthermore, opportunities for gardening and other green areas are contributors to neighbourhood satisfaction as well (Mooney, 2009).

Similar to social capital, also place attachment comprises different concepts and sometimes it is challenging to distinguish the jargon (Raymond, Brown, & Weber, 2010). Accordingly, Trentelman (2009) highlights the tension between: (i) the socio-cultural dimension of place; (ii) the biophysical dimension of place; and (iii) the integration of both socio-cultural and natural setting environment. This study is built around the framework developed by Gustafson (2001) *'self-other-environment'* (as cited in Raymond et al., 2010):

- *Self-pole* refers to the personal meaning of a place and it is associated to emotions, activities, and self-identification with a place;

- *Other-pole* refers to the influence that other people have in the place;

- *Environment-pole* refers to the opportunities as well as the lack of opportunities that a place provides.

On behalf of this study, the above-mentioned framework is conceptualised around CGs as follow: the self-pole refers to the emotional relation, self-identity or activities carried out with the CG; other-pole refers to the significance of the social relations and connections with other gardeners or neighbours; and environment-pole refers to the location, organisation or other physical characteristics of the CG that affect the residents' perception.

Additionally, research on place attachment has shown that length of residence, social involvement and shared social values are strong predictors of attachment (Dekker, 2007; Mooney, 2009; Lewicka, 2011). Other aspects that influence residents' attachment to the neighbourhood are, for instance, quality of housing

and proximity to landmarks or walking distance amenities, access to nature, green streets and residents' connection to their past in the daily activities (Mooney, 2009; Lewicka, 2011). However, there also is a shadow side of place attachment, which has been firstly defined by Chawla (1992), and it involves the negative and ambivalent feelings and experiences of places. Further researches have suggested that this shadow side of place attachment is particularly evident in social housing and poor settings (Manzo, 2014).

2.3. Conceptual framework
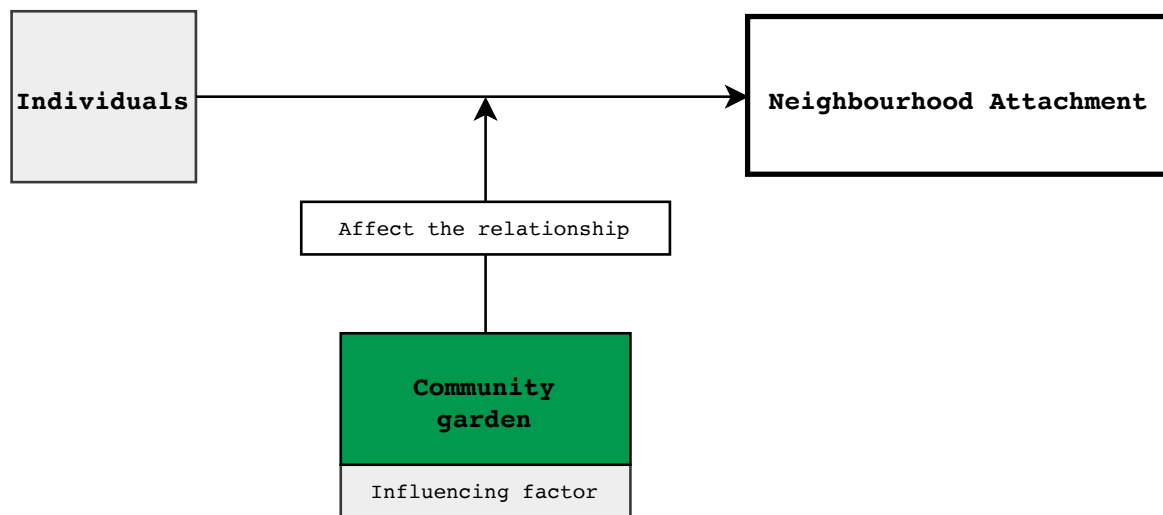
Figure 1. Conceptual framework

In previous sections, the applied theories and their collocation along this study were described. Figure 1 shows the conceptual framework around which this research is based upon and it gives a simplified illustration of the undertaken study. CGs are considered as an influencing factor in the attachment to the neighbourhood of the residents. Thus, to fulfil the research objectives, this study aims to determine the social relationships developed from CGs and the connection of the residents with such places through social capital and place attachment lenses.

3. Methods

3.1. Research approach

This study aimed to investigate the understanding of a CG in the neighbourhood. A qualitative research was conducted. Accordingly, Polkinghorne (2005) states that qualitative research gives the possibility to study the life experiences of people.

For this research, a case study approach was employed to evaluate the outcomes of two different CGs in two neighbourhoods in Amsterdam. Multiple case study approach provides broader support for explaining a phenomenon (Hay, 2010). A cross-sectional study design was applied, which means that the research was conducted at one point in time (Hay, 2010). However, for a qualitative research, a clarification of the term one point in time is required. Accordingly, Hay (2010), states: *"[…] a study may be considered cross-sectional if fieldwork is conducted in one block of time regardless of how long it takes."* (p. 90). Then, the researcher analysis was not only oriented to make a comparison of the two cases, but it pursued to give a completer and more substantial image of CGs' contribution to the neighbourhood.

Table 1 illustrates how the study was employed by the researcher. In the following chapter each phase will be addressed. Firstly, the process and criteria used to select the CGs will be presented. Secondly, the CGs will then be briefly described. Afterwards, the methods used to collect the data will be explained. And lastly, the analysis of the gathered data and the validity of the study will be elucidated.

Table 1. Methods diagram

	September	October	November	December	January	February
Study area selection	■					
Research proposal	■	■				
Schedule Survey *"Kolenkitbuurt Noord"*		■	■			
Schedule Participant observation			■			
Conduct participant observation			■	■		
Conduct survey *"Kolenkitbuurt Noord"*			■	■		
Schedule interviews			■	■		
Conduct interviews			■	■		
Transcription interviews				■		
Web-based survey *"Borgerbuurt"*					■	
Data analysis					■	■

3.2. Research area

Due to practical reason, such as economic, high number of initiatives and time-restriction for the data collection, the researcher decided to employ the study in the Netherlands and to select the two CGs from the same municipality. According to the amount of information already available from the web and from previous literature the Municipality of Amsterdam was selected. The selection of the study areas consisted of two phases.

In an initial phase, the researcher looked on existing portals in which green initiatives in Amsterdam were updated. Those portals were, for instance, City Farming (https://maps.amsterdam.nl/stadslandbouw/), Natuur & Millieu in jouw buurt (https://nmtzuid.nl/kaart/) and Buurt Groen 020 (https://buurtgroen020.nl/), and other initiatives came to the researcher by word of mouth. The criteria for the initial selection were:

- Being a vegetable or picking flowers garden;
- Being still in progress;
- Availability phone number or email address;

Besides these requisites, it was necessary to check the suitability of the project in relation to the precondition that the researcher had no working knowledge of the Dutch language. Therefore, the availability of English speakers was essential for the research to be conducted.

Table 2 lists the 17 garden projects selected after the initial phase, to which a brief description of this research and a request to visit the site for further information was submitted by e-mail.

Table 2. Initial case study selection

Name of the project	Neighbourhood	Classification	
Anna's Tuin en Ruigte	Science park Zuid	Non-neighbourhood bound	Communal plot
BellamyTuin	WG-Terrein	Non-neighbourhood bound	Individual plot
Bijeneiland	Erasmusparkbuurt West	Neighbourhood bound	Communal plot
BuurtMoesBinnenTuin	Kolenkitbuurt Noord	Neighbourhood bound	Individual plot
BuurtMoesTuin de Kleine Wereld	De Klein Wereld	Neighbourhood bound	Communal plot
Buurtuin Egelenburg	Buitenveldert Zuid-West	Neighbourhood bound	Communal plot
BuurtMoesTuin Sassenheimstraat	Aalsmeerwegbuurt West	Neighbourhood bound	Communal plot
BuurtMoesTuin Venserpolder	Venserpolder West	Neighbourhood bound	Communal plot
De Moeshoek	Nieuwendam	Neighbourhood bound	Communal plot
De TropenTuin	Oosterpark	Neighbourhood bound	Communal plot
De Tuin van Westerpark	Woon- en Groengebied Sloterdijk	Non-neighbourhood bound	Individual plot
Groen Gemaal	Sarphatiparkbuurt	Neighbourhood bound	Communal plot
Het Eetbare Plantsoen	Borgerbuurt	Neighbourhood bound	Communal plot
Hoptille Tuin	Hoptille	Neighbourhood bound	Individual plot
"I can change the world with my two hands"	Landlust Zuid	Neighbourhood bound	Communal plot

| OlympiaTuin | Marathonbuurt Oost | Non-neighbourhood bound | Communal plot |
| Voedseltuin Ijplein | Ijplein | Neighbourhood bound | Communal plot |

Six out of 17 projects replied and showed interest in the research. These projects were: *Anna's Tuin en Ruigte, BuurtMoesBinnenTuin, Groen Gemaal, Het Eetbare Plantsoen, Hoptille Tuin* and *OlympiaTuin.* This was then followed up by a visit of the CGs with the informants. During these meetings an informal interview was carried out to get to know more about the purpose and development of the garden project, its organisation and to gather an overview about the neighbourhood.

The second step was to select the two appropriate projects to involve in the research. The prerequisites for the cases to be selected were the following:

1. One case communal plot and one individual plots
2. Neighbourhood bound
3. Exist for more than a full year

The diversity in the configuration, between communal and individual plots, was opted due to the researcher's assumption of the different social relationships developed from the CGs. By doing so, will be given a more substantial description about the CGs' function in the neighbourhoods. Accordingly, neighbourhood bound refers to CGs maintained by the people from the same neighbourhood where the CG in implemented (Veen et al., 2016), in order to preserve the neighbourhood identity. Then, according to the length of the project, the researcher expected that would have been easier for the reference contact to suggest who should have been interviewed and, also, it was assumed that certain bonds among participants were already developed. Thus, finding the initiatives that matched these requirements turned out to be challenging and caused a delay in the data collection phase.

Thus, for the CG with individual plots, the *Hoptille Tuin* was neighbourhood-bound, but unfortunately, it was only implemented since May 2019 and still working on the set up of the raise beds. Therefore, *BuurtMoesBinnenTuin*, implemented in 2012, was selected. Additionally, the contact referent was conducting a research for the Vrije Universiteit Amsterdam with the CG and the related neighbourhood as a case study. Then, for the CG with communal plots, *Anna's Tuin en Ruigte* was not neighbourhood-bound, and furthermore, it was in collaboration with the Universiteit van Amsterdam for some experiments. *Groen Gemaal* turned out not to be a CG, but a volunteer organisation that was taking care of the green areas at De Pijp, instead. *Het Eetbare Plantsoen* and *Olympiatuin,* were both in compliance with the above-mentioned criteria. However, during the informal interviews with the contact referent of the initiatives, the researcher had a better perception and a greater involvement from the referent of *Het Eetbare Plantsoen.*

3.3. Case studies

Figure 2 portrays Amsterdam's administration as presented in *box 1.* Highlighted in dark red the districts where the neighbourhood involved in this study were located. Both of the neighbourhood are comprised in Amsterdam West. The first CG that will be described is BuurtMoesBinnenTuin, in *Kolenkitbuurt Noord*, De Kolenkit district. While, the second CG that will be described, is Het Eetbare Plantsoen, located in *Borgerbuurt*, Van Lennepbuurt district.
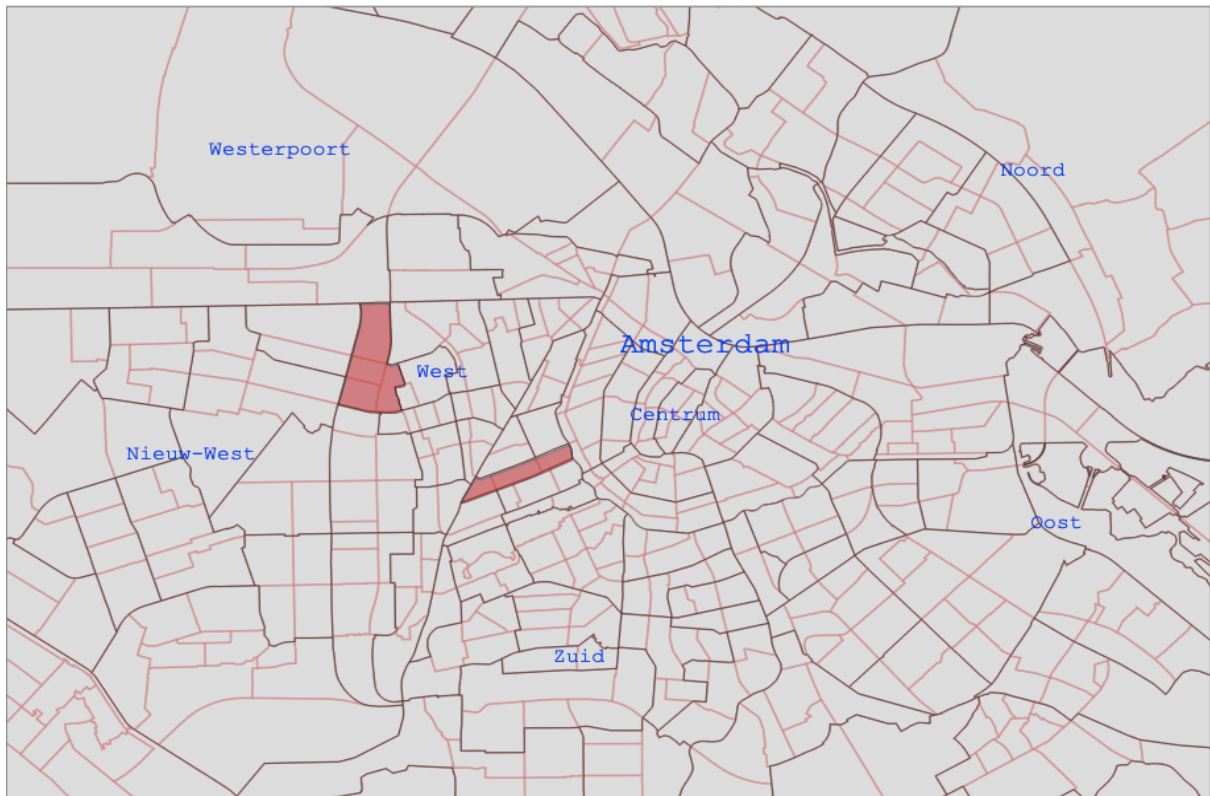

Figure 2. Map of Amsterdam which shows the subdivision in "wijken" and "buurten" with highlighted in red de Kolenkit district and the Van Lennepbuurt district

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Box 1. Amsterdam districts and neighbourhoods

Amsterdam is divided into eight zones, each with its own committee. The committee are responsible for carrying out municipal tasks, such as, work in public spaces, and adapt the plan of the College of Mayor in accordance to its own needs and issues. The name in Dutch is *"Stadsdeel"* and are: *Centrum, West, Nieuw-West, Westpoort, Zuid, Zuidoost, Oost* and *Noord.* However, Westpoort does not have its own committee due to a limited number of inhabitants living there ("Districts and Neighbourhoods", n.d.). Each Stadsdeel is subdivided into smaller area, such district or *'wijk'*, and, subsequently, in neighbourhood or *'buurt'*. Each district has its own support team that residents can go to for any questions, concerns or project in the area. Interestingly, these two types of areas, even though there is a difference in scale, would be both translated to English as neighbourhood. Thereafter, in regard to this research, with the term neighbourhood the researcher is referring to the *'buurt'* area.

3.3.1. BuurtMoesBinnenTuin

BuurtMoesBinnenTuin is located in Kolenkitbuurt Noord *(figure 3 and 4)*. The CG was comprised in the initiatives of the *Onze-buurt-aan-zet* (It's our neighbourhood's turn) program (OBAZ), a national initiative to increase the living condition of 30 of the most deprived neighbourhoods in the Netherlands ("Cascoland BuurtMoesBinnenTuin", n.d.). It was implemented in 2012 by Cascoland (local organisation in the neighbourhood) and a group of residents. The garden was located in a so-called "binnentuin", which means garden in between. In this case in between of two dwelling units in a social housing setting and, seventeen participants own a private lot on which they grow their own vegetables or fruits.

Figure 3 and 4. Pictures of BuurtMoesBinnenTuin

3.3.1.1. Kolenkitbuurt Noord

Kolenkitbuurt Noord is composed of medium-level buildings, scattered with occasional low-rise buildings and open green spaces. The 80.4% of the inhabitants come from non-western countries and, the nationalities most present are Moroccan with 45.9% and Turkish with 25.8%. In 2007, the Kolenkit was listed in *"De 40 wijken van Vogelaar"*, which concerned a list of 40 Dutch disadvantage neighbourhoods announced in 2007 by Minister Ella Vogelaar of Housing, Communities and Integration ("Cascoland Kolenkit", n.d.). Here below, *Table 3* displays the main data of the neighbourhood, and *figures 5* and *6* show an overview of the neighbourhood. Other statistical data and related visualisations are shown in *Appendix 3.*

Table 3. Information of Kolenkitbuurt Noord

Kolenkitbuurt Noord

Stadsdeel	Stadsdeel West
District	De Kolenkit
Total inhabitants	3,755
Year of development	1950–1970
	2010–2020

Source: "Informatie Kolenkitbuurt Noord" (2019)
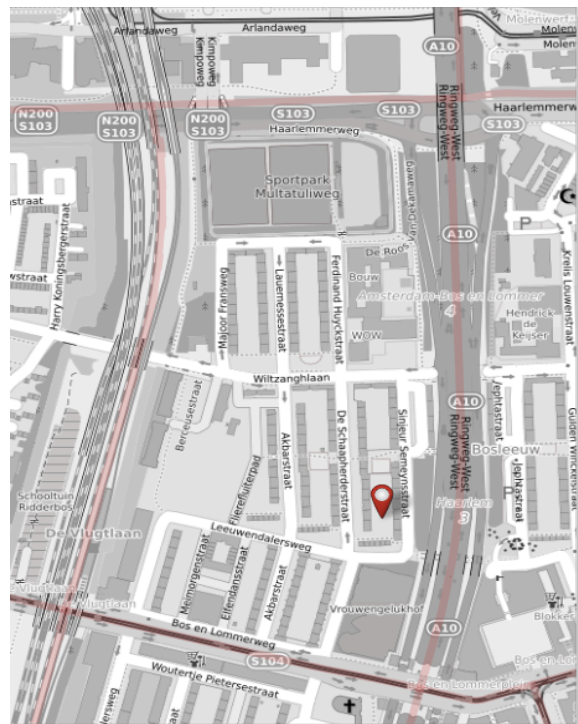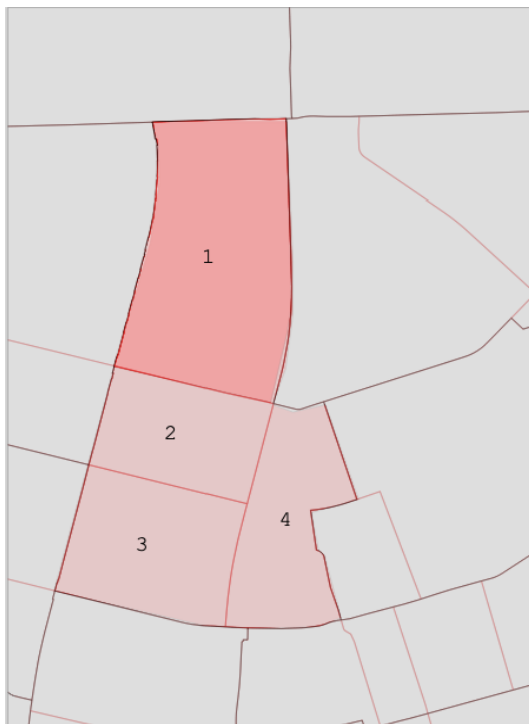
Figure 5 and 6. Detail of De Kolenkit district and focus of Kolenkitbuurt Noord (1). Marked the location of BuurtMoesBinnenTuin

3.3.2. Het Eetbare Plantsoen

is Het Eetbare Plantsoen is located in Borgerbuurt *(figure 7* and *8)*. The CG was initiated, in the spring of 2015, by a group of residents. The garden comprises two communal plots for a total of 700 m². A group of about 20 regulars work together during the two common working days: Wednesday and Sunday. Produce is, at the end of the working days, separated and divided in equal amounts among all the volunteers who worked during that day.

Figure 7 and 8. Pictures of Het Eetbare Plantsoen

Borgerbuurt is located in the Oud-West. Much of this part of the Oud-West was built in the late 19th century during the city's urban expansion, mainly to make room for working-class families. The percentage of native Dutch in the neighbourhood is 40.3% and the other 60% of immigrants is subdivided between immigrants from western and not western countries, respectively, 43% and 16.7%. Here below, *Table 4* displays the main data of the neighbourhood, and *figures 9* and *10* show an overview of the neighbourhood. Other statistical data and related visualisations are shown in *Appendix 4.*

Table 4. *Information of Borgerbuurt*

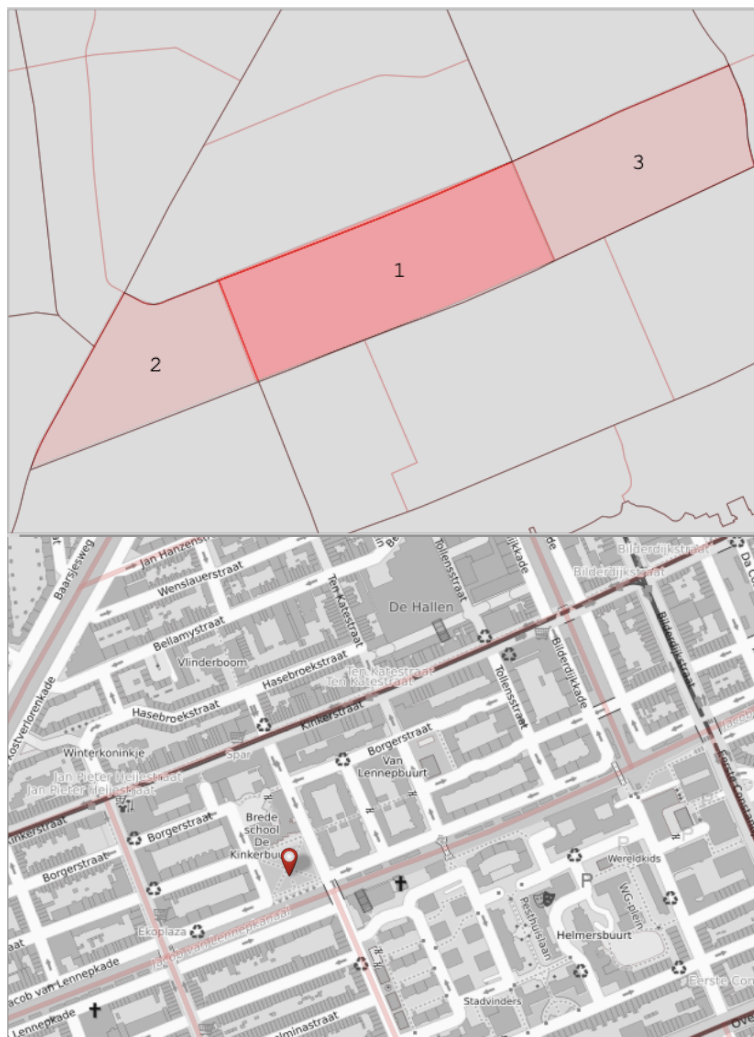| Borgerbuurt	
Stadsdeel	Stadsdeel West
District	Van Lennepbuurt
Total inhabitants	2,875
Year of development	1980-1990

Source: "Informatie Borgerbuurt", (2019)

Figure 9 and 10. *Detail of Van Lennepbuurt district and focus on Borgerbuurt (1). Marked the location of Het Eetbare Plantsoen*

The main characteristics of the two CGs studied are displayed in *Table 5*.

Table 5. Main characteristics of BuurtMoesBinnenTuin and Het Eetbare Plantsoen

	BuurtMoesBinnenTuin	Het Eetbare Plantsoen
Location	Kolenkitbuurt Noord — De Kolenkit district	Borgerbuurt — Van Lennepbuurt district
Who initiated	Local organisation and community members	Community members
Who manage	Head gardener	Garden's core group
Purpose and motivation/s	Community development	Growing fruit and vegetable in the city and greening the area
Type of users	Community garden members	Volunteers from the neighbourhood
Activities	Growing own vegetables and fruits	Vegetable and fruit growing, community activities, volunteering and recreation
Funding	Council grant – housing association support — membership fees	Council grant support

3.4. Data collection

Different methods were employed to collect the data. These include, media analysis, participants observation, semi-structured interviews and surveys.

3.4.1. Media analysis

Media analysis has been fundamental in the onset of the research but also during its development. It consists of analysing media contents in any of its forms: articles, documentaries, newspapers, videos, etc. (Hay, 2010). It was essential to the researcher to get a thorough overview of the topic and in the definition of the knowledge gap that this study aimed to fill. Moreover, this method has helped to define the theoretical framework of this research. In fact, it has been crucial in identifying the key themes associated with this movement. Apart from that, the suitability of other research methods was partially assessed by the researcher based on the information obtained via media analysis. This method has also been utilised to customise the interview guide prior to conducting the interviews. Additionally, it permitted to the researcher to gather the descriptive and statistical information of the neighbourhoods taken from the municipality and statistical bureau websites.

3.4.2. Participants observation

Participants observation was conducted in the selected garden projects in order to evaluate the social relationships developed from the CGs and further compared the results with in-depth data gathered from the semi-structured interviews. Participants observation was conducting for different purposes. Accordingly, Hay

(2010) identifies three main purposes for conducting participants observation: *counting*, *complementary*, and *contextual*. The first purpose refers to identify the number of participants. The second purpose intents to gather additional data before, during or after structured forms of data collection, such as, interviews, focus groups or questionnaires. The last purpose refers to directly experience the routine of the situation where the research is undertaken by being a participant. Furthermore, actively working in the garden with the participants gave the researcher the chance to gather the gardeners' trust. The researcher visited the garden projects prior to conducting the participants observation in order to be more familiar with the environment and the tasks as an active participant. During the first day of observation, the researcher introduced himself, his role during the following weeks and briefly introduced the subject of the research to the participants. Accordingly, knowing your role in a workplace would make the access to the data more direct and transparent in regard to other participants (Hay, 2010). However, the research was conducted during the months of November and December, where the CG activities were about to an end. This had a big influence on, both, the duration of the observation and the gardeners' participation. Thus, in BuurtMoesBinnenTuin, during the participants observation the researcher had the chance to co-work only with the head gardener and two other participants, in cleaning up the ground and prepare a common area for planting strawberries plants. The researcher actively collaborated in the garden for four consecutive Tuesdays. Whereas, in Het Eetbare Plantsoen, participant observation was conducted during the common working days in the garden. More precisely, the co-work with the gardeners lasted for four consecutive Sundays during the period of the research.

3.4.3. Semi-structured interviews

To be able to define the social relationships and value the network developed from the selected CGs, semi-structured interviews were conducted. Kumar (2011) states: *"if you want to research the different perspectives of an issue, the problems experienced by people living in a community or the different views people hold towards an issue, then these are better explored using unstructured enquiries."* (p.13). Therefore, all the interviews that have been conducted were semi-structured. Semi-structured interview gives the interviewer the opportunity to gather additional information, because of the open style of interviewing (Kumar, 2011). Interviews mainly touched upon CG, social relationships and network, although topics, such as, neighbourhood's life and living conditions were also inquired. The role of the research is to keep the conversation close to the research topics (Hay, 2010). Thus, in order to fulfil the topics touched upon the research questions the interviews have been structured with an interview guide *(see Appendix 1)*, based on: *general involvement in the garden, relationships with other gardeners and neighbourhood patterns.* The purpose of the interview guide was mainly to ensure that all topics and issues were covered appropriately (Hay,

2010). In both of the CGs, one of the undertaken interviews was with the head gardener. Throughout the interview with the head gardener, it was possible to gather more insights about the development process of the CG, the purpose of its implementation and to gain more insights about the neighbourhood. The selection of the other interviewees, in both of the CGs, was suggested by the head gardener. Therefore, a snowball sampling was employed. This required the identification of other participants by people who know other people involved in the case (Hay, 2010). In BuurtMoesBinnenTuin and in Het Eetbare Plantsoen, respectively, three and seven interviews were conducted. The interviews were conducted face-to-face in the CG. In Het Eetbare Plantsoen they were conducted in English. Instead, in BuurtMoesBinnenTuin, the interview with the head gardener was, as well, conducted in English, however, for the other participants the researcher was helped by the head gardener who translated in Dutch to the interviewees. The interviews were recorded, after the interviewee's permissions, with a mobile phone which made possible the transcription and the coding afterwards.

Respondents

In *table 6* the interview's participants are indicated. In this report, codes will be used to refer to specific interviewees in order to guarantee anonymity. In total ten interviews were conducted.

Table 6. Interviews overview and reference codes

N.	Date	Status	Neighbourhood	Community garden	Reference code
1	24-11-19	Community garden member	Borgerbuurt	Het Eetbare Plantsoen	BOR-P1-24.11.19
2	24-11-19	Community garden member	Borgerbuurt	Het Eetbare Plantsoen	BOR-P2-24.11.19
3	24-11-19	Community garden member	Borgerbuurt	Het Eetbare Plantsoen	BOR-P3-24.11.19
4	13-12-19	Community garden member	Kolenkitbuurt Noord	BuurtMoesBinnenTuin	KOL-P4-13.12.19
5	13-12-19	Community garden member	Kolenkitbuurt Noord	BuurtMoesBinnenTuin	KOL-P5-13.12.19
6	13-12-19	Community garden member	Borgerbuurt	Het Eetbare Plantsoen	BOR-P6-13.12.19
7	17-12-19	Head gardener	Kolenkitbuurt Noord	BuurtMoesBinnenTuin	KOL-P7-17.12.19
8	18-12-19	Community garden member	Borgerbuurt	Het Eetbare Plantsoen	BOR-P8-18.12.19
9	18-12-19	Head gardener	Borgerbuurt	Het Eetbare Plantsoen	BOR-P9-18.12.19
10	19-12-19	Community garden member	Borgerbuurt	Het Eetbare Plantsoen	BOR-P10-19.12.19

3.4.4. Survey

To collect data about the perception of the CGs and their function in the neighbourhoods to a broaden population a survey has been conducted. The survey was addressed to inhabitants not directly involved in gardening activities. Even though, different approaches were applied for each of the selected area, the same topics were explored: *their perception of the CG* and *their feeling about living in the neighbourhood*. In Kolenkitbuurt Noord a door-to-door survey with the

residents was conducted. The survey was comprised in a preliminary section of a larger research commissioned by one of the housing associations operating in the neighbourhood: Rochdale. The researcher got involved in this investigation through the head gardener of BuurtMoesBinnenTuin. At the moment of the research, Rochdale was in preparation of a renewal plan for the area and it was taking into consideration the implementation of another CG in the neighbourhood. Therefore, a polylingual team of five people twice a week asked resident the following: *if they knew about the existing CG in the neighbourhood*, *what they feel about their courtyard* and *how they feel about their courtyard becoming a CG*. Besides that, during these discussions with residents, other topics were also touched upon. Most notably the residents living conditions, but also people's desire to stay in the neighbourhood and what it meant to be a resident in Kolenkitbuurt Noord. It was conducted in Dutch, although, directly afterwards each conversation with participants, the information, with the help of Dutch speakers, were shared and transcribed in English, as closely as possible to people's responses. The survey kept going until a saturation point was reached. Whereas, in Borgerbuurt, due to a lack of contacts and a language barrier concern, the researcher was dependent on the head gardener to get in contact with the residents not directly involved in the garden. Therefore, a web-based survey was delivered through the CG's newsletter. Accordingly, a convenience sampling was employed. A convenience sampling involves selecting participants on the basis of access (Hay, 2010). The CG's newsletter comprised 96 receivers, among which about the 80% of the enlisted are not gardeners. An earlier communication was sent in the newsletter with an explanation of the research topics and a brief introduction of the researcher. In a second moment, an introductory letter with a hyperlink to a web-based survey was sent, in English with the possibility of a Dutch translation, to the newsletter's members. The survey was pre-tested, in a preceding stage, with the contact referent in the neighbourhood. Accordingly, Hay (2010) stresses how, especially, for web-based questionnaire a test should be undertaken to detect and eliminate potential technical problems. The survey had a 13% rate of respondents, comprising 10 responses out of the 76 recipients, to whom the survey was delivered. The survey seeking qualitative data was composed, for most, of open questions. Which, accordingly, provided the respondents the opportunity to express themselves freely (Kumar, 2011), by enabling the researcher to compile people's experiences, interpretations, and as well as their reactions to, social processes and circumstances (Hay, 2010).

A research matrix is displayed in *Table 7.* It is meant to provide a comprehensive and structured overview of what methods have operated in addressing the sub-research questions (SRQs) under investigation.

Table 7. Data collection and analysis

SRQs		Method(s)		Data	Data source	Analysis
1	Which and among whom social relationships have been developed from a community garden since its implementation?	1	Participants observation	Notes and summaries	Head gardener and community garden members or volunteers	Deductive and inductive coding
		2	Semi-structured interviews	Transcripts		
2	How do residents perceive the presence of a CG in their neighbourhood?	1	Informal interviews and participants observation	Notes and summaries	Site visit	Deductive and inductive coding
		2	Semi-structured interviews	Transcripts	Head gardener and CG members or volunteers	
		3	Survey	Transcripts	Local residents	

3.5. Data analysis

The gathered data were in a second step analysed, in order to make sense of all the information. During the days in which the researcher was involved in the participants observation, annotations were taken in order to acknowledge gardeners' behaviour. Unfortunately, conversations among gardeners were kept in Dutch, therefore the researcher was not able to understand. However, the researcher took advantage of some sporadic conversations with the gardeners to intake informal interviews with them. At least, this was possible in Het Eetbare Plantsoen, where gardeners had good command of the English language. Subsequently, these notes taken during participants observation, if necessary, were incorporated in the semi-structured interviews' transcription as side notes.

Interviews, as previously mentioned, were all recorded with the researcher's cell phone after having received the interviewer's permission. The recorded interviews, if possible, were transcribed the same day or the day after the interview. Doing so, the interview was still fresh in the researcher's mind, therefore it was possible to make side notes or go back to the interviewer for clarification. The interviews were transcribed in detail, to the extent which was pertinent for this research. Then, the next step was to analyse the interviews. The interview analysis seeks for the meaning of the data (Hay, 2010). There are different ways to analyse the data, however for the interviews, a latent content analysis has been conducted. Latent content analysis involved the depiction of the text for themes (Hay, 2010). This process of organising and giving sense to the data is done by coding. On behalf of this research, the researcher made use of a particular software for qualitative data analysis: ATLAS.ti. Wageningen University & Research holds the

licence for this software. Therefore, the researcher's access was facilitated. It was employed in a deductive way of coding. It means that codes where prior created to support the study's theories. *Table 8* illustrates a short list of codes, representing the main theories and codes categories. The complete 'codebook' is shown in the *Appendix 2*.

Table 8. *Short list of codes*

Code(s)	Sub-code(s)
Social capital	Social capital: bonding
	Social capital: bridging
	Social capital: linking
Place attachment	Place attachment: self
	Place attachment: other
	Place attachment: environment
	Place attachment: shadow

Initially, the researcher had roughly read through the interviews to acquire a main understanding. Then, interviews were coded with the short list of codes. Subsequently, in following data analysis, different subcategories were created to get a deeper understanding of the findings. Furthermore, codes regarding the spatial level and time were also created in a second phase. The coding process was repeated several times to avoid any loss of information.

The same codes used for the interviews, were also employed in the transcription from the door-to-door survey and the web-based survey. The same software used for the interviews' analysis was also used on this occasion. In addition to the latent content analysis, in this case, the researcher also conducted a manifest content analysis. Manifest content analysis involved the counting appearance of a word or a phrase (Hay, 2010). Therefore, throughout manifest content analysis the researcher was able to identify the most repetitive data, which mostly concerned the living conditions in the neighbourhood.

3.6. Rigour and trustworthiness

Importantly, it should be possible to perform an evaluation on a conducted research and others need to believe that, the study, has been performed reliably (Hay, 2010). Therefore, ensuring rigour in a research means to establish the trustworthiness of the work. However, Hay (2010) stresses that, trustworthiness must be earned because it is not assumed. To ensure and defend the research's rigour different measure and evaluation need to occur throughout the entire research period. In this study, the researcher applied *triangulation* and *member checking.*

Triangulation refers to the use of multiple methods or sources to collect and analyse data about the same subject or case (Hay, 2010). The researcher, on behalf of this research, employed two different types of triangulation: (i) through using

different methods to collect the data, such as, participants observation, semi-structured interviews and surveys, and (ii) through, constantly, checking the research process or the data interpretations with the supervisor and the contact referents in the different neighbourhoods. Therefore, through the use of different methods of data collection, the researcher has established rigour at the initial steps of the study. Whereas, constantly consulting the supervisor and the contact referents in the neighbourhoods, the researcher kept a high dependability throughout the entire research period.

Member-checking is a method which increased the credibility of the research. It refers to the check of the transcribed interviews and researcher's interpretations with the research participants (Hay, 2010). In this way, a direct involvement of the participants in the research is enhanced. During the member-checking process, participants can approve, reject or give additional remarks on the results. However, on behalf of this study, the researcher, to some extent, has applied a different way of member-checking. Due to evident lack of knowledge on the specific topics of the study and the language barrier challenge of the participants, the results and interpretations were shared only with the contact referents in the neighbourhoods. The researcher was aware about the different way to approach to the member-checking, although, the head gardeners limited their opinion on the overall interpretations made from the researcher. Their involvement in the CGs and, at the same time, in the neighbourhoods, guaranteed validity and reliability.

4. Results of BuurtMoesBinnenTuin

4.1. Characteristics, activities, membership, members identity

4.1.1. Physical characteristics

BuurtMoesBinnenTuin is located in the so-called *'binnentuin'*, which translated in English it means *'garden in between'*. The CG has been implemented in a common area of a clustered housing setting. It is composed of individuals raised beds, and some common areas, such as a greenhouse (not being used at the moment of the research) a couple of benches and a table. The CG is delimited by a high fence and locked by a gate. Therefore, CG members have an access key.

4.1.2. Activities

Any common activities or events were taking place in BuurtMoesBinnenTuin. The main activities for CG members were gardening and taking care of their own plots. Accordingly, gardening was the main motivation to become a member. Besides that, two CG members, who receive a reimbursement from the CG funds, together with the head gardener maintain the common areas, such as alleys or weeds around the garden. Interestingly, the head gardener is a lecturer at the Vrije Universiteit of Amsterdam and an external PhD researcher. Accordingly, she has been conducting a research in social relations and policymaking in neighbourhood in which is undergoing demographic change, using as a case study De Kolenkit and BuurtMoesBinnenTuin. Accordingly, KOL-P7-17.12.19 stresses *for me the garden has different acts I guess, I'm personally attached to it, of course, because I'm investing so much time and energy there and I guide the people and it has the research act which is more problematic.*

4.1.3. Membership

Importantly, only those who live in Kolenkitbuurt Noord can apply to become a member. The other obligation to become a CG member is the payment of a small annual fee. This fee amount to € 30,00. In total there are 17 members and each of them receive two raise beds where to plant their own fruits or vegetables. Through the membership fees the head gardener sustain the cost for the seeds, tools and other materials. At the time of the research there was a waiting list to become a new member.

4.1.4. Members identity

Interestingly, the nationality of the CG members is in accordance with the demographic situation in the neighbourhood *(see appendix 3)*. Thirteen out of the seventeen gardeners are from Morocco and Turkey, respectively 6 and 7. The other members are distributed between Suriname, the Netherlands and Nigeria. Accordingly, two from Suriname and one respectively from the Netherlands and

Nigeria. The head gardener comes from the UK, although she does not own plots by herself, she has preferred to give priority to other neighbours.

4.2. Governance, institutions, local organisation, social aspects

4.2.1. Governance

Initially, BuurtMoesBinnenTuin was managed by Cascoland. It is an international Amsterdam-based network of artists, architects, designers and performers developing interventions in public space aiming at the development of an ecologic and social sustainable society ("about Cascoland", n.d.). Although, back in the years there were open positions for volunteering and helping Cascoland in the maintenance of the common areas. According to KOL P7-17.12.19 *I like gardening and really missed that feeling so I just typed in the volunteering website to see if there were any gardening options […] I saw a volunteer opportunity from Cascoland, I went along, and I thought was interesting. However, there were a lot of problems in the garden with people gardening wherever they wanted to garden.* Therefore, Cascoland once they came across her background in landscape architecture, asked KOL-P7-17.12.19 to design a new garden's plan to solve the issues there. Here it follows *I basically dismantled their project because it was a complete failure and it was not what gardeners wanted.* Afterwards, she became the head gardener and started to deal with the CG members, housing association and institutions. Additionally, she provides to gardeners the tools or seeds which are needed for gardening. Remarkably, KOL-P7-17.12.19 was living in Amsterdam Noord and she moved to Kolenkitbuurt Noord less than a year ago, in a new housing development. Currently, she is well-known in the neighbourhood, through the collaboration with Cascoland in other projects, by being a head gardener, and by taking Arabic classes at the mosque. In this vein, she was asked by the housing association to undertake the door-to-door investigation, part of the method to collect data of this study, with the aim to gather essential information of the residents' needs for the future renewal plan.

4.2.2. Institutions and local organisation

BuurtMoesBinnenTuin is comprised in the initiatives of the *Onze-buurt-aan-zet* (It's your neighbourhood's turn) OBAZ program. The program aims to increase social cohesion and participation between different groups in the neighbourhood (Lelieveldt, 2004). Draw upon the interview with KOL-P7-17.12.19, BuurtMoesBinnenTuin was, indeed, initiated by a group of neighbours and Cascoland. Cascoland applied for funding to the *"West Begroot[1]"* and won another € 10.000 for

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[1] The West Begroot is an initiative from Stadsdeel West which gives every year the possibility to residents to decide on the use of € 300,00 from the budget. This budget is available for the implementation of the plan's residents and entrepreneurs ("West Begroot 2020", 2020).

its implementation. The CG was implemented, as stated before, in a courtyard between two dwellings made available by the housing association, Rochdale, who owns the property. At a later stage, since the residents are paying service cost to the housing association for the maintenance of the common areas in the dwellings, Cascoland negotiated to receive some funding for the sustainment of the CG. At present, KOL-P7-17.12.19 receives € 2.500 every year to spend for the CG.

4.2.3. Social relationships among gardeners

The researcher did not observe any relationships among gardeners, with the only exception of KOL-P7-17.12.19 and two other CG members, KOL-P4-13.12.19 and KOL-P5-13.12.19. Among other things, they are the CG members that maintain the common areas. Draw upon interviews, KOL-P4-13.12.19 and KOL-P5-13.12.19 confess that some neighbours do not want them in the garden. They have gotten accused for looking through the windows inside the apartments, which according to them, was not true. Besides that, interviews stress that they rather prefer gardening for themselves or just with the two of them to avoid any discussion. Additionally, when they were asked if they consider the gardeners as friends, they responded referring to them as *acquaintances* or *colleagues*. In contrast, KOL-P7-17.12.19 refers to the other gardeners as *friend*, accordingly, *I think nearly everyone in the garden, apart three or four who I do not see that often, are my friend.* Apart from this, interviews revealed a strong friendship among KOL-P4-13.12.19, KOL-P5-13.12.19 and KOL-P7-17.12.19. Among the former two, they know each other since before moving to the Netherlands, because they came from the same village in Morocco. Here it follows:

> *I like working together with E. [KOL-P7-17.12.19] and B. [KOL-P5-13.12.19].* KOL-P4-13.12.19

> *When I work in the garden together with E. [KOL-P7-17.12.19] and B. [KOL-P4-13.12.19], usually there is no discussion.* KOL-P5-13.12.19

> *They [referring to KOL-P4-13.12.19; KOL-P5-13.12.19] call me boss […] I generally love working with them, we have a laugh, we all laugh.* KOL-P7-17.12.19

KOL-P7-17.12.19 is an important figure among the other gardeners, and she revealed an episode that remarks this position. Draw upon the interview KOL-P4-13.12.19 and KOL-P5-13.12.19 did not get on with another garden member with autism problems. Accordingly, KOL-P7-17.12.19 highlights *sometimes might be very hard to be in the garden with her because she does not have any filters.* Thus, she had realised that KOL-P4-13.12.19 and KOL-P5-13.12.19 were not aware about that and she decided to explain to them the problem and the repercussion on human behaviour. After that *they [referring to KOL-P4-13.12.19; KOL-P5-13.12.19] became more tolerant with her and now they talk with each other*.

Findings of the relationships developed from BuurtMoesBinnenTuin can be summarise as shown in *Figure 11*. It highlights few social relationships among gardeners and the strong bond with the head gardener. Additionally, relations between the local organisation and institutions are displayed.
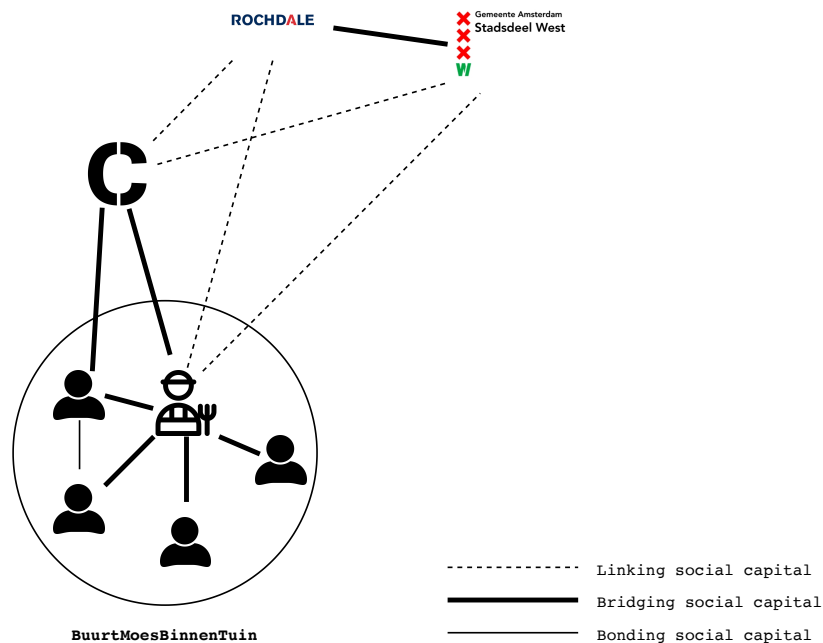

Figure 11. Relationships developed from BuurtMoesBinnenTuin

4.3. BuurtMoesBinnenTuin across Kolenkitbuurt Noord

Noteworthy, very few respondents were aware of the presence of BuurtMoesBinnenTuin in the area. Additionally, those who were aware of the CG was because they knew someone living in the dwellings facing the courtyard where BuurtMoesBinnenTuin is located. Among them, a very small minority criticised the fact that the CG was organised in individual plots, therefore with restricted number of participants and the payment of a membership fee.

However, the other purpose of the door-to-door investigation was to investigate about the idea if a new CG would come. Upon that, residents were generally positive. Remarkably, residents highlight that they are already gardening on their balcony. Consequently, more space where to practice gardening is essential for them. Importantly, a majority report that if a CG would come it would need to be locked, therefore, not open to public. At the time of the research, most of the courtyard present in the neighbourhood were locked, therefore residents could not use them. In fact, residents repetitively refer to their courtyard as a *'kijktuin'*, which stands for looking garden. Therefore, giving a function to the courtyard seem to be essential for residents. Strikingly, most of the households are composed of family with two or more children, therefore, the needs of having a safe place for children to play was another main concern among residents. Consequently, households with children in favour of a CG, also, proposed a combination of a vegetable garden and a playground as a solution to be considered. While, other

residents in favour of a CG did not see this combination as a feasible solution. The latter were concerned about children's playing in the same place where vegetables are growing.

4.4. Understanding Kolenkitbuurt Noord

Importantly, the stigmas that normally worried residents in poverty living in social housing settings were revealed. In fact, residents raise different problems, such as a large presence of rats in the courtyards and in the streets, age and dimension of housing, mould on the walls and a general lack of maintenance. Therefore, residents facing these adverse living situations indicate, as a priority, a necessary renovation of the housing stock units and an increased level of maintenance of the buildings. Additionally, to residents it was not clear what was happening with the renewal plan and a high percentage of them were not aware of that. Lack of trust in the local institutions was observed. Residents stress that the housing association had planned a renovation of the buildings around 20 years ago, but then nothing was done without any explanation. Interviews with KOL-P4-13.12.19 and KOL-P5-13.12.19 stress the current lack of trust in local authorities and a feeling of discrimination. Accordingly, this episode brings the research back in the years, before the socio-demographic changes in the 80's, when the neighbourhood was mostly inhabited by Dutch people:

> *When I first came in the neighbourhood, there were maybe a few Moroccan or Turkish residents, if there was a problem you could have called the housing association, and someone would have helped you eventually, nowadays, they [referring to the housing association] do not come.* KOL-P4-13.12.19

The housing association to overcome this issue with its tenants, has formed a project committee. The aim of this committee is to directly involve the citizens in the decision-making process of the renewal plan.

Figure 12 and *13*, here below, they respectively, represent a housing setting in Kolenkitbuurt Noord and one of the locked courtyards.

Figure 12 and 13. Pictures of Kolenkitbuurt Noord

Figure 14 illustrates through a wordcloud the most used words by residents of Kolenkitbuurt Noord in describing their concerns.
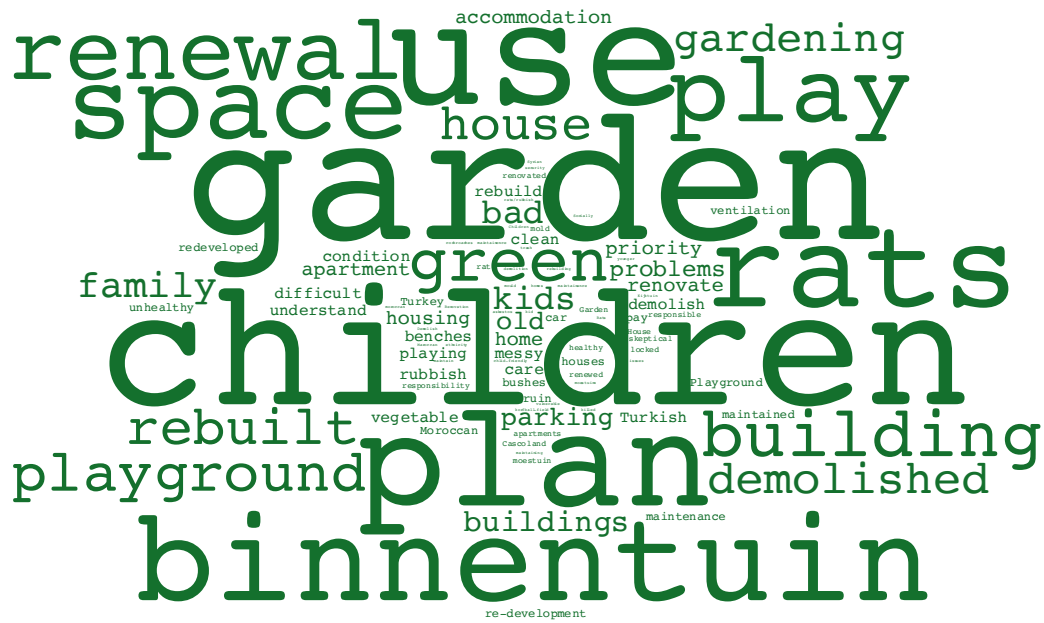

Figure 14. Wordcloud describing the residents' concerns

5. Results of Het Eetbare Plantsoen

5.1. Characteristics, activities, membership, members identity

5.1.1. Physical characteristics

Het Eetbare Plantsoen is located in a public square in the neighbourhood. The public square is divided as follows: two opposite communal plots, for a total of 700 m^2, a middle area furnished with benches, and a playground for children at the side, which is also used by students during the school breaks. The two plots are delimited by low fences and there is no gate that lock the CG. A sign is hung nearby one of the two plots and it gives an explanation of the project with contact details of the head gardener.

5.1.2. Activities

Gardeners gather together twice per week for gardening. The common working days are Wednesday and Sunday morning. Pleasantly, gardeners around half time usually take a coffee or tea break. During this break gardeners gather together in the middle of the square and chat among each other. At the end of each working day produce is separated and divided in equal amount among all the volunteers who have participated during that day. Two events are, also, usually hold by the CG members. Before the gardening season starts gardeners set up a public market in the square, where the plots are located, for giving away some extra seeds and gather with neighbours. While, at the end of the season they usually gather together for a small party at one of the gardener's home.

5.1.3. Membership

Similarly, to the previous case, also Het Eetbare Plantsoen is restricted to people living in the neighbourhood. No fee or other membership obligations are required. Everyone living in the neighbourhood can join the common working days. At the time of the research, a regular group of about 20 people was actively participating during the common working days in the CG.

5.1.4. Members identity

The group of gardeners, at the time of the research, were sharing common traits. The group is composed of white, women and native Dutch of around 60 years old. Accordingly, BOR-P6-13.12.19 confirms *we are not a mixed group, we are all Dutch and old.* Interestingly, BOR-P3-24.11.19 and BOR-P8-18.12.19 respectively remark, *it is very difficult to get Moroccan women, but I think because they do gardening already at home and probably are not allowed by their husbands* and *there are many Turkish men who come at the fences and suggest to us how to do specific works, but they do not join us instead.*

5.2. Governance, institutions, local organisation, social aspects

5.2.1. Governance

Het Eetbare Plantsoen is self-managed by a core group of six regulars. This core group makes most of the decisions regarding the CG, such as materials, tools, seeds and make a sort of schedule for the season. However, all the gardeners recognise BOR-P9-18.12.19 as the head gardener and they all trust on her for the sustainment of the CG. Draw upon participants' interviews the role of BOR-P9-18.12.19 in the garden was emphasised. For instance, BOR-P1-24.11.19 emphasizes *She started the project, she knows a lot about gardening and she deal with the Municipality for new* possibilities, then BOR-P3-24.11.19 underlines *we all recognise her as our manager, every week she sends an email to everyone about what it needs to be done,* and BOR-P10-19.19.12 says *she takes care of everybody and take into consideration our preferences in giving tasks*.

5.2.2. Institutions and local organisation

BOR-P9-18.12.19, in the interview, highlights that in 2015 the *"Regiegroep[2]"* funded € 5.000 for Het Eetbare Plantsoen project. However, this was facilitated by a lifelong friendship between BOR-P9-18.12.19 and a person involved in the Regiegroep, as BOR-P9-18.12.19 confirms *I knew already people from the council, therefore it was easier for me to get there and make it real*. In addition, the year after the CG implementation, BOR-P9-18.12.19 applied for funds for the second garden's plot and received € 3,500. Then, the year later for another small green implementation around the neighbourhood, BOR-P9-18.12.19 received another € 1,500. While, for the first time this year, BOR-P9-18.12.19 applied to *"West Begroot"*, the same initiative from Stadsdeel West highlighted in the previous case. The BOR-P9-18.12.19's plan is to implement *"De Groenkiosk"*, a sort of a meeting point, in the corner of the square where the CG is located. *"De Groenkiosk"*, will be run by volunteers from the neighbourhood and possibly also by residents from nearby neighbourhoods (Witmondt, 2019). In addition, *"De Groenkiosk"* will also collaborate with other initiatives around the city of Amsterdam, such as *Rooftop Revolution, Tegel Eruit, plant Erin, Stadsboeren, Adopteer een Bak, Maar ook de HoneyHighway, Het Voedselbos Acta, Open Tuinen West* (Witmondt, 2019).

5.2.3. Social relationships among gardeners

The CG is an outcome of a group of neighbours. In first person, BOR-P9-18.12.19 and then other neighbours passionate about gardening wanted to implement something for the community. Together they made a plan for the CG and organised two meetings

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[2] It is a coordination group in the Oud-West area, which comprised Da Costa, Bellamy and the Borger neighbourhoods. Each year the Regiegroep receives from Stadsdeel West a budget of approximately € 50.000 to invest in projects from the community and entrepreneurs ("Over ons", n.d.).

for advertising the idea and gathering residents' opinions. These meetings had an unexpected audience of about 50/70 people from the neighbourhood. Additionally, BOR-P6-13.12.19 denotes the importance of the CG in the neighbourhood *it brings people from the neighbourhood together, this is for me the most important reason,* and notably she stresses the importance for the newcomers in order to start a new network. Given that, BOR-P10-19.12.19 underlines *I moved here and needed to make new friends and the garden gave me this* chance. Instead, BOR-P3-24.11.19 highlights how she got to know better people who just knew them for their face before, and BOR-P8-18.12.19 remarks that *It is easier to speak with each other while you are gardening than being sit in front of each other at the table, it comes automatically and every time with a different person.* Draw on the interviews, it can be stated how the garden facilitate the connection within other neighbours. Interestingly, Het Eetbare Plantsoen creates contacts among neighbours, but also between inhabitants from nearby neighbourhoods. In this regard, BOR-P1-24.11.19 stresses *the CG helps to make connection with each other, with who just walk through and, also, with people from other neighbourhoods who just come to see it*. Noteworthy, the coffee or tea break is a special moment during the working days, not only among gardeners, but also other residents join for chatting with the gardeners. Although, also deviant behaviour from residents were mentioned during the interviews. Respondents note that vegetables got stolen during the night or that neighbours pretend their portion of vegetable without participating in the CG activities. However, tolerance and acceptance always prevailed. Sometimes, bonds created among gardeners go beyond the CG environment. An example is the end of the season party, mentioned before, but also BOR-P1-24.11.19 stresses *when I had the operation on my hip, it was nice to receive some messages or visits from someone from the garden when I was recovering*. And lastly, BOR-P6-13.12.19 points out that *it happens to go back home with some of them after having worked in the garden.*

Findings of the relationships developed from Het Eetbare Plantsoen can be summarise as shown in *Figure 15*. It highlights strong bonds among gardeners. Additionally, relations between the local organisation and institutions are displayed. At the side, relationships that will develop with the implementation of *"De Groenkiosk"*.
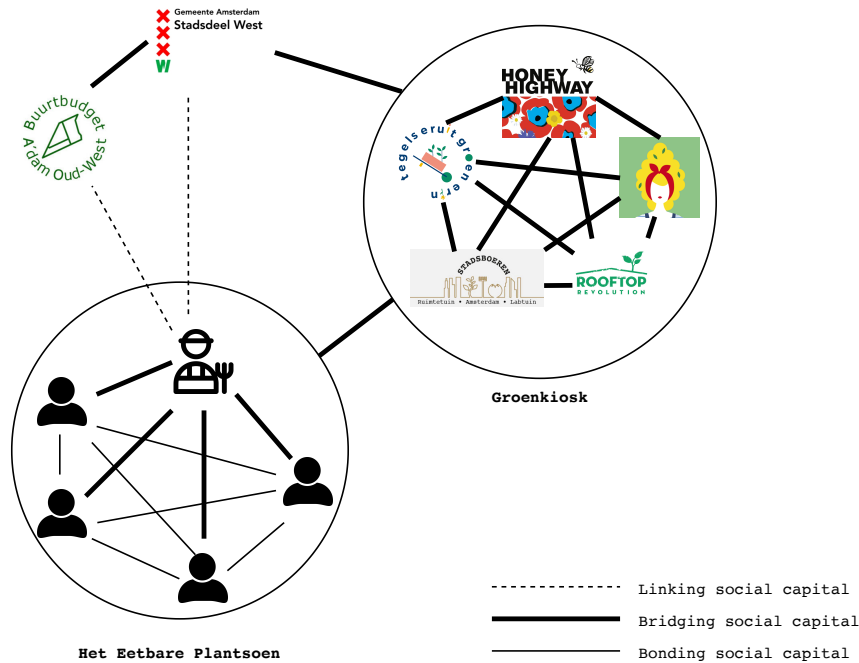

Figure 15. *Relationships developed from Het Eetbare Plantsoen*

5.3. Het Eetbare Plantsoen across Borgerbuurt

The entirety of respondents from the web-based survey appreciate the presence of Het Eetbare Plantsoen in Borgerbuurt. Remarkably, the importance of the social aspects around the initiative were highlighted throughout the whole responds. *Get people out from the house, bring people together, social initiative,* but also *greening the neighbourhood* and *improvement of the physical environment* were the main recurring reactions touched upon the responds. Respondents motivated that they were not participating in the garden activities due to a lack of time, or because they were already gardening in their backyard or for health issues. Interestingly, the only exception was a Turkish lady around the 50's, who liked the initiative, but she is not participating because she prefers to own a private plot, and she does not want to share the produce with others.

5.4. Understanding Borgerbuurt

Nearly the entire of respondents from interviews and surveys, positively associate with Borgerbuurt. Residents appreciate the nearby lively Kinkerstraat, with all the shops, bars, cafes and restaurants. The close distance to Vondelpark, the main park in Amsterdam, was also mentioned. Dentist, health care centre, daily market and public transport were all mentioned by respondents. These topics were, also, touched upon by BOR-P1-24.11.19 that states *I like this neighbourhood because of the shops, Vondelpark and close to the city centre.* Remarkably:

We have the market every day, dentist, doctor, health care centre where over 50 can have lunch once per week for € 5.00, gym, cafes, is quiet, ten minutes bike from the city centre and five minutes from Vondelpark. People here are satisfied. BOR–P8–18.12.19

In accordance, the majority of the web-based survey and the entirety of the gardeners' participants have been living in the neighbourhood in average for more than 20 years, which means since the main redevelopment during the 80s *(see appendix 4)*. Furthermore, their expectation about keep living in the neighbourhood is many years ahead. In fact, BOR–P3–24.11.19 notes *here you can really see people getting older, they have been living here since the 1980s […].* In minor in respect to what stated above, the mixed international community and the quality of schools for children were also mentioned.

However, concern regarding some issues in the neighbourhood were also touched upon. The majority of respondents' complaints were about disrespectful and vandal youngsters and a lack of police control. The need of a place for youngsters where to gather together was mentioned. Interestingly, respondents argued against the increasing numbers of property sold to owners. To stressed more that, BOR–P6–13.12.19 argues *nowadays, many houses are being sold, different sort of people are living here, and there is way less people who wants to be involved in these sort of activities [referring to the CG project].* A minority of complaints were among the increasing amount of tourist that the area attracts, dirtiness in the streets, especially from dogs that owners left behind, and lack of green areas.

Figure 16 and *17*, here below, they respectively, represent part of the children playground next to Het Eetbare Plantsoen and a housing setting in Borgerbuurt.

Figure 16 and 17. Pictures of Borgerbuurt

Figure 18 illustrates through a wordcloud the most used words by residents of Borgerbuurt in describing their concerns.

Figure 18. Wordcloud describing the residents' concerns

6. Discussion

This research was designed and conducted to get a better understanding of the implementation of CGs and to ascertain the aspects that influence the neighbourhood most. This investigation assumed that people develop bonds not only with other people, but also with places. Therefore, in order to answer the research questions, this study aimed to identify the social relationships and network developed from a CG and the sentiment that gardeners and inhabitants of the neighbourhood have in regard to the CG.

The study was drawn upon a qualitative analysis of two projects, differing in the organisation, between individual and communal plots. Results highlighted that, indeed, CG organisation, but also, location and physical characteristics influence the connection of the CG with the neighbourhood. Moreover, results indicated that also neighbourhood characteristics determine the residents' perception of a CG.

This section follows the order of the sub-research questions. Findings will be related to the research objectives and how they connect to ongoing academic debates.

6.1. Which and among whom social relationships have been developed from a community garden since its implementation?

6.1.1. Local organisations and institutions

Results, widely, showed the presence of linking social capital in the CGs network. Local organisations and institutions were essential in the initiation, implementation and sustainment of the CGs in the neighbourhoods throughout the years.

In first instance, the role of public institutions was evident in both of the cases studied. The municipality of Amsterdam yearly allocates a budget to each "Stadsdeel", more precisely these cases involved Stadsdeel West with the initiative named West Begroot. Subsequently, individuals, groups, companies and/or organisations can upload their plan and throughout a voting system a certain amount of budget will be redistributed to the most voted projects ("West Begroot 2020", 2020). Additionally, other smaller budget groups, such as Regiegroep in Borgerbuurt, receive funds from the municipality to be allocated for projects in the respectively areas. This system enhances efficacy of giving economic power to institutions which are closer to the residents and more aware of the issues in the area. In accordance, Curley (2010) suggested strengthening the role of local institutions to link individuals with broader political and economic institutions. Therefore, facilitating the access to funding encourages interest of the public.

In second instance, results of BuurtMoesBinnenTuin identified the collaboration between local organisations and local authorities, such as Cascoland and the

housing association. Results support previous findings by Dekker (2007), who states that local institutions work side by side with other local organisations, by enabling rather than directing.

Related to that, Subramanian et al. (2003) find lower level of trust in local institutions in distressed than in average urban areas. Accordingly, residents of Kolenkitbuurt Noord confirmed this and in order to overcome such lack of trust in institutions, as stated by Ong et al. (2019), local authorities approach social exclusion in the neighbourhood through the implementation of a CG. Interestingly, media analysis and interview with the head gardener showed that also citizens had a role in its implementation. As reported by Dekker (2007), European governments focus their urban policies on these disadvantaged areas by engaging the residents. Accordingly, BuurtMoesBinnenTuin is comprised in the OBAZ program ("Cascoland BuurtMoesBinnenTuin", n.d.). OBAZ program is part of the Big City Policy and it focuses on improving safety, liveability and integration in distressed urban areas (Lelieveldt, 2004). Although, the researcher was not able to discuss with the developer or citizens about their role in the implementation of the CG. Furthermore, this is also the case of the possible future CG in the neighbourhood with the establishment of the project committee, e.g. in paragraph 4.4. This result further supports similar findings by Kleinhans et al. (2007), who see that public investment in physical infrastructure may raise optimism and trust in local institutions.

These results share a number of similarities with Firth's et al. (2011) findings, regarding CGs that require support to be established and sustained. The local governing around CGs appear to be by provision and, mainly through enabling. In the first two instances, the approach of the institution, such as local authorities and housing corporation is governing by enabling, which facilitates other actors at the community level to act for the common good (Bulkeley & Kern, 2006). While, in the third instance, the housing corporation acts by provision, which directly steers, in this case, the implementation of a CG (Bulkeley & Kern, 2006).

6.1.2. Public character

Evident was also the presence of bridging social capital. As reported by Kleinhans et al. (2007), bridging social capital refers to cross-cutting ties, between heterogeneous individuals or indirect acquaintances. Results identified these relationships among the head gardeners and CG members or other residents. In both cases, the head gardeners completed a higher education level and held a large social network. Moreover, in BuurtMoesBinnenTuin, differences were, also, observed in terms of culture and social status.

Therefore, through the relationship with the head gardeners, findings confirmed the positive benefits of creating a socially mixed neighbourhood. Especially in Kolenkitbuurt Noord, where a transformation of the neighbourhood is occurring, results are in accordance with Kleinhans' et al. (2007) and Dekker's (2007)

findings. Accordingly, the renovation of the housing stock seeks to attract middle-class people that will reinforce social networks of current residents by providing a leading example for lower-income households, e.g. in paragraph 4.2.1.

Besides that, the head gardeners can guide the CG members in the gardens activities and provide them with all the tools for gardening. Then, results highlighted the importance of their network and attitude in dealing with institutions for funding and permits. In this vein, the head gardeners felt a sense of responsibility in the neighbourhood and did not limit their network or activities to the CGs but have provided opportunities for a broader audience in the neighbourhood, e.g. in paragraph 4.2.1. and 5.2.2. In this vein, Crawford and Alaimo (2016), refer to bridging social capital, also as connections with residents that can have an influence in the neighbourhood. Hence, the head gardeners were persons that Dolley (2020) would refer to as *'regulars'* that bring people together and contribute to a friendly atmosphere. Additionally, along these lines, the head gardeners were also a public figure in the neighbourhood, who seemed to know everything and everybody (Jacobs, 1961).

Therefore, results identified the head gardeners as an important figure in the CGs and in the neighbourhoods as well. It is evident that they built weak ties in the neighbourhoods, which according to Kleinhans' et al. (2007) findings, they help people to *'get ahead'* through access to opportunities and resources in other social networks than their own.

6.1.3. Neighbours and gardeners

The selection of two CGs diverse in their organisation between communal and individual plots, lead to distinct results.

In first instance, in the CG with individual plots, BuurtMoesBinnenTuin, results underlined that gardeners were driven to cultivate their own products and, with the only exception of the head gardener, mutual help and interest to get to know others were not evident. Therefore, these results are consistent with Veen's et al. (2016) findings, in regard to the attraction of gardeners interested in harvest and cultivation in gardens with individual plots. Although, findings showed some discrepancies with the same, about the willingness to develop social relations in CGs where people are not driven by that. However, in this case the CG was composed mostly by Moroccan and Turkish gardeners. Thus, our findings contradict Dekker (2007) and Christensen et al. (2019), who demonstrated that similar characteristics (income, ethnicity, education and lifestyle) and common traits in the group increase trust and social capital. However, given that these findings are based on a limited number of respondents, the results from such analyses should thus be treated with caution.

While, results from Het Eetbare Plantsoen suggested that CGs can, also, be a consequence of the social capital present in the neighbourhood, e.g. in paragraph 5.2.3. This result confirms previous findings by Comstock et al. (2010), who

underlines how community-based interventions generate collective efficacy, which it refers to trust, mutual help and social connections among residents. Moreover, strong bonds among the group of regular gardeners were revealed. Gardeners, in this case, were a group of native Dutch and women of around 60 years old. Findings confirm previous literature by Okvat and Zautra (2011), who stress the idea of CGs as a bridge for socially isolated people, such as the elderly. Additionally, the organisation in communal plots strengthens social ties and social connection among neighbours, e.g. in paragraph 5.2.3., which eventually extend beyond the garden environment (Glover, 2004). Furthermore, results showed that gardeners were motivated by the social aspects of gardening to participate. This is in complete agreement with Veen's et al. (2016) findings, who detected that gardens with communal plots attract people interested in increasing the bonds in their neighbourhood.

As a result, social bonds developed among gardeners are strongly related to their motivation to participate in the CG activities. In accordance, strong bonds among gardeners were revealed in Het Eetbare Plantsoen rather than BuurtMoesBinnenTuin.

6.2. How do residents perceive the presence of a community garden in their neighbourhood?

6.2.1. Self-identification and social connections

Most remarkable result that emerged from the data is that CGs' configuration reflect the perception of a CG among residents in their respectively neighbourhood. Given that, it should be noted that the neighbourhoods in which the research was undertaken presented distinct socio-demographic situation.

The garden with individual plots was located in Kolenkitbuurt Noord. The neighbourhood is mostly inhabited by Moroccan and Turkish *(see Appendix 3)*. As previously stated, gardeners were interested to grow their own fruits and vegetables. Interestingly, most residents not members of BuurtMoesBinnenTuin were not aware of the presence of the garden in the neighbourhood, due to the fact of physical characteristics that will be later discussed. However, in regard to the option of implementing a new CG in the neighbourhood, residents perceived the CG as a way to provide raw materials for their cuisine and to practice their hobby, e.g. in paragraph 4.3. These results correlated well with Mazumdar and Mazumdar (2012) and further support the desire of maintaining the identity with their home country and the identification in the garden as one of few places in cities where this can be achieved.

In contrast, the garden with communal plots, was located in Borgerbuurt, a neighbourhood with high percentage of native Dutch residents *(see Appendix 4)*. Community gardening for the residents was a place where to gather together, get to know their neighbours and a nice place to relax, e.g. in paragraph 5.2.3. and 5.3. These results confirm previous findings by Firth et al. (2011), who defined

a CG as a meeting place, which enables interactions among people and strengthens social bonds. Additionally, results further support findings by Kleinhans et al. (2007), who highlight that native Dutch are usually in favour of social interactions and familiarity with their neighbourhood.

The researcher found that CGs to be successfully implemented in the neighbourhood should align well with the resident's perception of a CG, which largely depends on residents' physical and social interactions with such places.

6.2.2. *'Club'* and third place

CGs have been addressed as third places by many studies (Glover, 2004; Veen et al., 2016; Christensen et al., 2019). Third places theory was introduced by Oldenburg (1989) and he refers to informal public gathering places between house and work (Oldenburg, 1997). The CGs studied were by selection neighbourhood bound. Therefore, they were maintained and attended by people living in the area where the CG was implemented (Veen et al., 2016). However, the selected CGs presented distinct characteristics, which have differently influenced their spread in the respectively neighbourhoods.

The BuurtMoesBinnenTuin was hidden in a common area of a clustered housing setting. Thus, the location compromised the CG widespread among residents in the neighbourhood. Contrarily, Filkobski, Rofè and Tal (2016), concluded that CGs implemented in response to social and physical stressors should be an engaging place in the neighbourhood. Related to that, commonly CGs aim to create connection and build relationships with other people in the neighbourhood (Glover, 2004), but at the same time they raise fences, install locked gates and adopt key access procedure, e.g. in paragraph 4.1.1. According to van Holstein (2016), this sense of property on one hand can create an inclusive and cohesive group, on the other hand these practices exclude outsiders. Results from BuurtMoesBinnenTuin are in agreement with van Holstein (2016) about the exclusion of visitors and passers-by. Additionally, results further support Dolley (2020), who stressed that to guarantee a neutral ground is often challenging for CGs with physical barriers and membership fees. Accordingly, Oldenburg (1997), by the term neutral ground, refers to be open to all, and everyone is free to come and go without obligations. In the case of BuurtMoesBinnenTuin, with exclusive access, exclusion of outsiders, membership fee and ownership of plots made gardening easier for the members, however, it acts as a third place for gardeners only or, according to Dolley (2020) as a *'club'*.

While, Het Eetbare Plantsoen, located in a public square in Borgerbuurt and delimited only with low fences it guarantees a dialogue with visitors or passers-by and acts as a third place for the neighbourhood. Additionally, with the future implementation of *"De Groenkiosk"*, e.g. in paragraph 5.2.2., previous findings will be further enhanced. Findings concur with that of Mmako et al. (2019) who noted that socio-cultural activities and shared areas in CGs further promote

social cohesion. Furthermore, in this case, results highlighted the importance of being attended by people living in the area, because interactions continue beyond the garden environment, e.g. in paragraph 5.2.3. In this vein, findings are in accordance with Dolley (2020), who noted that walkability allowed for repeated incidental interaction to happen and, by ensuring either physical and social interaction with outsiders, it increases familiarity between people and place.

Though, considering the strong differences of these cases, results were largely as expected. However, location and design characteristics of the CG influence the physical and social interactions that inhabitants have with the place, and therefore affecting the way a CG trickles through to the wider neighbourhood.

6.2.3. Fulfil the neighbourhood's needs

Strikingly, in both neighbourhoods, but foremost in Kolenkitbuurt Noord, where the percentage of youngsters was much higher than Borgerbuurt *(see appendix 3 and 4)*, results highlighted the importance for parents to have a safe place for children to play. Accordingly, lack of green spaces, playground or other places where teenagers could gather were mentioned by residents, e.g. in paragraph 4.3 and 5.4. As proposed by Marcus (2003), children are *"the most environmentally sensitive residents of the cities and towns"* (p.32).

Furthermore, in Marcus' research *"Shared outdoor space and community life"* (2003), the focus was on spaces such as common landscape areas of condominium or clustered housing. Therefore, spaces similar to the courtyard where BuurtMoesBinnenTuin was implemented and likely, also, the future CG part of the renewal plan. Marcus's (2003) findings revealed that such places if they are well understood and carefully designed will mostly be used by children and can be a valid response to the residents' needs, nevertheless, a factor in the choice where to live (Marcus, 2003). Therefore, this study would conflict with the actual and the possible future CG in such places in the neighbourhood. On the contrary, Het Eetbare Plantsoen located in a public square with other facilities at its side, e.g. in paragraph 5.1.2, proved that the coexistence between CG and playgrounds or other facilities for children is possible and fruitful.

Additionally, residents, mostly from Borgerbuurt, pointed out the importance of having different amenities within walking distance. Bars, cafés, restaurants, shops, market and park or green areas were all mentioned. These results justified their attachment to the neighbourhood, e.g. in paragraph 5.4, and are in agreement with Mooney's (2009) and Lewicka's (2011) findings on proximity to local landmarks or facilities as an important predictors of community attachment. In contrast, such results were not revealed in Kolenkitbuurt Noord, where residents were mostly focused on their living condition, e.g. in paragraph 4.4.

Related to that, in Kolenkitbuurt Noord, resident's main concern was the poor situations and what would happen with the renewal plan which was about to be carried out. Accordingly, residents complained about dated, badly maintained and

for some households reduced dimensions of the apartments. Kleinhans et al. (2007) and Dekker (2007) demonstrated that urban policies, that is focused in distressed urban areas, aims to improve the living conditions of the residents and to attract middle-class people to create a more social-mixed neighbourhood throughout the renovation of the housing stocks. In this case, results from Kolenkitbuurt Noord, e.g. in paragraph 6.1.2., proved already the efficacy of this policy and it gives good hopes for the future.

While, residents from Borgerbuurt, in which the urban context and the age of the dwellings were more recent in the years and therefore, better maintained, residents instead, disputed the number of dwellings being sold to the private market. According to them, homeowners do not participate in association or volunteer activities in the neighbourhood. On one hand, results are in contrast with Dekker (2007), who found that homeowners participate more than tenants in neighbourhood activities as a protection of their investment. On the other hand, results further supported Dekker and Bolt (2005), who showed that the creation of a socially mixed neighbourhood did not improve the social cohesion but created social division. Given that these findings are based on a limited number of participants, the results from such analysis should thus be interpreted with caution. However, further research on participation in volunteer activities of newcomers or homeowners in recently renovated neighbourhood is required.

Last remarks, results draw attention to other main concerns among residents of the neighbourhoods where the study was taken. Vandalism, sense of insecurity and dirtiness were revealed, e.g. in paragraph 4.4. and 5.4. These results confirm previous findings by Lelieveldt (2004), who observed similar concerns in social housing settings.

7. Conclusion

In this study a case study approach of two CGs, one with individual plots and the other with communal plots, in two neighbourhoods located in Amsterdam was conducted. The research pursued to give a completer and a more substantial understanding on the impacts of the implementation of a CG on its surrounding area and the associated feeling towards it. In the employed qualitative research, participants observation in the selected CGs, semi-structured interviews and survey, among CG members and people living in the neighbourhoods not involved in the gardening activities, were carried out.

Data analysis clearly showed that public institutions enable the implementation and sustainment of CGs by providing spaces in the neighbourhoods and through grants. Another characteristic, in common with the CGs studied, was the importance of the head gardener. A public figure in the neighbourhood that bridged the gap between CG members and public institutions and spur change in the neighbourhoods. However, results revealed that social relationships developed among gardeners were strongly related to their motivation to participate in the CG activities. Accordingly, the BuurtMoesBinnenTuin attracted people interested in cultivating their own products. In fact, few relations among gardeners were revealed. In contrast, gardeners participating in Het Eetbare Plantsoen are driven by strengthening their social connection in the neighbourhood. Accordingly, strong bonds were observed, and these relationships extended beyond the CG boundaries.

Additionally, findings identified distinct physical characteristics between the selected CGs. The BuurtMoesBinnenTuin was located in Kolenkitbuurt Noord. The neighbourhood is mostly inhabited by Turkish, Syrian and Moroccan people that have a strong cultural background in gardening and they perceive this activity as a way to be connected with their home country. Therefore, the CG located in a common area of a clustered housing setting and accessible only to the 17 owners of the plots through a locked gate matched the interest in gardening and the lifestyle of the community. Though, these courtyards have also been recognised as an optimal area for children to safely play, which was strongly claimed by residents. On the other hand, Het Eetbare Plantsoen was located in Borgerbuurt, a neighbourhood mostly inhabited by native Dutch people. Accordingly, findings revealed that Dutch residents are more inclined to seek social interactions and familiarity with the neighbourhood. Therefore, a CG in which volunteers reunited together to do gardening was in compliance with residents' lifestyle. Additionally, it was located in a public square, with a playground and other facilities which attracted visitors and passers-by as a result of more informal social interactions.

Therefore, this study identified different aspects that influence the spread of a CG in the neighbourhood. Firstly, a public character of the neighbourhood in managing the CG creates the so-called "weak ties" and bridge the gap between residents and local organisations or public authorities, and eventually, provides

new opportunities to the community. Secondly, CGs that engage shared areas further facilitate social interactions with outsiders and create space for other people, such as children or youngster, that are the main users of public spaces. Thirdly, CGs that do not raise physical barriers, such as fences or gates, bring visitors or passers-by as a result of more informal connections among neighbours beyond the garden environment. Therefore, a CG that act comprehensively as a third place rather than interest-based club seems better integrated in the neighbourhood. However, CGs perception and their function in the surrounding area strongly depends on the demography situation and cultural background of the residents in the neighbourhood.

The research fits in the extensive body of literature on CGs and it consists of a first step in bridging the gap between the implementation of a CG and its perception in the surrounding area. Accordingly, different aspects that could influence this relation have been recognised and discussed. Last, the researchers' hope was for this study to provide a well-research advice for urban planners and CGs initiators for future implementations in compliance to the community's needs.

7.1. Limitations and suggestions for further research

The researcher was aware that in the conducted study various limitations and other circumstances might have influenced the findings. The identified limitations will be discussed and suggestions for further research will be given.

To begin with, the selection of the case studies was challenging for the researcher. The main criteria for the CGs to be selected were to be implemented for, at least, a year and the diversity in their organisation, between communal and individual plots. However, in addition to the previously mentioned criteria, the researcher was looking for the assistance of an English speaker referent in the area. In accordance, BuurtMoesBinnenTuin and Het Eetbare Plantsoen were selected. However, the selected CGs presented substantial differences in regard to CG members, configuration and location in the neighbourhood. Additionally, substantial differences in the demography situation and in the maintenance of the dwelling units in the neighbourhood might, also, have influenced the perception of the CG by the residents. Therefore, further research could employ similar analysis among more comparable cases for more significant results and, it would be useful the employment of a behaviour mapping to evaluate and give a visual representation about the engagement of a CG. In this regard, the Municipality of Amsterdam just introduced a new policy aiming to turn the 20% of each allotment parks in public area usable to everyone and to connect the parks with the surrounding neighbourhood ("Implementation strategy Allotment policy", 2020). In Amsterdam there are a large number of allotment parks and they have a long-standing tradition in the city ("Een volkstuin…", n.d.). These allotment parks diversify from CG in sizes and organisation. Allotment parks are, usually, located on the outskirts of the city and composed of large number of private allotment

gardens, in which sometimes is possible to place a house and stay overnight during the summer period ("Een volkstuin...", n.d.). The Municipality of Amsterdam leave to the allotment parks to draw their plans, so that the transformation will fit with the character of the park and the development in the area ("Implementation strategy Allotment policy", 2020). Therefore, further research could explore these plans and investigate their approach to create a connection with the surrounding area. Additionally, it would also be interesting to know the perception of the gardeners to these radical changes.

Secondly, the data collection, as previously mentioned, was conducted during the months of November and December. Undoubtedly, the gardener's participation has been influenced by the period during which the study took place. In BuurtMoesBinnenTuin, seeing that the researcher met only two participants, excluding the garden manager, during the observation period, it can be stated that gardener's participation has been affected the most. This, consequently, influenced the number of respondents in the semi-structured interviews. By contrast, in Het Eetbare Plantsoen, even though participants observation lasted the same amount of time, the researcher had the opportunity to actively work in the garden with a conspicuous number of participants. However, the length of participants observation can be criticised as not lengthy enough.

Thirdly, the researcher carried out a total number of ten interviews with the gardeners, respectively, three in BuurtMoesBinnenTuin and seven in Het Eetbare Plantsoen. Importantly, the sample in qualitative research was not intended to be representative, because the purpose was the analysis of meanings in a specific context (Hay, 2010). However, findings in BuurtMoesBinnenTuin are based on a limited number of participants, therefore substantial results could not be gathered. Additionally, in the same garden, interviews were conducted with the help of the head gardener who translated for the interviewees from English into Dutch. Afterwards, their responses were translated from Dutch into English to the researcher. Throughout this process a possible loss of data needs to be taken into consideration. In Het Eetbare Plantsoen, instead, interviews were conducted in English. However, this meant that the interviews were not held in the native language of both parties, interviewee and interviewer and, inevitably, there were some limitations to communicating effectively.

Then, the door-to-door investigation employed in Kolenkitbuurt Noord, even though a specific list of topics to be discussed were previously outlined, it was extremely open to any inputs coming from the respondents. In all probability, these factors have influenced the questions asked to the respondents, introducing investigator bias in the study. Accordingly, Kumar (2011) states that information obtained from respondents at the beginning of the investigation, may be remarkably different from that gained at the end. Instead, in Borgerbuurt a justification has to be made concerning the selection of participants for the web-based survey. The researcher, in Borgerbuurt, was dependent on the contact referent in the

neighbourhood to get in contact with people not participating in the garden's activities. Therefore, a convenience sampling accessing to the garden's newsletter was applied for their selection. However, Hay (2010) argues its low level of dependability and the poor information are usually linked to its use. Additionally, only the subscribers at the newsletter were taken into account in this survey. As a result, only data of residents who were, somehow, already interested in its activities in the neighbourhood was studied. Given that these findings were based merely on respondents with specific characteristics, a bias need to be considered in the results. Further research, in which language barriers and lack of contacts do not persist, could engage focus groups with a visual approach, of CG experiences, with residents. Accordingly, focus groups have been distinguished as a highly efficient data-gathering-tool for practices of everyday life that provide insights that might not have been revealed through questionnaires (Hay, 2010). Lastly, the using of visual approaches sharpened the informant's memory capturing not only what is there, but also the symbols and meanings of the place (Stedman, 2014).

7.2. Recommendations for management and policy of community gardens

Derived from perceived room for potentials during the research, recommendations will be provided. These recommendations will be directed towards municipal policy or CGs initiators and, at the same time, towards the CGs studied.

Recommendation: *The design and implementation of a CG in a neighbourhood should be a collaborative process*	Even though it is quite demagogic, also the designing process of a CG should act democratically. Therefore, focus groups among the initiators, residents and public authorities should be taken in order to define the purpose of the CG in compliance to the residents' needs and preferences and in line with public authorities' standards. These discussions should, also, consider the opinions of residents of the neighbourhood that are not interested in gardening or that could not join the activities, in order to implement something that would be appreciated by a much broader audience.
Recommendation: *CGs, that due to configuration cannot guarantee a neutral ground to the neighbourhood,*	As previously stated, for CGs with physical barriers and membership fees guarantee a neutral ground to residents of the community is challenging. However, this can be overcome by engaging side activities, for instance consider growing extra produce to give away, and leave it in boxes outside the garden's gate. By doing so, also residents not interested in gardening or that, for other

should engage side activities to involve outsiders.	reason cannot join gardening, positively perceived a CG in the neighbourhood. Although, the functionality of such activity strongly depends on the social behaviour of the community. Mistakenly, additional stressors among the community could be engaged.
Recommendation: *CGs should be multifunctional in order to embrace the needs of different users*	CGs preserve the green areas in more and more densifier cities. Therefore, CGs should be useful for more residents in the neighbourhood, than the CG members only. Above all, space should be reserved for children and youngster that are the most users of public spaces. Accordingly, the Municipality of Amsterdam has just adopted this approach for the allotment parks that should turn the 20% of the area public and usable for everyone ("Implementation strategy Allotment policy", 2020).

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Appendix 1 — Interview protocol

The following show the interview guide for the semi-structured interviews conducted with the garden's participants.

Status of the interviewee	
Neighbourhood	
Community garden	
Date and time	

Beginning of the interview

[Ask for permission to record interview and assure anonymity of interviewee]

[Shortly introduce me and the research]

[Allow participant to ask any questions before beginning the interview]

I. Personal information

1. Name
2. Age
3. Nationality

[part to be asked to the garden manager/contact referent]

4. What can you tell me about the development of the garden?
5. Did the institutions collaborate for the implementation of the garden?
6. How long have you been living in the neighbourhood?
7. How much are you involved in the neighbourhood's life? And how?
8. What can you tell me about the neighbourhood? (Living condition, housing condition, housing association, crime)

II. Experience in the Garden and Neighbourhood

9. How long have you been working in [name of the garden]? How often?
10. Why did you choose to be part of [name of the garden]?
11. What kinds of works do you do in [name of the garden]? How do you usually do them (along / together with other people: who?)?
12. What do you feel about the garden (work or activity, feelings/ a place you are comfortable and confident in / feeling of belonging)?

13. Do you remember any interesting interaction in [name of the garden]? What do you feel about that experience (make you feel part of something)?

14. Are you making new friends in [name of the garden] (co-workers / colleagues / acquaintances / people you know / strangers)?

15. Do you have something in common (nationality / interests / age)?

16. Instead, do you remember any uncomfortable experience / interaction in [name of the garden]?

17. Do you think [name of the garden] have brought you new opportunities in your life in [name of the neighbourhood] (getting to know people from local community / making friends / getting more information for daily life...)?

18. Are you encouraged by the experience in [name of the garden] to participate in other activities in [name of the neighbourhood]?

19. Do you have any other remarks about your experience in [name of the garden] (networks / relationships / aesthetics)?

20. What do you like about living in [name of the neighbourhood]?

[Thank interviewee for taking part in the interview]

Appendix 2 – Codebook

Table 9. Codebook developed by author for data analysis

		Operationalisation
Code(s)	Social capital	Does it refer to any relationships with individuals, group, organisation or public authorities?
	Place attachment	Does it give importance to a place?
Sub–code(s)	Social capital: bonding	Is the relation among gardeners or neighbours?
	Social capital: bridging	Is the relation among gardener and head gardener?
	Social capital: linking	Does the relation involve political or financial institutions?
	Place attachment: self	Does it refer to a specific activity in a place? Does it emotionally refer to a place?
	Place attachment: other	Does it refer to people in regard on a place? Does it refer to interactions in regard on a place?
	Place attachment: environment	Does it refer to a physical characteristic? Does it refer to a specific location?
	Place attachment: shadow	Does it refer to a negative aspect? Does it refer to a request?
Variable(s)	$length of residence	How long has she/he been living there? How long has she/he expected to live there?
	$social ties	Does it refer to friendships? Or social networks? Or bonds among gardeners or neighbours?
	$green areas	Does it refer to parks or green areas? Or lack of green areas?
	$walkable distance amenities	Does it refer to amenities close by? (shops, bars, services)
	$poor living environment	Does it refer to any issue in the apartment? Or in the building? Or in the area?
	$children(s)	Does it refer to a need for children? Does it refer to a place for children to play?
	$vandalism	Does it refer to act of vandalism? Or rubbish

|		
		left behind? Or thieves? Or impoliteness?
	$ethnicity	Does it refer to culture? Or different nationality?
	$social status	Does it refer to a difference in the level of education? Or income?
	$trust	Does it refer to rely on other gardeners, or neighbours, or the head gardener or institutions?
	$information flows	Does it refer to learn something new? Or sharing knowledge? Or giving advice?
	$reciprocity	Do/did they get something back from their action?
	$norms	Are there any common rules? Is this a common rule?
Spatial level	#community garden	Is it referring to the community garden?
	#neighbourhood	Is it referring to the neighbourhood?
Time	/present	Does it refer to something that is happening now?
	/past	Does it refer to something happened in the past?

Appendix 3 — Statistical data of Kolenkitbuurt Noord

NUMBER OF INHABITANTS
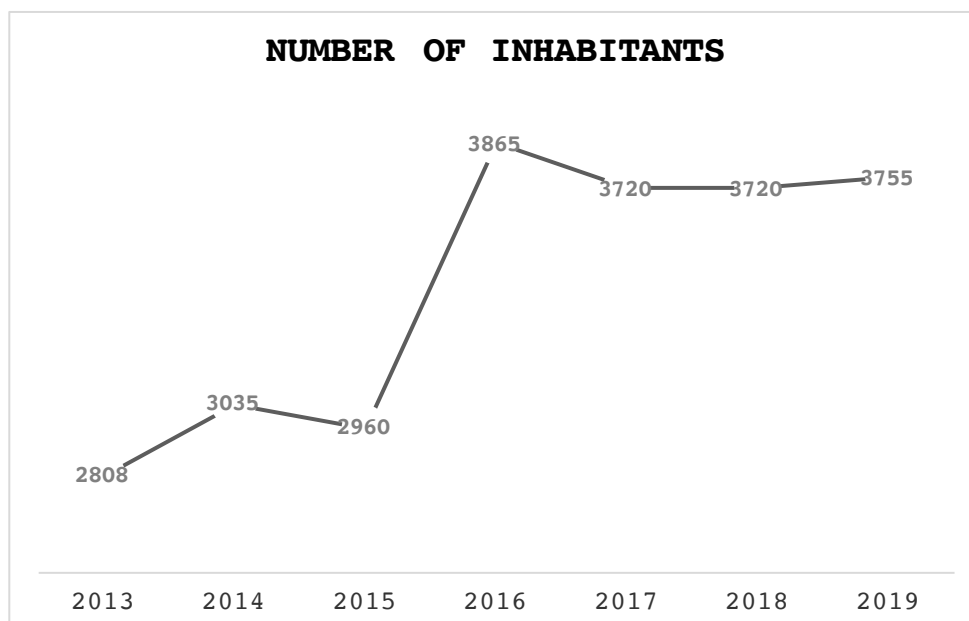
Figure 19. Number of inhabitants per year in Kolenkitbuurt Noord ("Informatie Kolenkitbuurt Noord", 2019) [3]

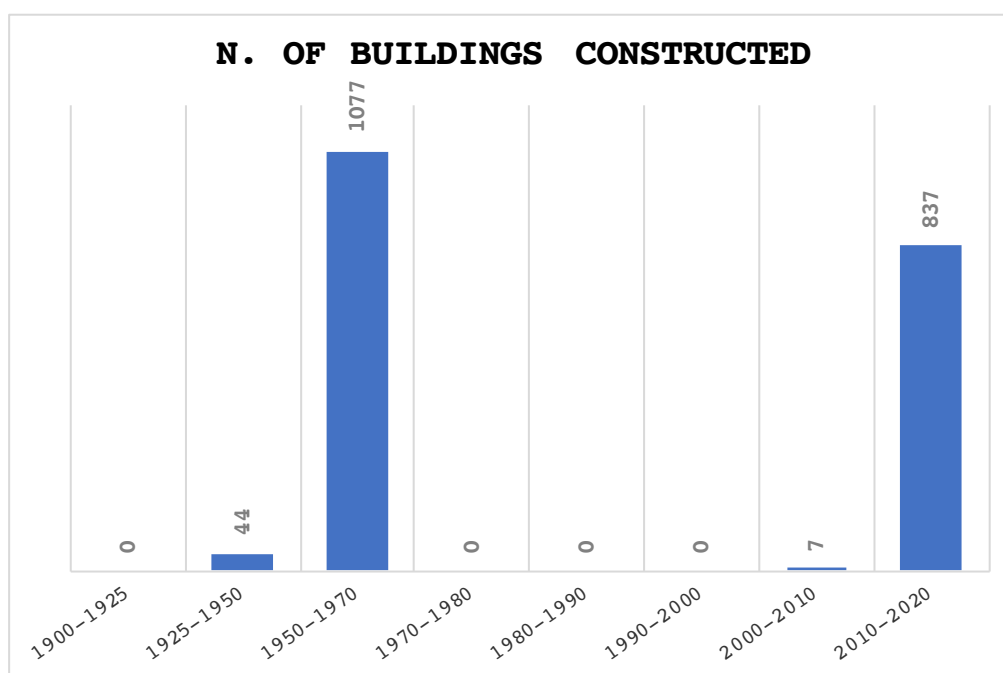
N. OF BUILDINGS CONSTRUCTED

Figure 20. Construction period of buildings in Kolenkitbuurt Noord ("Informatie Kolenkitbuurt Noord", 2019)[4]

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[3] Number of inhabitants as recorded on 1 January in the population register.

[4] Data draw upon the Basisregistratie Adressen en Gebouwen van het Kadaster (BAG), which is the official database of all addresses and buildings in the Netherlands.

AVERAGE INCOME

€14.200,00 — Average income per inhabitants

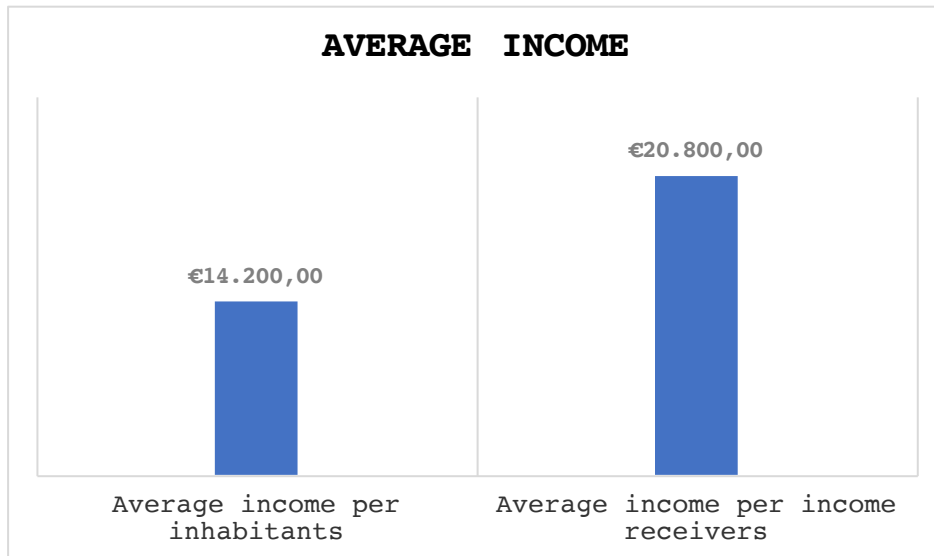€20.800,00 — Average income per income receivers

Figure 21. Clustered column chart showing the average income per inhabitants and per income receivers in Kolenkitbuurt Noord ("Informatie Kolenkitbuurt Noord", 2019)[5]
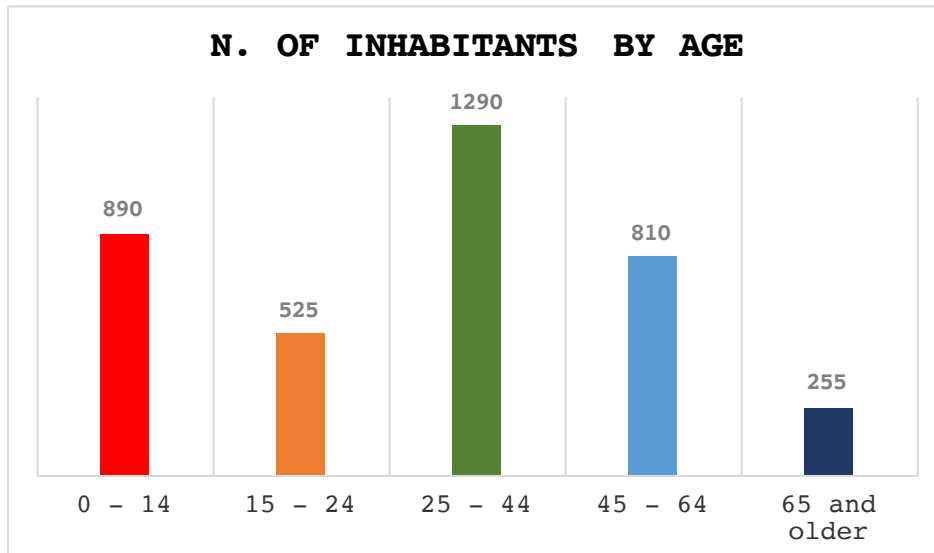

N. OF INHABITANTS BY AGE

0 – 14	15 – 24	25 – 44	45 – 64	65 and older
890	525	1290	810	255

Figure 22. Column chart showing residents by age groups in Kolenkitbuurt Noord ("Informatie Kolenkitbuurt Noord", 2019)[6]

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[5] The first cluster take into account the average personal income per person based on the total population in private households. Instead, the second cluster is calculated from the average income per person based on person with personal income who are part of private households. However, students' households and households with an incomplete annual income are not included.

[6] Population age groups of inhabitants on 1 January 2019.

INHABITANTS COMPOSITION

- ▪ Migration not-western
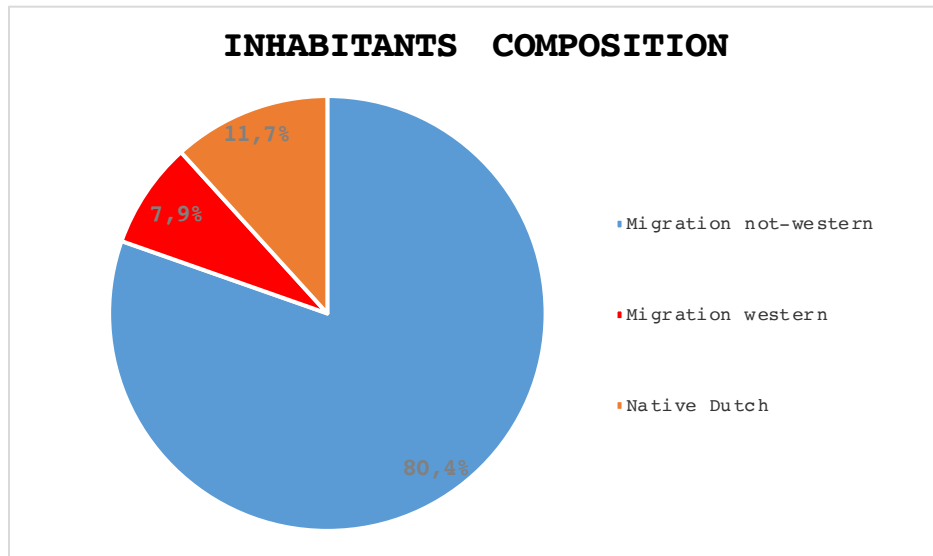- ▪ Migration western
- ▪ Native Dutch

11,7%
7,9%
80,4%

Figure 23. Pie chart diagram with a distribution of the population by native Dutch, and western or non- western countries in Kolenkitbuurt Noord ("Informatie Kolenkitbuurt Noord", 2019)[7]
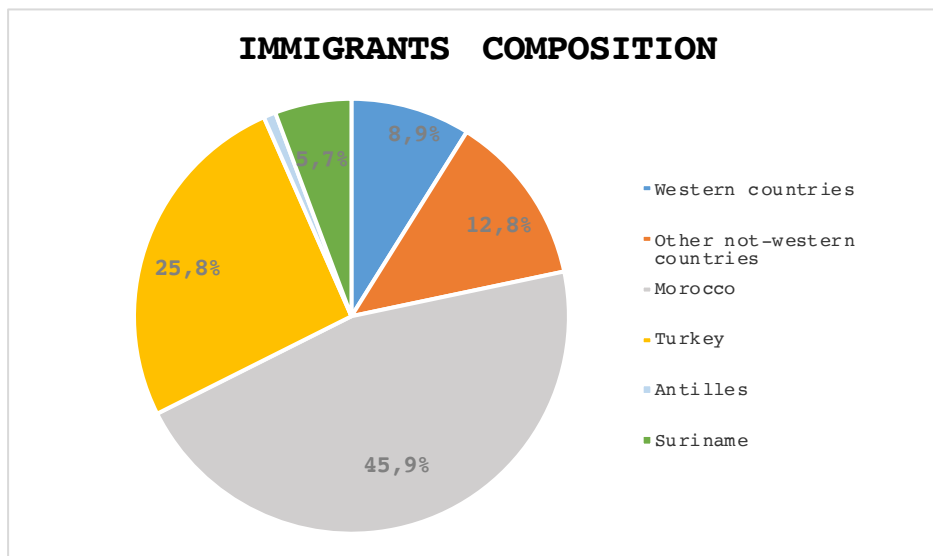

IMMIGRANTS COMPOSITION

- ▪ Western countries
- ▪ Other not-western countries
- ▪ Morocco
- ▪ Turkey
- ▪ Antilles
- ▪ Suriname

8,9%
12,8%
5,7%
25,8%
45,9%

Figure 24. Pie chart showing in percentage the migration background in Kolenkitbuurt Noord ("Informatie Kolenkitbuurt Noord", 2019)[8]

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[7] There are three main migration status: 'native-born with native background'; 'second-generation immigrants' (native-born population with at least one foreign-born parent and 'first-generation immigrants' (foreign-born population).

[8] Immigrants from not Western country have an origin grouping of one of the countries on the continents of Africa, Latin America and Asia (excluding Indonesia and Japan) and Turkey. Immigrants from Western countries have an origin grouping of one of the countries in the continents of Europe (excluding Turkey), North America, Oceania, Indonesia and Japan.

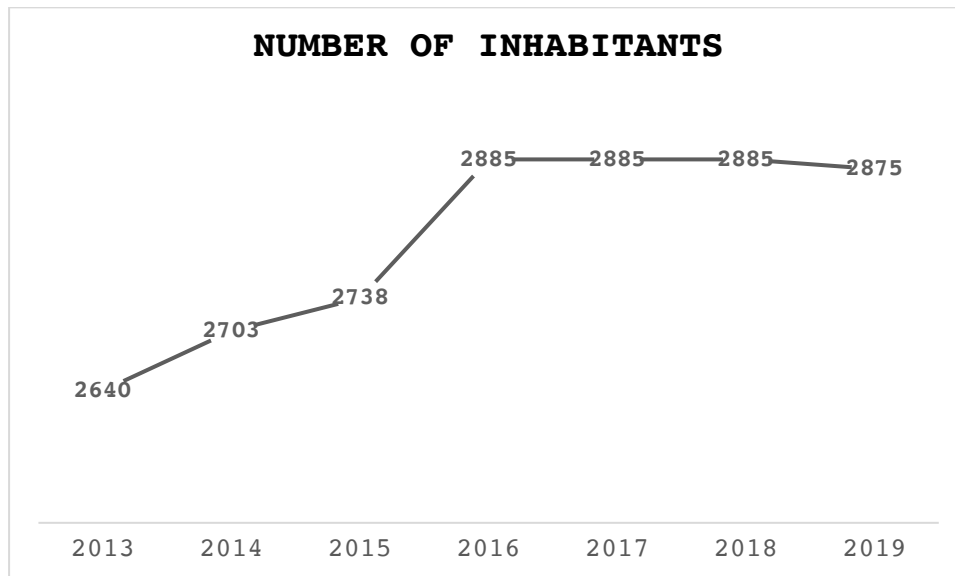# Appendix 4 – Statistical data of Borgerbuurt

NUMBER OF INHABITANTS

2885 — 2885 — 2885 — 2875
2738
2703
2640

2013   2014   2015   2016   2017   2018   2019

Figure 25. Number of inhabitants per year in Borgerbuurt ("Informatie Borgerbuurt", 2019)

N. OF BUILDINGS CONSTRUCTED

1192

210   169   0   17   196   50   0   0

1700–1900 1900–1925 1925–1950 1950–1970 1970–1980 1980–1990 1990–2000 2000–2010 2010–2020
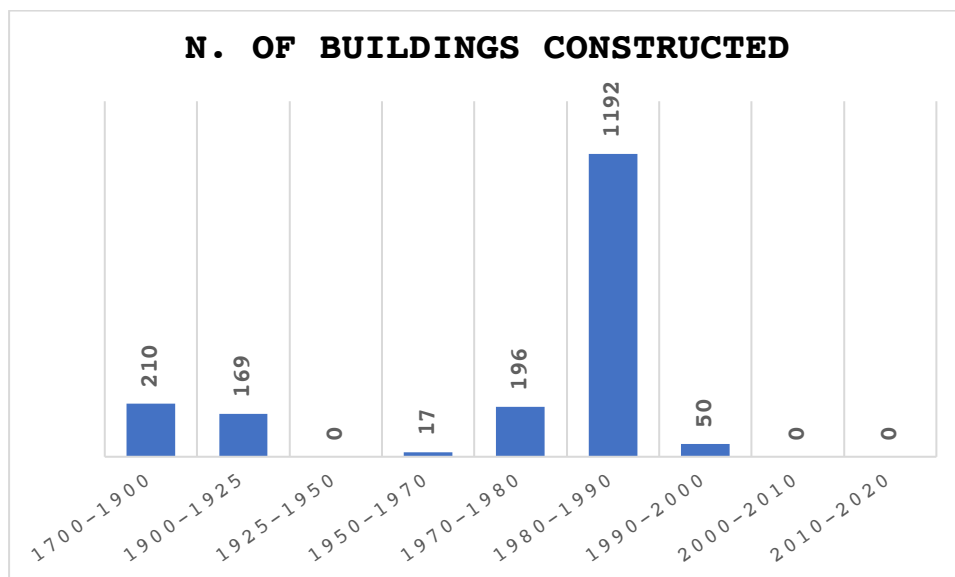
Figure 26. Construction period of buildings in Borgerbuurt ("Informatie Borgerbuurt", 2019)
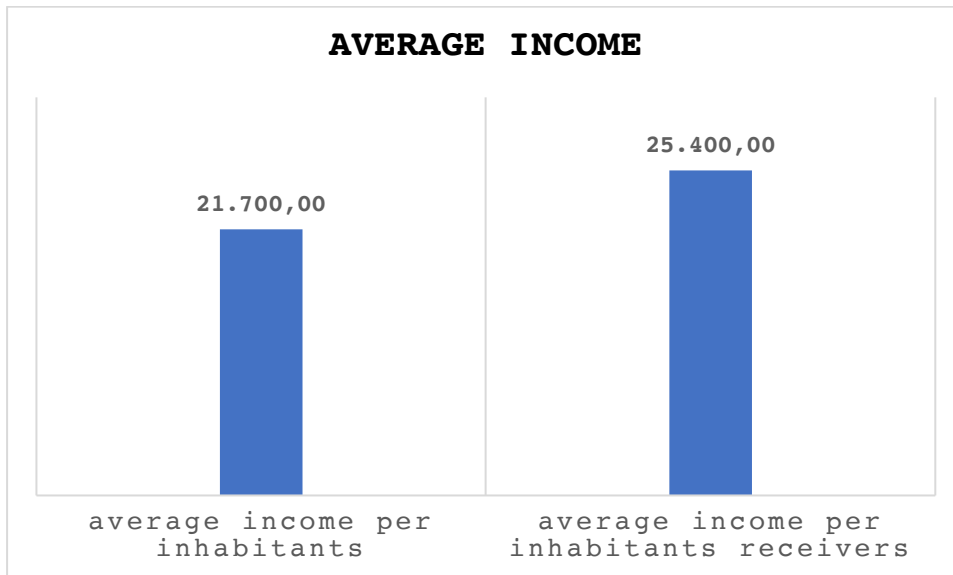
AVERAGE INCOME

Figure 27. Clustered column chart showing the average income per inhabitants and per income receivers in Borgerbuurt ("Informatie Borgerbuurt", 2019)
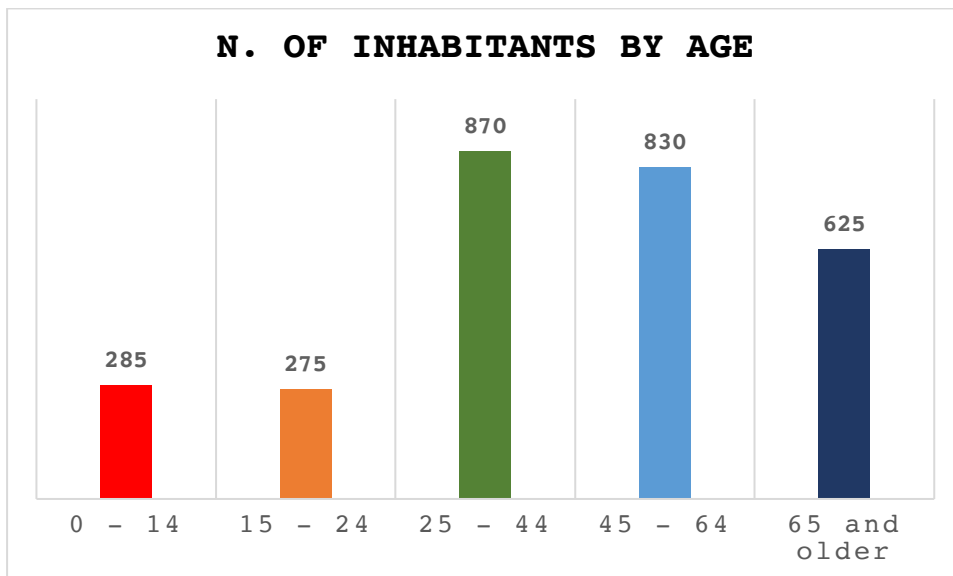

N. OF INHABITANTS BY AGE

Figure 28. Column chart showing residents by age groups in Borgerbuurt ("Informatie Borgerbuurt", 2019)

INHABITANTS COMPOSITION

40,3%   43,0%   16,7%

- Migration not-western
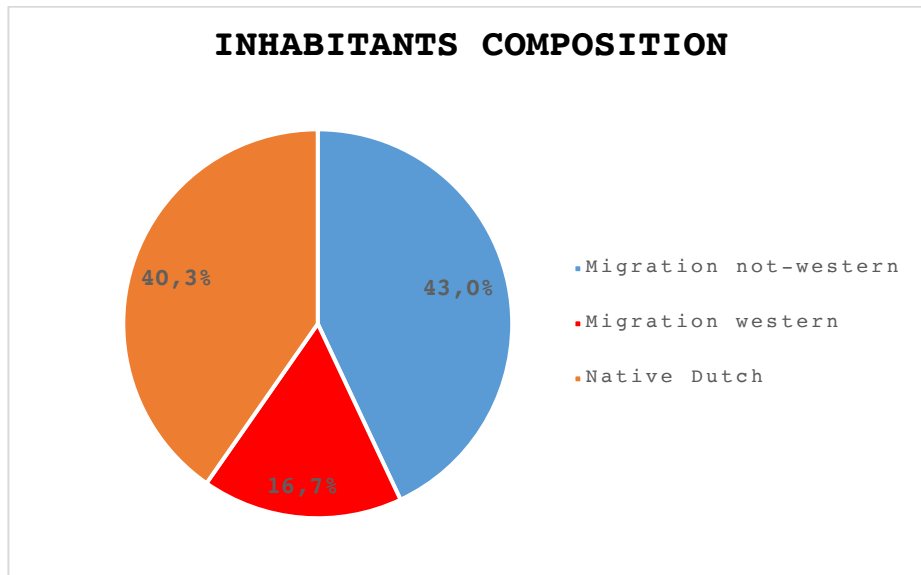- Migration western
- Native Dutch

Figure 29. Pie chart diagram with a distribution of the population by native Dutch, and western or non- western countries in Borgerbuurt ("Informatie Borgerbuurt", 2019)
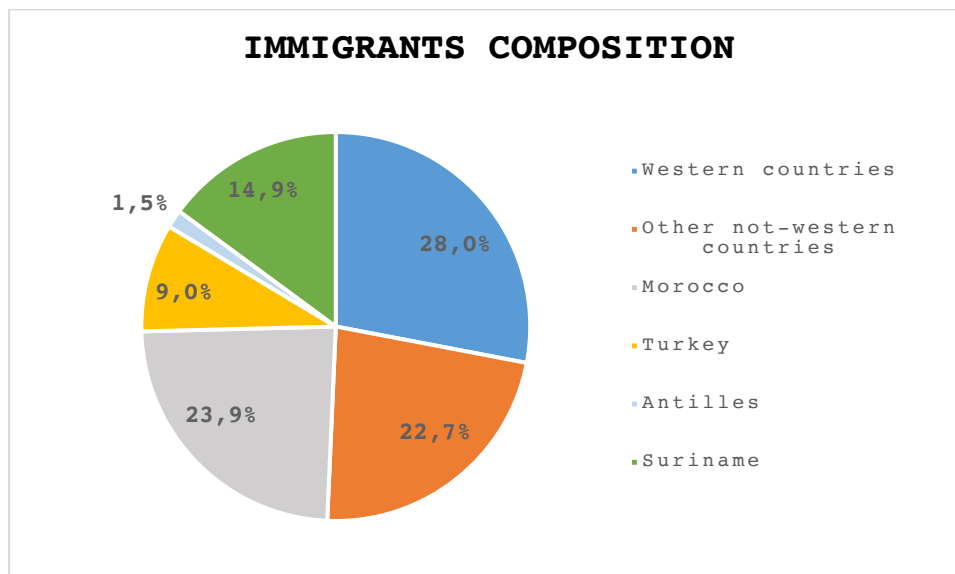

IMMIGRANTS COMPOSITION

1,5%   14,9%   28,0%   9,0%   23,9%   22,7%

- Western countries
- Other not-western countries
- Morocco
- Turkey
- Antilles
- Suriname

Figure 30. Pie chart showing in percentage the migration background in Borgerbuurt ("Informatie Borgerbuurt", 2019)