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“A society characterized by generalized reciprocity is more efficient than a distrustful society, for the same reason that money is more efficient than barter”

(Putnam, 2000, p. 21)

Preface

This masterthesis is the result of an extensive research in the course of the dual study programme Spatial Planning at Radboud University Nijmegen. This research has partly been conducted during a six month internship at Heijmans Real Estate in Rosmalen and Almere. I have investigated whether social capital influences the value of residential real estate, on the basis of recent housing projects in the Netherlands.

I would like to take this opportunity to express my appreciation for the people that contributed to this research.

First of all I would like to thank my thesis supervisor at Radboud University Nijmegen, Tamy Stav, for her great support, kindness, patience and the highly esteemed guidance. Besides her excellent professional expertise, I highly value her motivating skills and inspiring enthusiasm.

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Wouter van Deurzen
Rosmalen, August 2012

Summary

This masterthesis comprises the main arguments of a graduate research on the influence of social capital on the development of residential real estate values in the Netherlands. This research project is part of the dual variant of the Master Spatial Planning at the Radboud University of Nijmegen, specializing in the master track Real Estate and Land Management.

The identifying of the trends that local residents want to grips with their living environment and remove the sense of unpredictability and that consequently residential real estate values could potentially rise, is the starting points of this research. These trends observed are translated into the theoretical concept of 'social capital'. Social capital refers to the degree of trust between people and mutual contacts they maintain, according to one of the numerous definitions. In this study social capital is subdivided into the following three characteristics: the feeling of belonging, the feeling of safety and the social network, all of which are aimed at applying the concept on a neighbourhood level.

The second concept, the positive development of residential real estate values, indicates a larger increase of the value of a property in comparison to similar dwellings. This is measured on the basis of the property value per square meter of floor space. This study answers to the question whether a higher degree of social capital leads to higher property values for housing developments in the Netherlands. This is done by analysing the influence of social capital on the prices of residential properties in four cases in the Netherlands. The assumption here is that a higher degree of social capital leads to a stronger increase in property values of dwellings. Insights from this research may lead to recommendations for future housing developments and further research.

A literature review reveals that much research has been done on safety aspects in addressing the living environment. Recent articles demonstrate that crime rates decline for years in a row and that for fewer people security reasons are decisive in their choice to move. Safety with regard to harsh security measures receives little attention in this study. This research focuses on the (subjective) perception of safety of the neighbourhood by its residents

The study consists of two parts: a theoretical part and practical part. The theoretical part of this research focuses on describing and defining social capital and the developments on the Dutch housing market. In literature there is no unequivocal definition of social capital. Many definitions of social capital consist of variables that are often linked to the degree of mutual trust and social interaction between people. In this study, as previously appointed, social capital is subdivided into 'feeling of belonging to the neighbourhood', 'feeling of safety in the neighbourhood' and 'the social network in the neighbourhood. These characteristics of social capital are derived from the Netherlands Housing Research survey 2009, the latest edition of this research upon commencement of this study. In the theoretical part, the developments of the Dutch house prices are analysed. The "Herengracht Index" of Eichholz explains the recent increase of residential real estate

prices on the Dutch housing market. Such an increase has not occurred previously since the beginning of the measurement at the beginning of the 17th century.

For the practical part of this study an empirical research is conducted, using a multiple case study together with a survey. Part of this empirical research includes the measurement of the level of social capital in four case study areas, as well as the analysis of recent development of residential property values inside these areas. The selection of the four research areas is made in consultation with and by consulting various stakeholders from Heijmans Property Development and Proper-Stok. In addition, relevant literature has been consulted to arrive at the choice of the following four research areas; Het Funen (Amsterdam), De Haverleij ('s-Hertogenbosch), Meer en Oever (Amsterdam) and Chassé Park (Breda).

This particular research method was determined because of the presence of the raw data of the housing module of the Netherlands Housing Research 2009 survey. This housing research was conducted by Statistics Netherlands (CBS) on behalf of and in consultation with the former Ministry of Housing, Spatial Planning and Environment. In this survey, more than 40,000 households were asked for example of what they think of their living environment. Based on the raw data from this study the three characteristics of social capital were operationalized and also the questionnaire was designed for the additional survey plotted in the selected areas. The answers from the Netherlands Housing Research are then compared to the responses of the survey plotted. On the basis of which, the level of social capital in the four research areas can be compared to the four-digit postcode areas to which each research area belongs to.

In order to determine the development of residential property values in the four selected neighbourhoods, real estate agents involved at the time of completion of the four projects were approached. With the help of these real estate agents the required data has been obtained by means of determining the development of property values. A formula was used translating transaction figures of existing owner-occupied dwellings sold in recent years into a transaction price per square meter of floor space. This measuring unit has been used to compare property values, to the extent possible, by means of other reference houses in the immediate vicinity of the research areas. In some cases, these reference properties have been determined in consultation with the real estate agencies involved and in other cases on the basis of similar types of dwellings and similar location characteristics.

By using the data above, statistical analyses were executed to assess discrepancies in the degree of social capital relative to the development of residential real estate values. This demonstrates that the degree of social capital in Het Funen and Chassé Park are significantly higher when compared to the level of social capital in the four-digit postcode areas to which they belong. Interestingly, the differences in "the social network in the neighbourhood" and "the extent to which residents experience nuisances" varies considerably between the research areas and the greater postcode area areas. In Meer and Oever and its comprehensive area no significant differences were observed. In the case of De Haverleij there was insufficient data available on the basis of the Netherlands Housing Research, to make a comparison with the four-digit postcode area. The degree of social capital was highest in De Haverleij, followed by Het Funen and Chassé Park and finally with a significantly lower score Meer en Oever.

On the basis of analysing discrepancies between the developments of residential real estate values only in Meer en Oever property values have increased more, compared to selected reference dwellings in the immediate surroundings. The development of residential property values in the other three research areas is similar to the reference dwellings to which the houses sold in the four neighbourhoods were tested.

The results of this study are not consistent with the earlier assumption that a higher degree of social capital leads to a higher increase of residential property values in the areas examined. The analyses and results of this study provide more insight into the influence of social capital on the living environment and gives directions to future research. Based on the results of this study, it could be suggested that higher levels of social capital have a positive effect, such as with regard to a decrease of maintenance and management costs of the living environment. This is evident on the basis of the lower level of inconvenience experienced by the residents in areas with higher levels of social capital. This is also evident, since the sense of a shared responsibility for the neighbourhood is higher within a neighbourhood with a higher level of social capital. This is not only beneficial for the residents of the neighbourhood and the municipality, but also for institutions with a property portfolio, such as housing associations and (institutional) investors.

The fact that this study has not revealed a positive correlation between social capital and its assumed positive effects on the value of residential properties, does not rule out that there is no possible link between the two. The studying of the influence of social capital on property values is very complex, because of the many factors that affect the development of the value of residential real estate. It is not excluded in this study that the benefits arising from higher levels of social capital have spill over effects on a greater geographical area. In that case, the benefits are not just limited to a single neighbourhood. The findings from this study provide clues for further research and give direction to new spatial developments in practice.

Summary (Dutch)

Deze masterscriptie bevat de hoofdpunten van een afstudeeronderzoek naar de invloed van sociaal kapitaal op de waardeontwikkeling van woningen in Nederland. Dit afstudeeronderzoek maakt onderdeel uit van de duale master Planologie aan de Radboud Universiteit Nijmegen met als verdiepingsspoor Vastgoed en Grondmanagement.

Als startpunt van dit onderzoek geldt het signaleren van de trends dat buurtbewoners op zoek zijn naar het vergroten van de grip op de woonomgeving en het wegnemen van het gevoel van onvoorspelbaarheid en de mogelijk positieve waardeontwikkelingen die hieraan kunnen worden ontleend. Deze waargenomen trends zijn in dit onderzoek vertaald naar het theoretische begrip ‘sociaal kapitaal’. Sociaal kapitaal heeft betrekking op de mate van vertrouwen tussen mensen en de onderlinge contacten die zij onderhouden. In dit onderzoek wordt sociaal kapitaal onderverdeeld in de volgende drie kenmerken; de mate van verbondenheid-, het gevoel van veiligheid- en het sociale netwerk in de buurt.

Het tweede begrip ‘positieve waardeontwikkeling’ duidt op een sterkere toename van de woningwaarde ten opzichte van vergelijkbare woningen, gemeten aan de hand van de woningwaarde per vierkante meter woonoppervlakte. Dit onderzoek geeft antwoord op de vraag in hoeverre een hogere mate van ‘sociaal kapitaal’ leidt tot hogere vastgoedwaarden bij woningbouwontwikkelingen in Nederland. Dit wordt gedaan door het analyseren van de invloed van ‘sociaal kapitaal’ op de woningprijzen in vier casussen in Nederland. De aanname hierbij is dat een hogere mate van sociaal kapitaal leidt tot een sterkere toename van de vastgoedwaarde van woningen. Inzichten uit dit onderzoek kunnen leiden tot aanbevelingen voor toekomstige woningbouwontwikkelingen en vervolgonderzoek.

Uit een literatuurstudie is gebleken dat er al veel onderzoek is gedaan naar veiligheidsaspecten in relatie tot de woonomgeving. Recente artikelen tonen aan dat criminaliteitscijfers al jaren op rij afnemen en dat veiligheidsoverwegingen voor steeds minder mensen een rol spelen in de keuze om te verhuizen. Veiligheid in de harde zin van het woord speelt daarom een minimale rol in dit onderzoek. Dit onderzoek is gericht op de (subjectieve) veiligheidsbeleving van mensen van de woonomgeving.

Het onderzoek bestaat uit twee delen, een theoretisch deel en een praktijkdeel. In het theoretische deel van dit onderzoek wordt nagegaan wat sociaal kapitaal is en worden de ontwikkelingen op de Nederlandse woningmarkt uiteen gezet. Er zijn in de literatuur verschillende definities van sociaal kapitaal te vinden. Variabelen die binnen deze definities vaak aan sociaal kapitaal worden gekoppeld zijn de mate van onderling vertrouwen en de sociale interactie tussen mensen. In dit onderzoek is, zoals eerder benoemd, gekozen om sociaal kapitaal onder te verdelen in ‘verbondenheid met de buurt’, ‘gevoel van veiligheid in de buurt’ en ‘het sociale netwerk in de buurt’. Deze kenmerken van sociaal kapitaal zijn een afgeleide van het woononderzoek 2009, het meest recente woononderzoek bij de start van dit onderzoek. In het theoretische deel worden ook

de ontwikkelingen van de Nederlandse woningprijzen geanalyseerd. In de 'Herengrachtindex' van Eichholz valt de recente prijsstijging op de Nederlandse woningmarkt op. Een dergelijke stijging heeft zich niet eerder voorgedaan sinds het begin van de meting aan het begin van de 17^e eeuw.

Voor het praktijkdeel van dit onderzoek is gekozen voor een multi-pele casestudy in combinatie met een survey. Onderdeel van dit empirisch deel omvat het meten van de mate van sociaal kapitaal in vier casestudy-gebieden, evenals het analyseren van recente waardeontwikkelingen binnen deze gebieden. De selectie van de vier onderzoeksgebieden is gemaakt in samenspraak met- en door het consulteren van diverse betrokkenen vanuit Heijmans Vastgoed en Proper-Stok. Daarnaast is relevante literatuur geraadpleegd om te komen tot de keuze voor de volgende vier onderzoeksgebieden; Het Funen (Amsterdam), De Haverleij ('s-Hertogenbosch), Meer en Oever (Amsterdam) en Chassé Park (Breda).

De keuze voor de gekozen onderzoeksmethode is bepaald door de aanwezigheid van de ruwe data van de woningmarktmodule van het WoonOnderzoek 2009. Dit woononderzoek is uitgevoerd door het Centraal Bureau van de Statistiek in opdracht- en in samenspraak met het voormalig Ministerie van Volkshuisvesting, Ruimte Ordening en Milieu. In dit onderzoek is aan meer dan 40.000 huishoudens gevraagd wat zij bijvoorbeeld van hun woonomgeving vinden. Op basis van de ruwe data van dit onderzoek zijn enerzijds de eerdergenoemde drie kenmerken van sociaal kapitaal geoperationaliseerd en anderzijds de vragen opgesteld voor een aanvullende survey in de geselecteerde gebieden. De antwoorden uit het WoonOnderzoek zijn vergeleken met de antwoorden van de survey. Aan de hand daarvan is bepaald wat de mate van sociaal kapitaal is per onderzoeksgebied ten opzichte van het viercijferig postcode gebied waarvan het deel uitmaakt.

Om de waardeontwikkeling in de vier onderzoeksgebieden te bepalen zijn de toenmalige projectmakelaars benaderd. Met behulp van deze makelaars is de waardeontwikkeling bepaald door middel van de transactiecijfers van verkochte, bestaande woningen van de afgelopen jaren te vertalen naar een transactieprijs per vierkante meter woonoppervlakte. Deze waardeontwikkeling is voor zover dit mogelijk was afgezet tegen referentiewoningen in de directe omgeving van de onderzoeksgebieden. In sommige gevallen zijn deze referentiewoningen bepaald in samenspraak met de betrokken makelaars en in andere gevallen op basis van gelijke woning- en locatienkenmerken.

Met behulp van bovenstaande gegevens zijn statistische analyses uitgevoerd om verschillen in de mate van sociaal kapitaal en waardeontwikkeling te bepalen. Hieruit blijkt dat de mate van sociaal kapitaal in Het Funen en Chassé Park significant hoger is dan in vergelijking met het niveau in de viercijferige postcodegebieden waarvan zij deel uitmaken. Opvallend zijn de verschillen in 'het sociale netwerk in de buurt' en 'de mate waarin bewoners overlast ervaren' tussen de onderzoeksgebieden en de viercijferige postcodegebieden. Tussen Meer en Oever en het postcodegebied is geen significant verschil waarneembaar. In het geval van De Haverleij was er onvoldoende data beschikbaar vanuit het WoonOnderzoek om een vergelijking te maken met het viercijferig postcode gebied. De mate van sociaal kapitaal was het hoogste in De Haverleij, gevolgd door Het Funen, Chassé Park en met een aanmerkelijk lagere score tenslotte Meer en Oever.

Op basis van het vergelijken van de waardeontwikkelingen is er enkel in Meer en Oever een hogere waardeontwikkeling gemeten, ten opzichte van de directe omgeving. De waardeontwikkelingen in de overige drie onderzoeksgebieden is vergelijkbaar met de referentiewoningen waaraan deze gebieden getoetst zijn.

De resultaten van dit onderzoek stroken niet met de eerdere aanname dat een hogere mate van sociaal kapitaal leidt tot een hogere waardeontwikkeling in het betreffende gebied. De analyses in dit onderzoek bieden meer inzicht in de invloed van sociaal kapitaal op de woonomgeving en geven richting aan vervolgonderzoek. Op basis van de uitkomsten van dit onderzoek zou kunnen worden gesuggereerd dat een hogere mate van sociaal kapitaal bijvoorbeeld een gunstige uitwerking heeft op de onderhouds- en beheerskosten van de woonomgeving. Dit blijkt uit de lagere mate van overlast die de bewoners ervaren in de gebieden met een hogere mate van sociaal kapitaal. Ook blijkt dit uit het grotere gevoel van gedeelde verantwoordelijkheid dat hier volgens de bewoners aanwezig is. Dit biedt niet alleen voordelen voor de bewoners en de gemeente, maar ook voor partijen met een woningportefeuille als woningcorporaties en institutionele beleggers.

Het feit dat er in dit onderzoek geen positief verband is gevonden tussen sociaal kapitaal en waardeontwikkeling sluit een mogelijk verband niet per definitie uit. Het nagaan van de invloed van sociaal kapitaal op waardeontwikkeling is zeer complex, vanwege de vele factoren die van invloed zijn op de waardeontwikkeling. Daarbij is in dit onderzoek niet uitgesloten dat de voordelen, die voortvloeien uit een hogere mate van sociaal kapitaal, een groter positief ruimtelijk effect hebben. In dat geval zijn de voordelen niet gegrensd tot het betreffende project. De bevindingen uit dit onderzoek bieden aanknopingspunten voor verder onderzoek en geven richting aan nieuwe ruimtelijk ontwikkelingen in de praktijk.

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Part 1: Theoretical part

1. Introduction

1.1 Developments in housing preferences

The Dutch housing market has been in the centre of attention for the last couple of years, mostly as a result of the credit crunch. A so-called 'bubble' on the Dutch housing market, as was predicted by the IMF among others, has failed to materialize for now (International_Monetary_Fund, 2008). What makes the Dutch housing market different from for example the Spanish or American housing market is a supposed housing shortage (Schinkel, 2009). Prior to the credit crunch, there was said to be a quantitative housing shortage, while nowadays there is said to be a qualitative housing shortage on the Dutch housing market (ABF_Research, 2007). This is expressed by means of a discrepancy in supply and demand on the Dutch housing market. Still, the Dutch housing market didn't go unscathed throughout the credit crunch and has stalled since. In the current political debate various reforms on the Dutch housing market are discussed, in which for example the current interest for mortgage that is deductible is no longer a taboo (Boelhouwer, 2012). A major issue on the current housing market is the lack of movement on the Dutch housing ladder. As a result, real estate development companies are having problems finding buyers for their newly constructed homes. For companies on the supply side of the housing market it is therefore important to introduce sound housing concepts to the market, which conform to market demand.

Heijmans S.A./N.V., a Dutch listed company that specialises in residential building among others, noticed last year a trend on the Dutch housing market in which people are seeking higher levels of solidarity and safety within their neighbourhood (personal communication). Across the world there are many neighbourhoods that in a way conform to this trend, among which many so-called 'gated-communities', which possess extra security measures (Bijlsma, Galle, & Tennekes, 2010). Similar developments more and more appear in the Netherlands, in which communities are 'shielded' from their direct environment. A frequently cited example in the Netherlands is 'De Haverleij' adjacent to the city of 's-Hertogenbosch, which is characterized by several 'private' residential communities, which are actually not totally cut off. What strikes 'De Haverleij' is the fact that high levels of solidarity within the community can be perceived. A local visit shows there is lots of interaction among inhabitants and children, perhaps related to its design. Therefore it offers its inhabitants more than just a higher level of safety. Whereas many gated communities abroad are known for their closed perimeter of walls or fences, private residential communities in the Netherlands are often limited to subtle physical interventions. Instead of a lockable gate it is more likely to come across a barrier such as low stairs, a small strip of water or a hedgerow. It mainly concerns the removal of the sense of unpredictability in a residential area and not so much about increasing the level of physical safety. Several studies suggest safety is becoming less of an issue for Dutch inhabitants (Bijlsma, et al., 2010). In the Netherlands Housing Research 2007 fewer respondents indicate insecurity as a reason to move. Hamers et al. in 2007 suggest that safety considerations play a minor role, based on the relatively small barriers as ditches and low stairs, which are

common in the Netherlands (Hamers, Kersten, Schluchter, & Middelkoop, 2007). The demand for private residential communities cannot be answered using the safety discourse. Residents want to grips with their living environment, including the removal of the sense of unpredictability (Bijlsma, et al., 2010). They prefer a base level of solidarity, feeling secure and social network within their residential community (VROM-council, 2009). Simultaneously they don't necessarily feel the urge to create a close-knit community (Hamers, et al., 2007). This desire among residents to remove the sense of unpredictability can be derived to socio-cultural developments in the Netherlands. Therefore the socio-cultural developments on the Dutch housing market will be discussed in chapter two.

Table 1 and Table 2 below reveal two important developments on the Dutch housing market. Whereas the number of homes sold and the number of advertised homes for a long time both showed an upward movement, this trend is broken by the advent of the credit crunch and the Eurozone crisis. Although the number of advertised homes has shown a steady increase, Table 2, the number of dwellings sold has stalled since. Appendix 1 reveals more detailed data on the Dutch housing market, which originates from an analysis of the Dutch Association of Real Estate Brokers and Real Estate Experts.

Table 1: Number of dwellings sold in the Netherlands 1995-2012

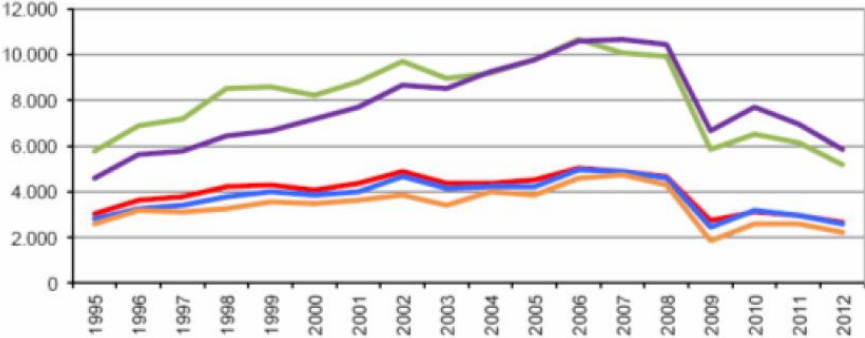
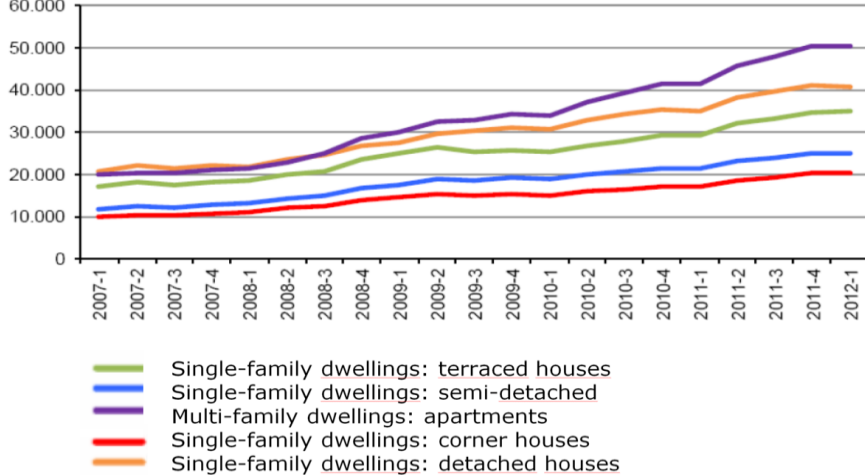


Table 2: Quarterly supply of homes for sale



(NVM, 2012)

The deterioration of market conditions on the Dutch housing market made it necessary to conduct a research. More than ever, it appears necessary to listen carefully to the wishes of potential homebuyers. The number of persons working in the construction business in the Netherlands was 506,000 in 2008. A recent prognosis by TNO, an independent research organisation, indicates that under current conditions only 466,000 persons will be working in construction by 2013. The increase of self-employed workers in construction is marginal. All in all this results in a decreasing labour force by almost 40,000 people (TNO, 2011). A better understanding of housing preferences can therefore potentially result in the preservation of jobs and can better reflect the demand of future homebuyers. Findings from other studies and articles, some of which have already been listed, give rise to explore the social aspects of the neighbourhood.

Findings by The Netherlands Institute for Social Research (SCP) in 2011 also complement this. Moreover, Dutch inhabitants seem to highly value a strong social network. Only surpassed by the Danes, the Dutch have the majority of member associations and the most social contacts. In proportion to other European inhabitants, the Dutch have the most members on LinkedIn, a social network website for professionals. At the same time the inhabitants in the Netherlands are becoming more socially isolated (Bijl, Boelhouwer, Cloin, & Pommer, 2011).

After an intensive literature review a suspicion has been aroused that the Dutch housing market could benefit from certain positive effects that could be attributed to the social composition of a neighbourhood. Features like a higher level of 'feeling secure,' 'solidarity' and social network can be linked to the theoretical concept of 'social capital' in scientific literature. Since this concept will need further explanation, a section in chapter three is dedicated to this concept. This particular concept lends itself to this exploratory study in which a link is established between housing preferences of home buyers on the one hand and the current decline in demand for residential real estate on the other hand. It is assumed that higher levels of these features may lead to higher residential real estate values in residential real estate development (personal communication). Since the Dutch housing market all in all is very complex, this study will mainly focus on its attributes in relation to the residential real estate values in the Netherlands.

1.2 Research goal

The research goal is as follows: "Investigate whether a higher level of 'social capital' will lead to higher levels of residential real estate values of Dutch residential real estate, by analysing the influence of 'social capital' on residential real estate prices within the Netherlands". Within this supposed causality, 'social capital' is the independent variable. The 'value of residential real estate' is the dependent variable. Based on an extensive review of the literature the assumption can be derived that a higher level of 'social capital' will lead to an increase of the value of residential real estate. The main goal of this research is to investigate whether proof can be found for this assumption.

1.3 Societal & Scientific Relevance

Studying the influence of the level of 'social capital' on residential real estate values is societal and scientific relevant. It is societal relevant, because of recent developments on the housing market. For some decades now there has been a quantitative housing deficit in the Netherlands. Nowadays there is a shift towards a more qualitative approach of the Dutch housing deficit. This research is in line with this trend by means of approaching residential areas in a qualitative way. It mainly focuses on the level of 'social capital'. Several authors quoted above have mentioned that there is a need for some basic social values in Dutch neighbourhoods. People do not only want to feel safe and secure in their neighbourhood, but also want to feel familiar with their living environment and its inhabitants. This kind of approach is rare in existing academic literature. Previous studies have mostly been limited to examining neighbourhoods suffering from social problems. The interest for these studies came primarily from organizations such as housing associations. The current developments on the Dutch housing market raises attention from other actors such as residential real estate developers. There has been an increasing degree of interest to meet with the recent qualitative demand on the housing market. This study contributes to this understanding and could have practical implications as well. It may lead to recommendations for future residential real estate development and provide guidance to raise levels of social capital in future residential real estate development.

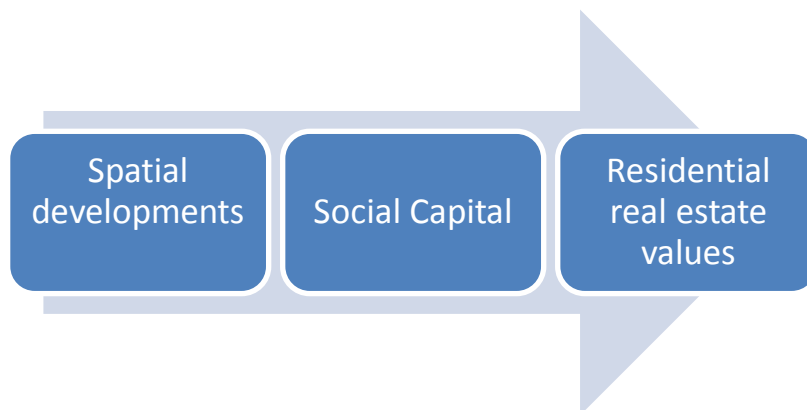
The scientific relevance for this research on residential real estate development stems from the little research which has been done so far on the influence of 'social capital' as a derivative value on Dutch residential real estate prices. In fact it contributes to the little research which has been done for so far with respect to the entire topic of 'social capital' on the Dutch housing market. Although, the last couple of years the amount of research on the concept of 'social capital' has increased. However, empirical research on the concept of 'social capital' is rare (Beugelsdijk & Schaik, 2005). This research will increase understanding of the influence of the concept of 'social capital' on Dutch residential real estate values and it complements the limited amount of research done on this concept in the Netherlands.

1.4 Research model

The research model will consist of an analysis of the influence of 'social capital' on residential real estate values within the Netherlands. This research is twofold. For one part the concept of 'social capital' is operationalized. For the other part its influence on residential real estate values in the Netherlands is determined. This will be based upon empirical research on existing residential real estate projects.

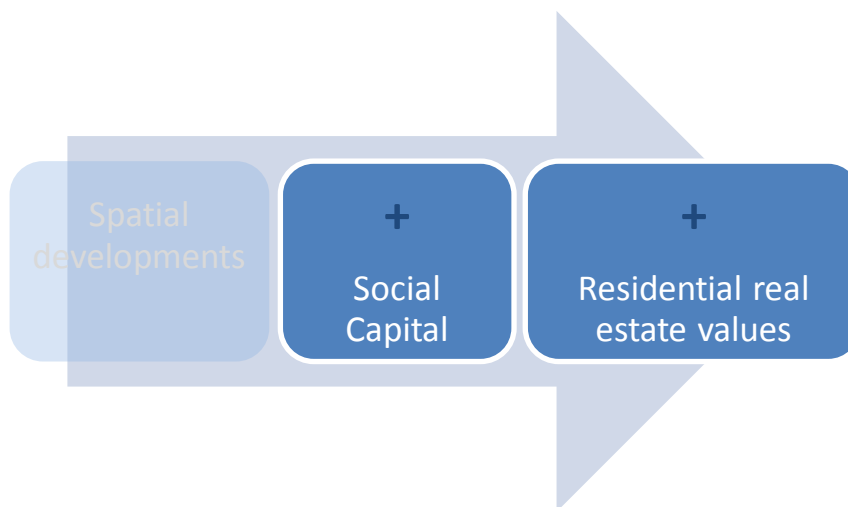
Figure 1 shows a research model based upon the research goal above. This model includes the exogenous variable 'spatial development(s)', which influences the level of 'social capital' within a certain area. The level of the endogenous variable 'social capital' may influence residential real estate values within this area. Although this research will focus on the last two blocks of the model below, the potential influence of spatial developments on social capital should not be overlooked. The effects of an urban design on a neighbourhood's social structure will make an interesting research topic, but won't fit in the time scheme of this particular research project.

Figure 1: Research model



Assuming that spatial development influences the level of 'social capital', one cannot determine 'social capital' will influence 'residential real estate values'. So far, an extensive literature review has not revealed any evidence for this hypothesis. Therefore this research will aim at the second part of this model. This can be seen in Figure 2 beneath. In accordance with the research goal the influence of the level of 'social capital' on residential real estate values will be determined.

Figure 2: Redefined research model



1.5 Research questions

Based upon the research goal and research model the following research questions can be derived.

Main question:

- Does an increase of social capital lead to an increase of residential real estate prices in the Netherlands?

Sub questions

- What definition should apply to 'social capital'?
- In what way can residential real estate values be determined on a neighbourhood level?
- Does the level of 'social capital' influence residential real estate values in existing residential development?

It is important to give a clear definition of the term social capital, which is suitable within the framework of this particular research. First of all social capital is a clear example of an umbrella term, of which divergent definitions are drawn up over the course of the years. This will involve a review of existing definitions of the concept among others.

Secondly it is important to quantify the concepts of social capital and residential real estate values, with regard to the measurements in the empirical part of this study. The term social capital has to be quantified in order to achieve a measurement of the presence of the quantity thereof in selected neighbourhoods. Hence creating a unit of measurement for the concept of social capital, after which the results can be mutually compared to one another. The same applies to the concept of residential real estate values.

Following the first two sub questions, an essential building block to arrive at the third sub-question, the third sub question is to be addressed. This question is nearest to the substantive purpose of this study and will involve empirical research.

1.6 Research approach

The research approach of this research does not follow a standard recipe, but is the result of a heuristic method that has been followed (Vennix, 2005). This study mainly consists of a quantitative research design that starts from a deductive approach. It is explanatory and has a more in-depth focus, rather than a wide focus. This study uses a multiple case study and a survey and will make use of data collected by others as well as empirical data collection.

There are various reasons opted for a more in-depth focus within this research. The Dutch housing market is characterized by a high degree of complexity and thus requires a more thorough investigation. Similar studies have not been able to show a link between social capital and the development of residential real estate values. This study has therefore characteristics of an exploratory study, but is mainly explanatory. This research has the characteristics of an 'evidence-seeking why question', since its goal is to search for evidence to test the hypothesis that a higher degree of social capital leads to a higher value development (Vennix, 2005). Since this research primarily has a quantitative nature, its research topic is also examined in a broader sense. But due to the limited time frame of this study, the wideness of its scope is confined. Two research methods are used, a survey and a multiple case study. The first method relates to a quantitative study, while a case study research is often linked to a qualitative study. This will be based both on data collected by others, where as additional data

is collected through a survey in selected case study areas. Chapters four and five will address the empirical data collection.

At the start of this study it is assumed that a higher degree of social capital leads to higher residential real estate values. For this particular study the following argument can be drawn, which on the basis of formal logic shows there is deductive reasoning. There may also be argued that a certain condition by means of a law will lead to an inference.

- a. Positive features of the living environment result in an increase of residential real estate values (premise 1/law)
- b. Social capital is a positive feature of the living environment (premise 2/condition)
- c. Social capital leads to higher residential real estate values (conclusion/inference)

Choosing a survey is the result of the research design. The authors of 'Research methods for business students' state that this research strategy is usually associated with the deductive method. This study has the following features which the authors associate with a deductive research approach (Saunders, Lewis, & Thornhill, 2008):

- The necessity to explain causal relationships between variables
- Collecting quantitative data
- The operationalization of concepts to ensure a clear definition
- A highly structured approach
- The necessity to conduct a random sample survey of a sufficient size in order to draw any conclusions to be generalized

The study would also be well suited for an inductive approach, because of the including of a multiple case study. An inductive approach is characterized by reasoning from the particular to the general. A selection is made of several cases, which will be used in order to generalise from specific cases to the entire Dutch housing market. By using embedded case studies, control over the research topic will increase (Saunders, et al., 2008).

The choice for a multiple case study is primarily the result of making a selection of neighbourhoods in this empirical research in order to meet with the stipulated time frame. Vennix states that compared to a survey a case study provides opportunities to examine a subject in a broader sense. A case study has sometimes been referred to as being a 'qualitative survey'. This study has characteristics of a qualitative study in the sense that the concept of social capital is explored in greater depth. A case study is also a useful method as the research topic cannot be examined in a laboratory experiment, but only within its "natural environment". There is little control over the research subject, in the sense that it cannot be isolated in its natural context (Vennix, 2005; Yin, 2009). A case study is generally used in explanatory and exploratory research and therefore fits well within the framework of this research.

Nevertheless the structure of this research is primarily characterized by a deductive approach. This is mainly reflected by the data collection concerning the survey, statistically processing the data and operationalizing the concepts used, including social capital.

1.7 Scientific challenge and framework

For this research, it is important to come up with a theoretical framework concerning the concepts 'social capital' and 'residential real estate values'. These are key concepts in this masterthesis. Much research has been done on the concept of 'social capital', by Robert Putnam among others, who carried out detailed empirical research in Italy and the United States (Putnam, 2000). This research will largely be in line with existing research in order to come up with an operationalization of the concept of 'social capital' and generate new scientific data by means of empirical research. Furthermore this research will depend on existing scientific research in order to derive potential value, which is added to residential real estate values.

This research is aimed at the Dutch housing market. Therefore this is a practical research. If this research validates that higher levels of 'social capital' will lead to a rise in residential real estate values, it will offer opportunities for additional research. Further research could for instance focus on means by which value can be added to residential real estate values by raising levels of 'social capital'. In scientific literature different definitions can be found of 'social capital'. Well-known authors on 'social capital' are Ehrenhald, Spence, Stegman and Turner and Putnam (Temkin & Rohe, 1998). In chapter three a definition of 'social capital' will be given based upon literature study, which will fit within the framework of this research.

2. Socio cultural developments housing market

2.1 The Dutch housing market

This chapter will give a brief overview of some significant developments on the Dutch housing market, mostly focussing on the period from the reconstruction era, posterior the Second World War, until present time. Also this chapter will go into more detail on a more recent development which significantly influences the Dutch housing market, namely the 'credit crunch' and its consequences and effects. First of all this chapter will start with listing a number of constraints that exist on the Dutch housing market. These constraints give rise to dedicating a separate section in this study to better understand the developments on the housing market through the years, in view of the present momentum on the Dutch housing market.

2.2 Constraints on Dutch housing market

The Dutch government takes an active stance in the Netherlands in respect to the design of public space in its cities neighbourhoods. Until the 1980s, the Dutch government was by far the most important residential real estate developer in the Netherlands. In which they had control over the design of housing and public buildings as that of the living environment (Bijlsma, et al., 2010). Since the eighties, much has changed on the Dutch housing market in terms of control, but over the course of years also many social and economic changes have occurred. All these changes have resulted in the housing market its present state, in which whether intentionally or unintentionally many barriers have formed. Boelhouwer has compiled some of the present constraints on the Dutch housing market in a recent article that are listed below (Boelhouwer, 2012).

- Stagnation in terms of moving up the housing ladder, due to an increased gap between rents of rented properties and the prices of owner-occupied properties on the Dutch housing market. Compared to the first quarter of 2008 the number of house sales has decreased by sixty per cent in the first quarter of 2012. Access to an owner-occupied property is limited for first time buyers. A dual-earner middle income family has little chance of success buying a house in present times. Access to affordable social housing is also largely restricted to this group, due to new regulations.
- Insiders – Outsiders' problem, as a result of the favourable position of insiders in relation to outsiders. There is little willingness to comply with starters on housing market. Apart from reduced access to a private property, because of the credit crisis it simultaneous offers opportunities for outsiders on the housing market. Potential buyers for example can choose from more dwellings than before and due to the crisis, house prices have dropped.
- Annually 25-30 billion euros is circulated on the Dutch housing market, resulting in a welfare loss of two billion euros because of low mobility on the labour market, adverse distributional effects and excessive bureaucracy. The many subsidies and taxes by the government have meant that the housing market is disturbed. There is a lack of affordable owner-occupied properties en rented properties in the middle and higher price range.

- The Dutch housing market, which has been regarded as a cash cow for some period of time, is vulnerable to a fall. This way there are great financial risks to the government, financial institutions and private households among others.
- Incomplete reform of Dutch housing associations. Although the housing associations generally perform well, there have recently been many incidents which have brought the sector into disrepute.
- Many future challenges on housing market, due to partly an outdated housing stock. Much of the existing housing stock no longer meets current quality and sustainability requirements in terms of a reduced use of energy. This applies primarily to many of the homes built in the reconstruction era when there was a large quantitative housing shortage.

2.3 Socio-cultural developments 1950 - present

The housing market is strongly influenced by several socio-cultural developments and trends in time. This section will focus on the influence of some socio-cultural developments along with other general developments, on the Dutch housing market since the reconstruction era in the Netherlands until present day.

The housing market does not show much dynamics at first sight, which can be derived from the long life-cycle of houses and zero to little changes of many existing neighbourhoods. The way in which we live and organise our lives is continuously changing, especially from a social-cultural perspective. The pillarization, which has been dominant in Dutch society in recent decades, has crumbled for the most part. This is superseded by developments like globalisation, increased differentiation, individualisation and rising concerns about the climate within our contemporary society. These changes substantially influence the way in which we develop our housing preferences. The VROM Council¹ states that the increase of the different needs of people is not limited to high-income groups. There is for example a substantial part of the population, including low- and middle-income groups, which are increasingly sensitive for the spatial quality, appearance and the way in which they experience their surroundings. In order to meet with these different needs requires different solutions. Experiences from the past show the importance of indicating social-cultural developments in order to grasp the consequences of a trend (VROM-council, 2009). The following is a synopsis of the major social-cultural changes in the Netherlands in the past decades, from the 1950s until present time. It is derived from the 2009 VROM council report on housing and some additional sources among which from the CBS² (Garssen, et al., 2011; VROM-council, 2009).

The Dutch housing market had a total of two million houses in 1950, while the total Dutch population was composed of ten million inhabitants. This amounts to 5 persons per dwelling in the 1950s. Less than eight per cent of the population was over 65 years or older. Total home-ownership was made up of just 28 per cent of the total number of households and the housing market was strongly regulated by the national government. In the 1950s en 1960s people interacted mostly within their own household, neighbourhood or city. Family and

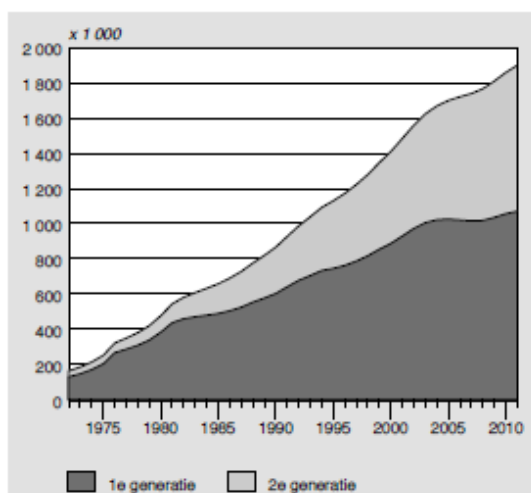
¹ The official council for the Minister of Housing, Spatial Planning and Environment

² Central Bureau of Statistics (Statistics Netherlands), an autonomous agency with legal personality. Responsible for collecting and processing national and European statistics

friends lived nearby and people worked close by their homes. It was likely that your neighbour was a colleague at the same time. Leisure time was also spent in their vicinity. Most trips were short, within the direct surroundings of people. Trips over a long distance were rare for several reasons. There was a lack of affordable transport and absence of rapid modes of transport to travel over long distances. Since it was a reconstruction era after the Second World War, income was low and so was the number of cars. This period was characterised by a modernistic (engineered) society, in which it was thought humans were in control over the entire planet. Although at the same time, the influence of religion was still high albeit decreasing. Trust in the government was relatively high within the industrialised society. Furthermore society was characterised by social stratification, based upon class and pillarization even though differences in income were moderate. The former uniform society was nationally oriented and healthcare was profoundly institutionalised (VROM-council, 2009). New neighbourhoods were initiated by the government in the reconstruction era to house 'migrants' from rural areas in cities. This national housing policy was based on a master plan, by means of the ideas of a group centred around Public Housing Agency director Bos in 1946, strongly influenced by Clarence Perry's 'neighbourhood unit'. Neighbourhoods of a certain size surrounding the city centre. It was characterised by a strong social ideal, to make people feel at home and secure in the proximity of nature. The active participation of its inhabitants in associations should be stimulated according to these ideas (Bijlsma, et al., 2010). At the end of the 1960s a considerable number of immigrant workers settled in the Netherlands, initially temporarily for a period to be determined (VROM-council, 2009).

The comprehensive influx of migrant workers in the Netherlands continued into the 1970s moving onwards and upwards. Figure 3 shows the number of non-western immigrants in the Netherlands, divided into first and second generation immigrants. The four main groups of non-western immigrants were from Turkey, Morocco, Surinam and the Netherlands Antilles (Garssen, et al., 2011).

Figure 3: Number of non-western immigrants - first and second generation (Garssen, et al., 2011)



In the 1960s and 1970s the social ideal of the reconstruction period remains. Feeling secure and at home within the neighbourhood was highly valued. The government starts experimenting with 'social amenities' in order to increase the bonding within the neighbourhood. For example residential areas with limited access to traffic were introduced. These would stimulate social interaction. Public facilities, like schools and community centres, were merged. There was a strong disbelief in an engineered society, in which urban design was a major determinant for social life. Whilst so far this was implemented for the entire urban design of a neighbourhood, in the 1970s these 'socio-physical' interventions were limited to the concentrated public spaces (Bijlsma, et al., 2010).

In the 1970s the economy was struck by a crisis, preceded by two oil crises. The economic downturn persisted in the 1980s (Vries, 2010). Since the reconstruction era there had been a period of an unprecedented increase in welfare (VROM-council, 2009). This crisis also affected the housing market in response to which the market was characterised by 'downscaling'. Mass production techniques were applied to the construction of houses, generating smaller and more frugal dwellings. This led to an increase of terraced structures at the expense of semidetached structures. The homeownership rate was 30 per cent in the 1970s and rose to 48 per cent in just one decade (Vries, 2010). In the 1980s the government was no longer responsible for the creation of entire neighbourhoods. Ever since, the government can be depicted as being more pragmatic and having abandoned the idea of an engineered society. Their main focus from then on was on public spaces at the expense of the construction of houses, because of limited financial resources among others. The construction of houses was becoming more and more consigned to property developers and housing associations (Bijlsma, et al., 2010).

From the reconstruction era until the 1990s housing was dominated by policies aimed at eliminating the quantitative housing shortage. In this period housing was strongly regulated by the government by determining size, type and ownership ratio. This all changes in 1989 when housing associations are privatized, related subsidies were abolished. Instead more market forces are permitted on the housing market (Heerma, 1989). (Vries, 2010). At the turn of the millennium market forces are increasingly stimulated by strengthening the consumer's position on the housing market (Remkes, 2001). Thus it was assumed that a market which functions efficiently creates a balance in supply and demand on macro level (Boelhouwer, 2002, 2005). Especially homeownership was aroused, which led to spectacular rise in house prices. The increase in house prices was also fuelled by decreasing interest rates, an increase in purchasing power and new types of mortgages like interest-only mortgages and mortgages based on dual-earners (Vries, 2010).

The turn of the century is considered by some as the period in which postmodernism has prevailed over modernism. Postmodernism is related to a consumer society and abundance, but also growing uncertainty about the future of our planet and its environment. This has led to an increasing importance of sustainability. This period is also characterised by multiculturalism and increasing interactions on different levels. There is little, but increasing influence by religions. While in the 1950's en 1960's social stratification was based on class and pillarization, social stratification in the new millennium is based upon economic, cultural and social capital.

Within an increasing globalizing world we have become more and more internationally oriented. In this post-industrialised society the knowledge-based economy is of great importance, as well as the increasing importance of the creative industry. As we have previously attracted cheap labour to work in our economy, there is a deficit of highly educated workers around the turn of the century. As a result expats from around the world settle temporarily in the Netherlands. These cosmopolitans, for large part consisting of academics and technicians, prefer living in an urban environment. They prefer choosing a rental apartment rather than a privately owned property, since their stay is often limited to a few years. A continuous global economy, characterized by an increasing liberalization of international trade, has led to relatively large differences in income. In comparison to past decades trust in the national government has decreased. The influence and presence of market forces on the housing market has increased. Like many western societies we have to cope with the ageing of the population, which can be largely attributed to baby boomers. This has complex effects on society, like an increasing preference by society for the extramuralisation of health care. This process refers to the shift from care provided in institutions to care provided at the client's home. This period is also characterized by a large increase in welfare due to high economic growth. Another distinctive change in that period concerns the housing policy. There is a reversal of a traditional housing policy strongly driven by the government, market by a quantitative top down approach, to an increase in notice of individual housing preferences. This reflects a change from a concern of providing mainly appropriate housing for everyone to focussing on the individual and his personal needs. This also reflects the more general tendency in increasingly allowing and respecting one's personal choices on the one hand to increasingly allocating the personal responsibility of citizens on the other hand (VROM-raad, 2009).

At this moment the Dutch housing market consists of approximately 7 million houses and the total population in the Netherlands consists of about 17 million inhabitants. Home ownership has risen from only 15 per cent eighty years ago, in the 1930's, to almost 60 per cent in 2010 (Vries, 2010). Because of cheaper mobility and extended range there has been an increase in commuting distance. Also people travel greater distances for their holidays. Since the period of reconstruction air travel has vastly increased. As a result this has led to more complex and divers interactions. The increase of globalisation since the 1980s and free trade has led to the rise of economies in Eastern Europe and Asia, which has affected international competitiveness. In earlier decades there has been a labour shortage in certain sectors. Whereas this labour deficit previously consisted mainly of less educated workers, later there arose a shortage of highly educated workers. Present time is also marked by a second influx of cheap labour from Eastern European countries, probably best known for working in horticulture. At the same time interaction between universities has further increased. There is a growing increase in European legislation, which leads to more and more European influence on the Dutch housing Market. As a result of these regulations, new construction projects may stall due to stringent air quality requirements and housing associations are being scrutinized because of unfair market competition as a result of alleged community state aid. Simultaneously the influence of the Dutch government declines because of increasing decentralization and increasing influence of private parties. In short, this leads to an increase of 'Multi-level governance', in which the national government is becoming a player in an increasingly complex

field of actors. Growing internationalization has a negative effect to the extent that it creates increasing uncertainty. This results in a more open society with an emphasis on self-reliance and responsibility. There is a growing concern to increase the level of sustainability. This raised awareness comes from both the government and the market. The Dutch government responds by granting subsidies, for example, in order to reduce the use of energy in transport and households. For companies raising awareness for sustainability is a good theme for their image (VROM-raad, 2009). Besides the focus on sustainability, there is nowadays more attention towards housing needs and relocation behaviour of people. So there is a shift, going from a supply market to a demand on the housing market. This process is accelerated by the crisis on financial markets. With increased wealth, house prices have risen sharply, while the increase in housing quality has remained well behind. In the period from the reconstruction era to the present day the differences between the rich and poor have increased. The increase in freedom of choice is thereby limited to the wealthy. In 2008 Veldboer speaks of a 'sinking middle class' (Veldboer et al., 2008: 27 in VROM, 2009). Another contemporary concern is that of the limited access of outsiders on the housing market, especially first-time buyers. From the advent of the crisis on financial markets, the housing market is threatened by tighter credit requirements. A recent development is the partial exclusion of certain income groups on the social rental market by housing associations as a result of requirements by the EU (VROM-raad, 2009). One in five home seekers is forced to divert to a private house or private sector housing. The impact of these developments for most insiders on the housing market is still limited. Demographics show an increasing diversity of society by the rise in the proportion of immigrants to twenty per cent. At the same time, there is a decrease in the size of households and a declining birth rate. Resulting in more single-person households, partly due to a rise of divorces, and elderly that live home longer (extramuralisation). In over half a century the number of persons per households has declined from five in the 1950s to 2,2 persons in 2008. Despite the fact that many consider the Netherlands to be a densely populated and social country, the number of social isolated people is growing. Typical examples include elderly, unemployed and less educated people (Bijl, et al., 2011).

Pictured above is a description of socio-cultural developments in the past decades since the 1950s, including some important economic developments, demographic developments and developments on the housing market. This next section will go into more detail on the later. It presents a more thorough analysis of the developments previously mentioned, more specifically on the influence of socio-cultural developments on the Dutch housing.

Previously the Dutch housing market was aimed at first-time buyers on the housing market; whereas the housing market is now aimed mostly at transferees. Therefore the housing market has become more fragile since the financial crisis made its appearance a few years ago. Downscaling like in the 1970s en 1980s is not a good solution according to the VROM Council. There is a need for new solutions that do not focus on supply, but focus on demand. This same council states that houses with a good value for money will sell and small-scale projects aimed at specific target groups will perform well (VROM-raad, 2009). The quality of the housing stock has increased in the last couple of years, to a large extent to the merit of the four big cities and so-called

'krachtwijken'³ (Nicis_Institute, 2009). These have made the most progress in terms of quality (Bijl, et al., 2011). Thematised concepts are currently popular on the Dutch housing market, like the development of special communities designed for elderly people or 'golf communities'. There is a growing sense for community and solidarity in Dutch society (Vlaanderen, 2009). It is expected that future population growth will focus on inner-city developments, mostly by restructuring previously deprived neighbourhoods. This possibly leads to a decline in households within the periphery (VROM-raad, 2009). This will result in declining contentment by inhabitants in so-called 'shrinking regions'. These regions refer to areas in which there is a regional population decline (SCP, 2011). Another socio-cultural development that affects the housing market is the decline of multi complex relationships, as in 'one's neighbour is also a colleague' for example. Furthermore public familiarity declines at the expense of pleasant anonymity, which leads to a reduction of predictability with regard to encounters in public space. Socio-cultural developments have resulted in to the emergence of residential consumers who are no longer tied to one place. Though income can have a significant effect on whether someone will live his entire life in the same area. Private initiatives give rise to intermediate form of the openness of public domain (Bijlsma, et al., 2010). It has been getting harder to determine our identity in comparison to the past. A home increasingly expresses who we are, as a replacement for the pillar society and the traditional class society of the past. By decorating homes, by assigning an identity to a neighbourhood and location attempts are being made to create identity. Because of this there is an increase in individualisation and diminishing solidarity. As a result people try to distinguish themselves from others through activities and by consuming goods. This leads to a further differentiation of lifestyles (VROM-raad, 2009). Hence leads to more agencies specialising in research on lifestyles. Differentiation based on lifestyles is becoming increasingly important in product development and marketing, among which on the housing market. People search for people with the same desires, ambitions and similar capabilities within their own neighbourhood due to a decreasing degree of solidarity. Whereas particularly functionality was of great importance earlier, nowadays people are more focussed on feelings and inner experience. This can also be seen in peoples preferences of living and the relative success of neighbourhoods with a theme (personal communication).

Rules and regulations to regulate land use planning in the Netherlands have existed for over hundred years, since the enactment of the Housing Act in 1901. For a long time spatial planning policy was aimed at legitimizing spatial developments afterwards. With the reduction of the docility of citizens the need for governments to control these developments rose thirty years ago. This has led to a transition to 'permission planning'. More than was previously done by the government, the specification of desirable functions was determined in advance. Most important key here was the municipal government that captures such features in zoning. At the end of the turn of the century the Scientific Council for Government Policy announced a new way of planning, so called 'development planning'. The government influence on new land developments decreased in favour of mainly real estate developers. With the thought that this would make an end to the supply oriented housing market until then. They were supposed to be more capable to meet with people's wishes. The result, large scale housing programs to the start of the credit crunch. From that knowledge, we

³ 'From problem district to show district' areas, which are part of the Dutch forty districts approach.

now need to implement 'invitation planning' according to Van Rooy. A way of planning in which governments set the outlines about what can and cannot be built in view of the long term. First, they should protect important values and secondly they must facilitate and welcome new initiatives. It is important that private initiatives are in line with market demand (Rooy, 2011).

This chapter has illustrated the high degree of complexity of the Dutch housing market. In the course of the years the housing market can be characterised as being dynamic to a large extent. Housing preferences have been affected by various social, cultural and economic developments. Because of the complexity of the Dutch housing market not all of its elements can be addressed in this research. The subsequent chapter will address the elements of housing market which are included in this research.

3. Theoretical framework

3.1 Introduction

In this chapter the main elements of this study are briefly elucidated. The definitions of the concepts social capital and residential real estate values are discussed. In addition, on the basis of literature, some of the ways in which the level of social capital can be increased are illustrated. Also, some criticism on the use social capital is discussed.

3.2 Introduction to social capital

In this study the theoretical concept of social capital is selected. Other terms that are related to social capital include liveability, social cohesion and social climate (Adriaanse, 2011). These concepts are often used in studies involved with problems concerning liveability or a lack of social cohesion. Social capital allocates value to social networks and is consistent with the research objectives of attempting to identify the added social value in residential real estate development (Putnam, 2000). A study conducted by 'USP Marketing Consultancy' and consultancy firm 'Between-Us' shows that a third of its respondents indicate that they wish to increase the level of contact between neighbours and local residents (Between-Us, 2011). This desire for getting more in touch with local residents exists especially among tenants and young households. One possible cause for this desire, which is highlighted in this research, is the increasing individualization of society. Other causes may be the increased financial and political uncertainties as a result of the current economic crisis.

The importance of social capital to any population is stressed in the quote below by Jane Jacobs from her famous work (Jacobs, 1993). Social capital seems to be somewhat intangible, although of great value.

"...underlying any float of population must be a continuity of people who have forged networks. These networks are a city's irreplaceable social capital. Whenever the capital is lost, from whatever cause, the income from it disappears, never to return until and unless new capital is slowly and chancily accumulated." – Jane Jacobs, 1961

In literature there is no unequivocal definition of the concept of social capital. The next section lists some definitions of social capital which have been influential in academic literature in order to come up with a working definition that will fit within the framework of this particular research.

3.2.1 Definition social capital

"Social capital – broadly, social networks, the reciprocities that arise from them, and the value of these for achieving mutual goals – has become an influential concept in debating and understanding the modern world" (Baron, Field, & Schuller, 2001). This quote summarizes the key elements of the concept of social capital

concisely. The concept plays an important role in new thinking on international economic development, politics and social renewal among other research fields. Social capital “draws attention to the importance of social relationships and values such as trust in shaping broader attitudes and behaviour is clearly highly attractive to many people”(Baron, et al., 2001). In the scientific world there are numerous divergent definitions of the concept of social capital. Known authors in this research field include Bourdieu, Coleman, Ehrenhald, Putnam, Spence, Stegman, and Turner among many others (Baron, et al., 2001; Temkin & Rohe, 1998). The following quotes list some of the more influential definitions of social capital in academic literature.

“Social capital is the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition ... which provides each of its members with the backing of collectively-owned capital” – Bourdieu, 1997

“Social capital is the set of resources that inhere in family relationships and in community social organization and that are useful for the cognitive or social development of a child or young person” – Coleman, 1994

Coleman has applied the concept of social capital mainly on the educational system, which can be derived from the definition above. According to Bourdieu social capital is part of an intended process, while Coleman believes that social capital arises because of activities intended for other purposes (Baron, et al., 2001).

The variables that often recur in the definitions of various authors are the degree of ‘trust’ and (social) ‘networks’. Robert Putnam, one of the most well-known authors in the field of social capital, provides the following definition of social capital:

“Whereas physical capital refers to physical objects and human capital refers to properties of individuals, social capital refers to connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from that”- Putnam, 2000

In this definition, the elements of trust and networks are cited again. Various definitions show similarities according to Putnam, in that they all “call attention to ways in which our lives are made more productive by social ties” (Putnam, 2000, p. 19).

Besides being a somewhat theoretical and nondescript concept, other authors give a more operational definition of the concept of social capital, among which The World Bank. The fact that World Bank is very

interested in the application of the concept of social capital is indicated by the 250 employees of various sectors that together form the Social Capital Thematic Group. They are interested in the appliance of social capital to World Bank operations. Together with Michigan State University they have dedicated a separate section on the World Bank's website to the concept of social capital, describing the concept and measurement issues of the concept in reference to various studies (World_Bank, 2011). Social capital is described as follows:

“Social Capital refers to the norms and networks that enable collective action. It encompasses institutions, relationships, and customs that shape the quality and quantity of a society's social interactions. Increasing evidence shows that social cohesion is critical for societies to prosper economically and for development to be sustainable. Social capital is not just the sum of the institutions which underpin a society – it is the glue that holds them together.” – The World Bank, 2011

A significant part of the website is devoted to the application of the concept of social capital, including ways in which the concept can be measured. They indicate a number of reasons describing there is no such thing as a single measurement tool to measure the concept of social capital. First of all they indicate most definitions are both comprehensive and multidimensional and incorporate different levels and units of analysis. Secondly they also point out social capital and similar ambiguous concepts like 'community' and 'networks' prove to be problematic, regarding the measurement of the concept. In third place they point out there are few long-standing surveys, such as the World Values Survey, and the amount of items available is limited in order to measure social capital. Next to this, they state the measurement of social capital depends on the research approach, making a distinction between quantitative, qualitative and comparative studies. The World Values Survey was used in a quantitative research by Knack and Keefer in 1997. Robert Putnam in 1993 compared the level of social capital in the South of Italy to the North of Italy using items like voter turnout and membership within the community. On a micro-level several researchers conducted qualitative research for example on the bases of interviews (World_Bank, 2011).

In this research the starting point in defining social capital was to find a working definition of the concept of social capital complementary to the research goal and research approach in accordance with the arguments stated mentioned above.

3.2.2 The value of social capital

The definition of The World Bank in the previous section notes that certain economic benefits can be traced to social capital. In this paragraph the value of social capital in relation to communities and the neighbourhood is explained.

One can depict social capital in many ways, judging from the previous paragraph. The study of social capital can be applied to different groups in the context of social and economic development. The World Bank for

example, makes a distinction of seven key sources of social capital, which are; families, communities, firms, civil society, public sector, ethnicity and gender. Although they also note this list is by no means exhaustive.

The key source 'communities' is best related to the neighbourhood level. In this research community is alluding to the sociological concept of 'gemeinschaft' by Ferdinand Tönnies. Gemeinschaft refers to a community in which natural, emotional and dependent associations are generated between people. Its inhabitants are connected to one another by means of close social relationships such as family relationships and friendships. Were as the average neighbourhood is increasingly characterized by 'gesellschaft', consisting of a group of individuals with fewer social ties in comparison to a gemeinschaft (Blakely & Snyder, 1997). In reference to communities, The World Bank its website states "The quantity, quality and persistence of social interactions among neighbours, friends and members of groups and association, generate social capital and the ability to work together for the common good". A benefit of trust, associated to social capital, in relation to communities is the reduction of problems by enforcing shared values and norms of behaviour. Other benefits are an increase of business opportunities and the quality of education and accessibility of health services. Business opportunities will improve due to the informal access to credit and reduction of transaction costs. Increasing community involvement will lead to an increase of social capital. The World Bank also makes notice of the disadvantages of social capital in relation to communities, since it can exclude outsiders, harm individuals due to community pressure or be harmful to communities, because of social ties (World_Bank, 2011).

To go into more detail concerning the value of social capital to a neighbourhood a distinction could be made in ways social capital adds value to a neighbourhood. For example social capital may provide added value to the residents within a neighbourhood, because of a high degree of appreciation they have for the social ties within their neighbourhood. This way social capital adds value on an individual level. Also, social capital can be beneficial to the physical properties of a neighbourhood, referring to the quality of the built environment around. Moreover it could also help bring about the economic value of the residential real estate. In this manner there is an added value in financial terms. As with the classification of the World Bank, this distinction on the basis of assumed value is also not exhaustive.

3.2.3 Increasing the level of social capital

Before putting forward ways to contribute to the level of social capital within a neighbourhood, on the basis of earlier studies, it is also important to briefly explain that a high level of social interaction is not solely a guarantee for neighbourhood success.

Despite the many positive attributes that are ascribed to social capital, among which are an increase in the quantity, quality and persistence of social interactions among neighbours stated by The World Bank above, the following example illustrates that social interactions is not per se a necessity for creating a popular residential living environment.

Adriaanse (2011) in a PhD research claims that social cohesion is not necessarily the key to success. Amsterdam Buitenveldert is a neighbourhood with many different individual groups, including a large and close-knit Jewish community and non-Dutch speaking expats, having their own private schools and shops. According to the author the level of social interactions is low, since there are few contacts between the different inhabitants of Buitenveldert, due to the fact that the various residents are primarily engaged within their own community. This can be considered as a negative aspect of this neighbourhood according to Adriaanse. Nevertheless Buitenveldert is a popular residential area with a high degree of safety and few local problems. It is notable that many residents are elderly people and the number of young people here is low. This latter group indicated that there is a lack of dynamism in Buitenveldert (Adriaanse, 2011). Based on this research one can state that a higher level of social capital may not be necessary to the appeal of a neighbourhood. This corresponds to an interview I had with Rogier Boogaard, Business Developer at Heijmans, at the beginning of my research. In this interview he indicated people have different housing preferences and therefore might consider social capital as being a disadvantage to them instead (personal communication). On the other hand the example of Buitenveldert does not include the entire concept of social capital. It is suggested that weak social ties, which can be linked to social capital, do not affect neighbourhood success. Therefore it is said that social capital does not contribute to a neighbourhood its success. Other characteristics of neighbourhood, such as a high degree of safety and few social problems, can also be linked to social capital in a positive way. Hence it can be stated these positive aspects are either overlooked or undervalued.

A higher degree of social capital can indirectly lead to residents who experience higher levels of happiness, according to a study conducted by Van Vlaanderen (Vlaanderen, 2009). The author argues that residents that live in a community, have more social contacts, and possibly therefore experience a higher degree of social capital. From this research it can be inferred that residents of a community indicate they experience higher levels of happiness than residents that do not live within a community. Based on this examination, it can be assumed that creating a residential community is a way to increase the level of social capital. Though, this does not entirely cover the whole concept of social capital. The results of this study are particularly beneficial for increasing social cohesion.

In the inquiry mentioned earlier by consultancy firms USP Marketing Consultancy and Between-Us, the integral use of social media is suggested as a way to enlarge the level of social capital in a neighbourhood. They argue that by facilitating the use of social media in the neighbourhood, the participation of residents in the neighbourhood will increase. Moreover, they expect it will lower the threshold for local residents to meet one another through the use of social media. Residents would be able to ask each other for help or extend one another a helping hand. This could include a neighbour who sends a text message asking if they can bring groceries from the supermarket or the local youth who wants to earn pocket money by doing "jobs for a bob 2.0". Local entrepreneurs could use social media to interact with the local residents. Other local organizations, such as welfare organizations or the local government could also use social media. This may lead to more

openness and transparency and increase their support among residents. The use of social media could also generate a higher degree of self-governance at the neighbourhood level (Between-U.s).

Forrest and Kearns argue in 1999 that physical changes, landmarks and physical boundaries significantly affect the feeling of belonging, but the effect of social networks on social capital is of greater importance. Physical measures that affect the feeling of belonging are, for example the application of street furniture or design of the neighbourhood. Branding the neighbourhood would also contribute to the feeling of belonging. In their article of 2001, they suggest several ways to increase the degree of social capital. By establishing or supporting activities, the participation rate among residents can be increased. This could also be achieved by forming local networks. As an example to stimulate cooperation and reciprocity within the neighbourhood, they propose the introduction of a 'good citizenship award' (Forrest & Kearns, 2001).

3.2.4 Critiques

The concept of social capital, much used as a conceptual tool, has not been free of criticism in the academic debate. Using this concept has many advantages, such as the fact that it focuses not only on the individual actions of people. Although some state it is difficult to aggregate data from the individual level to social structures. Baron, Schuller and Field have listed the main criticism on social capital (Baron, et al., 2001). This section will address some of these criticisms.

A first criticism on social capital has already been mentioned earlier. There is no single definition of the concept of social capital. Some economics even dispute the use of the term capital in social capital. Thereby corresponding terms, like networks and trust, are often interpreted differently. Then again, the concept is operationalized in a number of ways. Other concepts of capital, such as financial-, physical- and cultural capital, generate better consensus among scholars. The authors also indicate that the rapid release of numerous articles and definitions mentioned herein, in a relatively short period of time, is there to blame. They shall keep hope that in the future consensus will arise.

A second criticism on social capital concerns the huge number of subjects to which the concept of social capital has been applied. To quote Portes: "(...)the point is approaching at which social capital comes to be applied to so many events and in so many contexts as to lose any distinct meaning" (Portes, 1998). In 1998 Michael Woolcock made an attempt to structure articles related to social capital into seven research fields, among which were social theory and economic developments, families and youth behaviour problems, schooling and education, community life, work and organizations, democracy and governance and general cases of problems of collective action (Woolcock, 1998). While reviewing literature for this thesis, I also came across several articles on the topic of health care and more specifically related to the field of urban planning, which dealt with social capital. The subjects associated with social capital, by the World Bank, provide a more complete overview of topics related to social capital. The World Bank, affiliated to many articles on social capital, distinguishes the following eleven topics concerning social capital: crime/violence; economics and trade; education; environment; finance; health, nutrition and population; information technology; poverty

reduction and economic development; rural development; urban development; and water supply and sanitation (World_Bank, 2011). These diverse topics illustrate the criticism on social capital being over-versatile.

Due to the high number of different definitions it is inevitable that social capital has also been criticized for measurement issues. Methods to measure the degree of social capital also show much diversity. This is at the expense of the validity of the measurement.

3.2.5 Working definition of social capital

In this research the concept of social capital is applied at a neighbourhood level. In accordance with the argument of The World Bank that a single true measure of social capital is not possible or desirable, a working definition is drawn up that fits the research goal and its approach. In the preparation of a working definition only variables were used that are based upon literature on social capital.

The various parts of the working definition that describe social capital are largely consistent with the literature by Forrest and Kearns on social capital (Burns, Forrest, Kearns, & Flint, 2000; Forrest & Kearns, 2001). This results in the following working definition that is described by the following three elements. Describing social capital a distinction is made between the **feeling of belonging** to the neighbourhood, the **feeling of safety** in the neighbourhood and the **social network** in the neighbourhood, describing social capital.

Forrest and Kearns distinguish eight different domains of the theoretical concept of social capital. One of which is belonging; meaning “that people feel connected to their co-residents, their home area, have a sense of belonging to the place and its people”. The immediate surroundings and networks at the neighbourhood level are important on our daily routines and in the feeling of belonging to the neighbourhood. The decline of trust in traditional institutions, strengthened activities and solutions at a local level, resulting in an increasing feeling of belonging to the neighbourhood (Forrest & Kearns, 2001).

Safety is a second domain depicted by Forrest and Kearns, by which social capital can be interpreted, which is defined as follows; “that people feel safe in their neighbourhood and are not restricted by their use of public space by fear”. The description of the feeling of safety corresponds to the definition applied in this research, although the approach of the notion of safety differs somewhat in this research. The authors suggest local policies that are aimed at harsh measures in order to improve the level of security and mitigate criminal activities. The notion of safety in this research is more focussed on the feeling of safety of local residents, such as the level of nuisance they experience and to what extent they are afraid to be bothered in their neighbourhood.

The first two elements of the working definition correspond to a great extent to the works of Forrest and Kearns. Social network can be traced to most works on social capital and corresponds to one of the most common element of social capital, ‘networks’. More specifically, the social network in the neighbourhood can be traced to several of the eight domains of Forrest and Kearns, like supporting networks and reciprocity, which means; “that individuals and organisations co-operate to support one another for either mutual or one-

sided gain; an expectation that help would be given to or received from others when needed". Social network in this research will focus less on reciprocity and more on social ties between individuals in a neighbourhood.

3.3 Development of residential real estate values

The development of residential real estate values will be discussed in this section. Next to the definition of this concept, this section will briefly discuss the development of residential real estate values in the Netherlands in time.

3.3.1 Introduction to the development of real estate values

The second major term in this thesis is the 'development of real estate values'. This term can be defined in a number of ways. In this research paper it will always refer to the development of residential real estate values, since this research focusses on residential real estate.

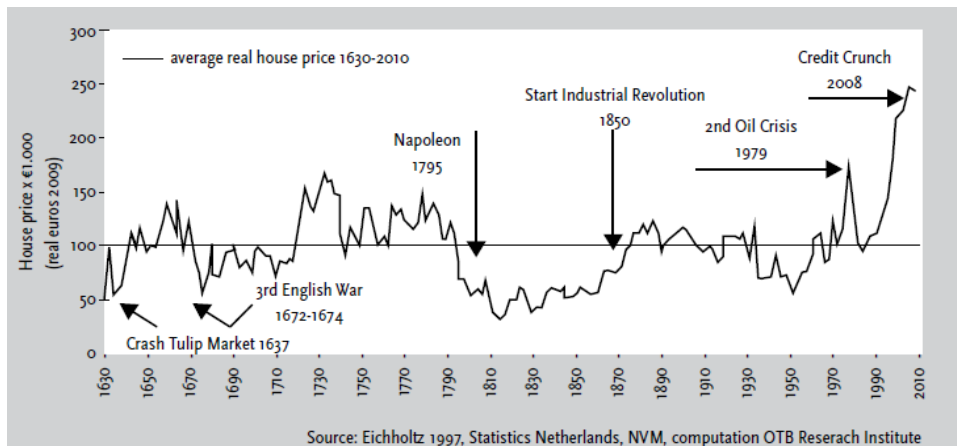
3.3.2 Definition of development of residential real estate values

The term 'residential real estate value' differs from the 'value of real estate development' in the sense that the duration of the sale of a property is not included. For example, a short sale period of a property will result in lower interest costs, compared to a longer period of sale. The development of real estate values refers to the value of a property over time. This value may increase, decrease or remain constant. This is also dependent of the way in which the property value is measured. While measuring the value of properties one could take into account the effect of inflation over time or measure the uncorrected value of properties. The term residential real estate value possesses little issues concerning academic consensus. However, measurement issues should be taken into account.

3.3.3 Brief history of the development of residential real estate values in the Netherlands

Given the current dynamics on the housing market, there is much interest in the value of residential real estate. The numerous press releases that have been appeared indicate declining in house prices compared to previous years and quarters. Probably the best known indicator for residential real estate prices in the Netherlands is the 'house price index'. In 1997 the first international publication in relation to the house price index appeared. In that year Eichholtz illustrated the development of house prices in the Netherlands on the basis of his so-called 'Herengracht Index'. This index is derived on the prices of properties on the Herengracht in Amsterdam, a street in the old centre of the city of Amsterdam, from 1628 to 1973. A striking feature from this index is that the price development follows political and economic trends in time to the utmost extend. There are clearly negative price movements in times of war or during economic crises (Eichholtz, 1997). Recently De Vries extended the index with real residential property values up to 2010, which is illustrated in Figure 4 below (De Vries, 2010).

Figure 4: House price index until 2010 on the basis of Herengracht Index (De Vries, 2010)



In addition to the declines in house prices in times of war and economic crises, it is noteworthy that residential property values show a large increase since the 1990s. Such an increase has not previously occurred since the beginning of the measurement of the index. Figure 4 also shows the downward graph with the advent of the credit crunch several years ago.

3.3.4 Working definition of the development of residential real estate values

The measurement of residential real estate values possesses several problems of which some have already been mentioned. As a result of inflation for example, measurement errors can occur. In the Netherlands prices of a new property and an existing property are generally constructed differently. This is mainly because of the transfer tax on selling existing properties and other incidental costs. This will complicate comparison of new properties to existing properties. Since the research objectives of this study are aimed at the examination of existing residential neighbourhoods and the developments of residential real estate values herein, the development of the values of existing homes is preferred in this research. This is at the expense of newly developed properties with no legal charges.

Good indicators of the market value of homes are transaction prices. This is an obvious way to determine the development of house prices and is widely used by various organizations in the Netherlands to determine the developments of residential real estate prices. Among which are the Association of Real Estate Brokers and Real Estate Experts (NVM) and Statistics Netherlands (CBS) among others (Vries, 2010). In this research the development of residential real estate prices will also be derived from **transaction prices**, limited to **existing homes**.

3.4 Conceptual model

The paragraphs above have been dedicated to the two main elements of this research, social capital and residential real estate values, which form the backbone of this study. On the basis of the theory described, variables have been selected that correspond with the research question.

Main question: Does an increase of social capital lead to an increase of residential real estate prices in the Netherlands?

Thereby, by selecting the required variables, the paragraphs above answer to the first two sub questions.

Sub question 1: What definition should apply to 'social capital'?

Sub question 2: In what way can residential real estate values be determined on a neighbourhood level?

As described in paragraph 3.2 the concept of social capital is subdivided into the feeling of belonging to the neighbourhood, the feeling of safety in the neighbourhood and the social network in the neighbourhood. Residential real estate values, as described in 3.4, will be derived using transaction prices of existing homes. Subsequently, the third sub question, consistent with the main research question, can be answered.

Sub question 3: Does the level of 'social capital' influence residential real estate values in existing residential development?

This third sub question corresponds to the second part of this research, the empirical part. The hypothesis to be tested is that a higher degree of social capital leads to higher residential real estate values. The causal relationship of these two elements is tested through a double analysis in selected neighbourhoods in the Netherlands. Both analyses seek discrepancies in selected research areas in comparison to selected reference areas, aimed at the level of social capital on the one hand and the development of residential real estate values on the other hand. In order to confirm to this hypothesis, results should reveal both a higher level of social capital and an increase of residential real estate values in either the selected research areas or reference areas in comparison to one another. The two subsequent chapters give a detailed description of the research approach selected.

4. Methodology

4.1 Introduction

In addition to the previous theoretical sections, an empirical research is executed. The second part of this research consists of an empirical study in order to determine the influence of the level of social capital on the value of residential real estate by means of four practical examples. In this section the methodology that forms the basis of the multiple case studies is described. The practical component of this research mainly consists of two different tracks. One of which is to measure the level of the independent variable social capital. The other is to measure the level of the dependent variable, the value of residential real estate.

This section also gives a description of the research strategy used and the case selection. The research material available plays an important role in answering the questions in the empirical part of this research. The quality of this research depends on the quality of this research material. The main challenge of this empirical research therefore is to have access to the appropriate research material. Hence the principals of data collections are discussed in this chapter.

4.2 Research design

In this study is chosen for a multiple case study design. Yin (1989) described a case study as follows: “A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used” (Yin, 2009). The research subject cannot be examined by means of an experiment, because the complexity of the housing market doesn't allow variables to be isolated from its bigger context. However, this research is not a classical multiple case study. The data, consisting largely of quantitative data, is obtained using a survey. A survey is a good choice when the research goal is to develop an understanding in a reasonable amount of time (Vennix, 2005). The measurements in this research, carried out using statistical testing, are based on quantitative data obtained from surveys. In interpreting these results additional qualitative data is used. The insights gained from the multiple case study executed in four selected areas result in new insights about the Dutch housing market.

4.3 Independent variable

In search of a method to carry out this research, various studies with relating topics have been examined that were carried out by other researchers in the past. Among these examined studies were several studies that were carried out in the United States of America. In 1998 Temkin en Rohe published their results of an empirical analysis on the effect of social capital on urban neighbourhoods (Temkin & Rohe, 1998). These scientists were among the first to execute such an empirical research on the positive effect of social capital on neighbourhood stability. Until then there had already been consensus of the positive effects among many urban planners. However there has been a lack of supporting substantiated evidence and in particular on a

neighbourhood level. They had measured social capital on the basis of sociocultural milieu and institutional infrastructure.

In the Netherlands Beugelsdijk of the Nijmegen School of Management and Van Schaijk of the Faculty of Economics of Tilburg University examined in 2005 whether a correlation exists between social capital and economic development and regional economic growth in 54 regions in Western Europe. These authors drew their results from extant literature (Beugelsdijk & Schaik, 2005).

A more recent example from the Netherlands is a 2011 PhD research paper conducted by Adriaanse of OTB in Delft, in which she examined what factors are responsible for a neighbourhoods its success or lack of success. In this research Adriaanse made use of the objective register data of all Dutch neighbourhoods together with the survey data of the Dutch Housing Demand Survey in collecting data for the analysis.

These few examples of studies demonstrate the importance of the availability of appropriate data in order to achieve an accurate measurement. Collecting the best data available during the time frame of this research will be a key factor in this research.

4.3.1 Operationalization

The method selected to compose a proper operationalization of the concept of 'social capital' has already been mentioned earlier. Based on a literature study and in line with the incentives of this research, the concept of social capital has been divided into three attributes in order to measure the level of social capital available. In this section, the further operationalization of the concept is discussed.

Social capital is divided into the 'feeling of belonging', 'the feeling of safety' and the 'social network' in the neighbourhood. On the basis of the data of the most recent Netherlands Housing Research 2009, successor to the Dutch Housing Demand Survey, these three features of social capital are further specified on the basis of availability and relevance of data. This is shown in Table 3 below. In reference to the variables related to the feeling of belonging, the first two variables relate to the actual experiences of the residents about their neighbourhood. The other two variables relate to how much the residents value the presence of the allegation in their neighbourhood.

Table 3 is composed of variables related to each of the three components of social capital in this research. This research approach shows similarities with the PhD research conducted by Adriaanse. The responses corresponding to the variables above can be traced back to the questions and statements in the Netherlands Housings Research 2009, which will be discussed in more detail in a following section.

Table 3: Components Social Capital

| | |
|-----------------------------|---|
| Feeling of belonging | Feeling attached to the neighbourhood |
| | Feeling at home in the neighbourhood |
| | Importance of feeling at home in the neighbourhood |
| | Importance of the image of the neighbourhood |
| Feeling of safety | Presence of graffiti on walls/building |
| | Presence of rubbish on streets |
| | Nuisance of direct neighbours |
| | Nuisance of local residents |
| | Nuisance of youth |
| | Nuisance of noise pollution |
| | Nuisance of smell/dust/dirt |
| | Affraid to be harassed or robbed in neighbourhood |
| Social network | Neighbourhood will improve/deteriorate/stay the same |
| | Lots of contact with other local residents |
| | Feeling joint responsibility within the neighbourhood |
| | Pleasant neighbourhood association |
| | 'Cozy'/ sociable neighbourhood with much solidarity |

To develop a better understanding of the selected neighbourhoods, general data will also be collected per neighbourhood. An overview of this general data can be seen in Table 4 below.

Table 4: General data per case study

| | |
|--|--|
| General data | Number of persons per household |
| | Composition of household |
| | Owner-occupied property or rented house |
| | Type of property |
| Physical features of the living environment | Satisfaction with current living environment |
| | Presence of attractive buildings |
| | Choice of neighbourhood/house |

4.3.2 Data collection

For the implementation of this empirical research access has been granted to the survey data of the Netherlands Housing Research 2009 by the holder of the data source. This extensive data file, which contains comprehensive details, distributed over all the postal code areas in the Netherlands, is highly valuable for the

implementation of this research. The Netherlands Housing Research 2009 (Ministerie_BZK & CBS, 2011), is made available to government agencies and universities by Data Archiving and Networked Services (DANS). The Netherlands Housing Research 2009 is a Ministry-based research, for which the data collection was conducted by Statistics Netherlands (CBS) in the period from September 2008 to April 2009. The questionnaire was drawn up in consultation between the former Ministry of Housing, Spatial Planning and the Environment (VROM) and Statistics Netherlands, using the 2006 questionnaire as a basis.

The database used in this study is version 1.3 of the Netherlands Housings Research 2009 and consists of 78071 records and 850 variables. This was the most recent version available at the start of this research. In reference to the questionnaire related to the topic of housing, respondents were approached using face-to-face interviews, telephone interviews and a small group of individuals was approached by means of the internet. The population consists of persons living in the Netherlands of 18 years (as of 01/09/2009) or earlier. These people should be part of a private household and registered in the Municipal Personal Records Database (GBA). The level of response had to be at least 60 per cent, of which 40,000 responses are complete. A response is complete when at least 75 per cent of the questions are answered and no more than 15 per cent of the questions are answered by 'do not know' or 'refused to answer'. The other conditions imposed in respect of obtaining the data for the Netherlands Housing Research 2009 can be obtained on <http://www.dans.knaw.nl/>. Eventually for the housing module, which consists of questions related to housing, 73,264 sample persons were approached. A total of 40,752 responses were completely filled out, resulting in a total response of 62 per cent.

A disadvantage of this dataset is its spatial delineation. The level of detail in this dataset is limited to four digit postal code areas. This particular research is concentrated on a neighbourhood level, which consists of a smaller spatial delineation. A four digit postal code area may include multiple neighbourhoods for example. This makes it necessary for additional data to be collected in the research areas. Therefore a survey is plotted in the four neighbourhoods that are part of the empirical investigation. The questionnaire plotted consists of identical questions and statements in comparison to the extensive dataset described above. For an objective comparison, the questions in the survey must correspond exactly to the questions that are used in the Netherlands Housing Research 2009. The dataset from the Netherlands Housings Research 2009 is used as reference material. Complementary to a paper version, an exact copy is made available online in order to increase the level of response. Both datasets created serve as input for further statistical analyses.

Among statisticians a sample size of at least thirty respondents, also known as the central limit theorem, is commonly used as a rule of thumb, which also works as a starting point in this study (Saunders, et al., 2008; Stutley, 2003). This number of responses is required by several of the statistical analyses in this study (independent samples t-test, chi square test, mann withney test).

4.4 Dependent variable

By means of a multiple case study the economic value of 'social capital' as part of the real estate value will be determined. There is no doubt that, similar to the independent variable in this research, the quality of the data available is of great importance in analysing the value of residential real estate.

There are several 'economic valuation methods' available to determine the value of residential real estate. These methods are often used in social cost-benefit analysis. One method is the 'hedonistic pricing method', often used to estimate economic value within an ecosystem. By using this complex method, the economic value of nature can be derived from the current residential real estate value. Because of the complexity and interrelationships of several factors, which influence residential real estate values, this may lead to several statistical difficulties among which 'dirty data'. This method starts off with the assumption that the markets concerned work perfectly and all data needed is available (Buisman & Vos, 2008). Other economic valuation methods are characterized by similar practical and statistical problems. Therefore an in-depth exploration of economic valuation methods is necessary.

4.4.1 Operationalization

In the Netherlands there are several institutions that keep track of residential real estate values over time using indexes. These indexes, for example the House Price Index of Statistics Netherlands, make use of strict methods. Statistics Netherlands for example uses the Sales Price Appraisal Ratio method (CBS, 2008). In the house price index in Figure 4, the depreciation of money as a result of inflation and increasing purchasing power is taken into account. Due to the limitations of this research in resources and time and because the development of residential real estate values is measured over a relatively short period of time, transaction prices are not adjusted in this research. For similar reasons and the fact that this research topic doesn't fit fair and square within an economic valuation method, a simplified method is used in order to collect the data appropriate. By using data that reflects the price paid for a house, the value of residential properties can be determined in a relatively simple way. The development of residential real estate values is determined on the basis of the progress of the transaction prices in the selected neighbourhoods relative to similar objects in the immediate vicinity of the neighbourhood examined. The transaction prices reflect the price that a homebuyer has paid for a house. By dividing the transaction price by the floor space per property, creates of measurement unit that can be compared over time.

4.4.2 Data collection

A complicating factor in measuring the dependent variable is that transaction prices in the Netherlands are kept, independently by one another, by the Dutch Land Registry Office and the Association of Real Estate Brokers and Real Estate Experts. Both of which do not make their data available to the public. Subsequently several commercial businesses possess similar data, but make this data only available for a fee.

The data used to collect the value of residential real estate development is derived from primary sources and other than the data collected from the survey is not empirical. Since transaction prices of properties are not open to the public in the Netherlands, this is an obvious way to determine the price. With the help of several real estate agencies access has been granted to the appropriate transaction data in order to investigate the four neighbourhoods and adjacent residential properties as reference material. Through the various software

packages that they have access to, transaction data can be recalled. This information includes the transaction price and transaction date of a property, the type of property and the total floor area (lot excluded). Based on these data, a transaction price per square meter of floor area is determined over time.

4.5 Case selection

In order to come up with a balanced comparison of cases it is important to select comparable cases with similar characteristics to reduce the amount of 'dirty data' in the statistical analysis. Also, in selecting appropriate cases there has also looked at relevant literature, among which were references from other empirical investigations. The selecting of the four cases is based on the following directives.

- A housing project of recent date: Cases are selected based on the date of completion in or approximately beyond the year 2000. At first this is of importance for the purposes of the availability of data. Secondly, in view of recommendations towards future residential real estate development there are supposedly more lessons to learn from recently developed projects compared to projects of forty years or older. Chapter two has demonstrated that the development on the housing market over time cannot be isolated. They are affected by social, cultural and economic developments among others.
- Distribution over different regions in The Netherlands: Since this research concentrates on the Dutch housing market, all four cases should not be concentrated in one city.
- Clear demarcation: Consulting professionals and other references has resulted in projects with a clear spatial delineation in a sense that each project can be dissociated from its environment.
- Urban environment: In 2006 Visser, Dam & Noorman state that in urban environments, the social characteristics of the living environment is also of much greater importance than in the countryside (Visser, Dam, & Noorman, 2006).

These four directives, combined with consulting various real estate developers by profession at Heijmans and Proper Stok, have resulted in the next four cases which have been selected; Het Funen (Amsterdam), the recent development of a vacant lot near the old city centre of Amsterdam; De Haverleij ('s-Hertogenbosch), a recent development on an expansion site near the city of 's-Hertogenbosch; Meer en Oever, (Amsterdam), a recent redevelopment of a former expansion site in Amsterdam and Chassé Park (Breda), the recent redevelopment of a former army barracks.

4.6 Reliability and validity

For the results and repeatability of this research it is of great importance to attain a high degree of reliability and validity. A combination of methods is applied to this study in order to increase the degree of validity and reliability. Both methods (case study qualitative and quantitative survey) used in this research eliminate each other drawbacks. The case study research offers possibilities for a more thorough investigation into the 'natural environment'. A survey will result in few dirty data and deviates little from the research question. One

drawback to a survey and the data obtained by others in this study is that both relate to one moment in time. However; the data will be recurrently collected. This offers advantages such as the possibility of doing a post-test or otherwise similar research. A great deal of attention is spent on obtaining the necessary data, of which generally is little discussion about. The survey of the Netherlands Housing Research and the registration of the transaction figures are obtained systematically by means of mixed methods. A systematic approach is also pursued in collecting the data through the survey.

Regarding validity, external influences cannot be excluded. Also, the multiple definitions defining social capital, can damage the validity. This is resolved by means reaching out to existing concepts and definitions. When looking for a working definition there is affiliated with earlier academic work in the field of social capital. The validity of the content of the concept of social capital is guarded by the establishment of a measurement that includes the comprehensive understanding of social capital in reference to the research goal. Because of its complexity combined with the difficulties regarding the available data, there is no such comprehensive understanding of the concept of residential real estate values. This measurement provides a simplified representation of reality.

Part 2: Empirical Research

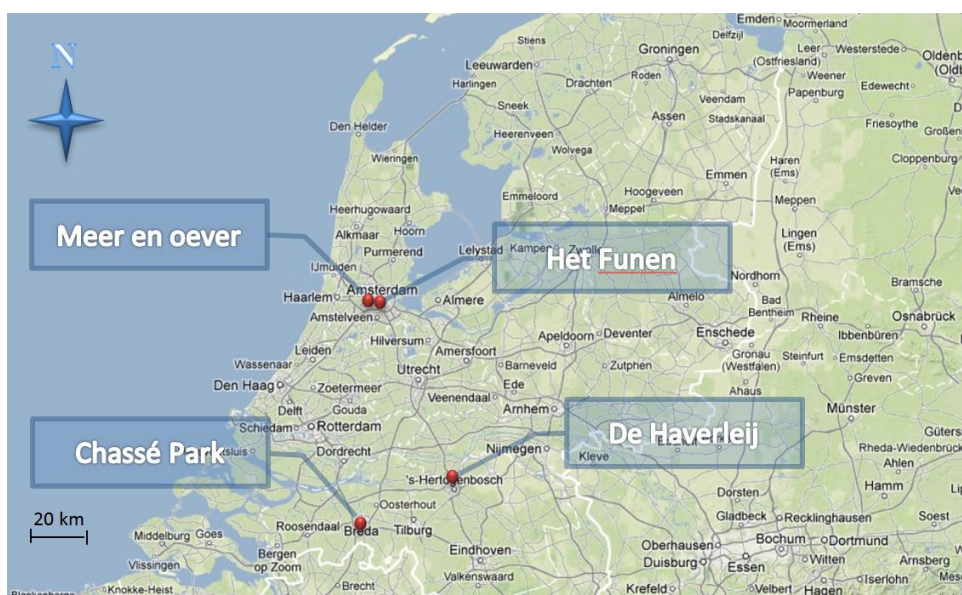
5. General Introduction

In this second part, the empirical research that has been carried out is described. At first the spatial delineation of this study is explained and the methods used are described. Then, per case a description is given of the environment, based upon the history of its location, in order to form a clear picture of the area. The aim of which is to ensure current developments are in the proper context. The length of each description is dependent on the information available. For example, one of the cases in Amsterdam is situated in a dynamic environment that has been evolving since the 17th century, while the location of another case has only recently been developed. In addition, recent statistics for each case are listed. Then the results and the analysis of these results are discussed. Finally, the description of each case will end with a partial conclusion.

5.1 Delineation case study areas

To answer the main and sub-questions, this research actually consists of two measurements. One of which measures the level of social capital and the other measures the development of residential real estate values. The results per case study area are compared to the reference material in the vicinity of each selected neighbourhood. Figure 5 displays the location of each of the four case study areas on a map of the Netherlands. The spatial delineation of each case and its reference material together with other specifications for both measurements appear in this section. It is important to note that the spatial delineation in the two measurements is not alike. The spatial delineation is largely dependent on the data available and will be elaborated in the next paragraphs. Successively, the measurement of social capital and value development are discussed.

Figure 5: Location case study areas



GeoBasis DE/BKG 2012; Google 2009

5.1.1. Independent variable

To measure the level of social capital in this research, the survey data from the Netherlands Housing Research 2009 has been used. On the basis of which a survey is plotted in the four selected neighbourhoods.

Table 5 shows for each of the four selected neighbourhood the spatial delineation of the neighbourhoods and the reference material used in the measurement of social capital. The survey plotted in the four case study areas is proportionally distributed among the residents of the four selected neighbourhoods. The results thereof are compared with the data from the Netherlands Housing Research 2009. This data covers the entire four-digit postcode area to which the selected neighbourhoods belong. It has not been possible to preclude respondents that had participated in the Netherlands Housing Research 2009 survey and that had also participated in the survey plotted in this study.

Table 5: Spatial delineation independent variable social capital

| Project name | Het Funen | Meer en Oever | De Haverleij | Chassé Park |
|-------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| <u>Selection neighbourhood</u> | Comprising the whole neighbourhood | Comprising the whole neighbourhood | Comprising the whole neighbourhood | Comprising the whole neighbourhood |
| <u>Selection reference material</u> | Postal code area 1018 | Postal code area 1068 | Postal code area 5221 | Postal code area 4811 |

Table 6 below indicates the number of questionnaires distributed among the residents of each of the four selected neighbourhoods. The surveys were randomly distributed in the selected neighbourhoods. Distribution of the questionnaires in The De Haverleij was based on an equal distribution over the subareas. More questionnaires were distributed among residents in Slot De Haverleij, as this subarea is by far the largest subarea within this particular neighbourhood. The aim was to monitor the quality of the survey by the personal approach of respondents and a proportionate and homogeneous distribution among the residents of different neighbourhoods (Saunders, et al., 2008; Vennix, 2005, pp. 126-131).

Table 6: Survey distribution independent variable social capital

| Neighbourhood | Subproject | Number of questionnaires distributed |
|------------------|-------------------|--------------------------------------|
| Het Funen | - | 100 |
| Chassé Park | - | 100 |
| Meer en Oever | - | 100 |
| The De Haverleij | Slot De Haverleij | 16 |
| | Holterveste | 12 |
| | Zwaenstede | 12 |
| | Daliënwaerd | 12 |
| | Wuyvenhaerd | 12 |
| | Velderwoude | 12 |
| | Leliënhuyze | 12 |
| | Beeckendael | 12 |

5.1.2 Dependent variable

The selection of research areas used to determine the development of residential real estate values has already been briefly put. The development of these values is derived from transaction data, in the courtesy of several real estate agents. In determining the development of residential real estate values in this study, no distinction is made in house type. In many cases the real estate agents concerned have been consulted when selecting similar residential properties as reference material. This includes similar environmental characteristics, which could interfere with the analysis of the results. The transaction data used in this research is not reducible to an individual residential property.

Transaction figures of recent years have been obtained at street level. The list of selected streets in the case study areas and reference areas is shown below in Table 7. Where possible, all streets were included in the selected neighbourhoods and in other cases as many streets were included. The aim at selecting properties used as reference was to select similar properties in a similar living environment compared to the four selected neighbourhoods.

Table 7: Spatial delineation dependent variable residential real estate value

| Project name | Het Funen | Meer en Oever | De Haverleij | Chassé Park |
|--|---|------------------------------------|--|---|
| <u>Selection streets in selected neighbourhood</u> | Funenpark, Cruquiuskade | Geer Ban, Meer en Vaart, Oeverpad, | Holterveste, Parcivalring, Florimont, Zwaenenstede, Daliënwaerd, Wuyvenhaerd, Velderwoude, Leliënhuyze, Beekendael | Coullissen, Het Bolwerk, Keizerstraat, Nonnenveld |
| <u>Selection streets reference material</u> | Borneolaan, Czaar Peterstraat, Dirk Vreekenstraat | Osdorperban, | Dukaatstraat, Duitlaan, Oeverwaluw, Dorpstraat <u>Empel</u> : Graanakker, Akkerpad, Weegbree, Hondsdraf, Papeweide, Biezenakker, Breeakkers, Rijstveld, Waterlelie, Gaffel, Wateringen <u>Rosmalen</u> : Vlietdijk, Coupletweg, Grootte Wielenlaan | Nonnenveld, Vierwindenstraat, Kloosterlaan, Vlaszak, JF Kennedylaan, Kapucijnenhof, Rijngraafstraat |

In the vicinity of Het Funen the Czaar Peter Street and several streets on the other side of the Sporenboog were selected as reference material. The latter is a neighbourhood with a relatively large proportion of recently built construction projects, similar to the properties in Het Funen. This neighbourhood mirrors Het Funen on the other side of the railroad track to a great extent.

Near Meer en Oever the Osdorperban was selected as reference material. This is a major thoroughfare within the neighbourhood with many new construction projects along to its sides. Meer en Oever is also adjacent to a major thoroughfare, and moreover there is also a main road which passes through the neighbourhood.

For all subareas in De Haverleij transaction figures have been obtained. The selection of the properties for reference material has been complex. In the immediate vicinity, only a limited number of comparable

reference dwellings were to be found in the nearby town of Engelen. However, these properties mainly consist of non-similar, detached houses. For this reason the search area was enlarged to the wider area, in search of properties which serve as reference material. These were found in two newly developed locations near Empel and Rosmalen, similar to De Haverleij at an equal distance from the city centre of 's-Hertogenbosch. Equivalent to De Haverleij these two expansion sites in Empel and Rosmalen serve as expansion areas for the city of 's-Hertogenbosch.

A similar problem has materialized in Chassé Park, Breda. There are few comparable reference houses in the immediate vicinity of this neighbourhood. The Chassé Park is located near the city centre of Breda, which mostly consists of relatively small and aged homes. In that sense the residential properties in the immediate vicinity of Chassé Park generally differ significantly from the properties inside of Chassé Park. For this reason other reference dwellings were found at other locations near the city centre of Breda. More specifically, for this search recently developed properties near the city centre of Breda were sought after.

In addition, in the course of this research there were some general limitations to the collection of transaction data. The digital registration of transaction data is limited to recent sales, since only relatively recent sales have been recorded digitally. The examined projects in this study are of a recent date, in order to avoid related issues. Searching for transaction prices of residential properties has also other limitations and is time consuming. Searching for data in most software packages is limited in its spatial delineation. For example, queries cannot be addressed to an individual residential property or construction site, but should contain a street name or the name of a cities district instead.

5.2 Analysis

The results of this research its two measurements are being introduced in this section. Section 5.2.1 begins by highlighting the turn-out for each of the four cases, regarding the results of measuring the level of social capital as a result of the plotting of the survey. Section 5.2.2 highlights the results of measuring the dependent variable with respect to the development of residential real estate values. The data obtained and the analyses derived from this data, for both of the measurements, are being dealt with in this section.

5.2.1 Analysis social capital

After distributing the survey, 225 questionnaires were filled in digitally, or returned by mail. A large majority (193) was sent back using the enclosed return envelope, which were made available through my internship at Heijmans. The survey and transaction figures were imported into separate files using SPSS. For the analysis of social capital, the data obtained from the survey plotted in the neighbourhoods selected in this research were put together with the data from the Netherlands Housing Research 2009. This allows for making informed statements about the degree of social capital. In addition to merging the two databases, the variables to be analysed were isolated from the extensive dataset. The various items from the questionnaires were recoded into a quantitative rating system, except for the nominal items. Items which were given a positive response

were awarded with a positive score and items which were given a negative response were awarded with a negative score.

The scores on some of the variables had to be transformed with respect to the original Netherlands Housing Research data, in order to achieve an unweighted sum variable for "social capital". The code book which was used for the statistical analysis and corresponds to the surveys questionnaire is to be found in Appendix 3. It is important to note that the various items differ, dependent on the number of response categories ranging from a 3-point, 4-point and a 5-point Likert scale.

To start with, per case each single item has been analysed individually on the basis of the data obtained from the questionnaires that are plotted in the case study areas in comparison to the data from the four-digit postal code area from the Netherlands Housing Research 2009. All these variables are statistically tested to determine whether observed differences are statistically significant. The outcome of these analyses for each individual variable provides a higher level of detail, so that it is possible to better interpret any discrepancies to be found. An overview of these individual statistical tests is to be found in *Appendix 4*.

For each case, also an analysis is carried out in order to determine the sum of the items which are related to the level of social capital. These sum variables were also statistically tested to determine whether the differences that are to be found are statistically significant. Of all statistical tests executed, one is described in detail and can be found in *Appendix 5*. In this analysis the measurement of the degree of social capital is checked by means of composing a sum variable. An overview of the outcomes of all statistical tests is to be found in *Appendix 6* and can be used as reference in interpreting the results of the four cases, described in the following chapters.

5.2.2 Analysis residential real estate values

Based on the transaction data obtained, the course of the development of residential real estate values over time is determined for each of the four areas in comparison to the selected reference houses nearby.

The available data for some of the projects has proven to be limited. For example, for the reference properties in the Chassé Park the quantity of available data was limited, which results in a decrease of the reliability of this particular data. This also applies for the data available in the De Haverleij. For the other two cases, Het Funen and Meer en Oever data was available in higher quantities. One possible reason could be the fact that there are more similar properties in the immediate vicinity of these two neighbourhoods.

In the following sections the development of residential real estate values for each of the four cases is compared to the course of the residential real estate values of the reference dwellings. This is based on composing a measurement unit assuming the price per square meter of floor space over time, which is derived from the available transaction figures. The data available cannot be examined over the same time period for all of the four cases. Since transaction figures are not available earlier than 2008 in case of Het Funen, while transaction figures for the Chassé Park date back to 2004.

6. Case: Het Funen

6.1 Introduction

Het Funen is a dynamic area with a history that stretches several centuries back in time. In comparison to the other three cases, the following section will be more extensive for this particular reason. The description of Het Funen is based on secondary sources mostly and will end in a more detailed, static analysis of the present situation in the selected areas.

Subsequently the results are outlined, describing the results of the statistical tests concerning the level of social capital in Het Funen in comparison to the four digit postal code area it belongs to. Next, the second measurement is explained, describing the statistical tests related to the development of residential real estate values in Het Funen compared to the reference properties.

6.2 Context

The map below in Figure 6, derived from the city of Amsterdam its Land use plan for the Eastern Islands, indicates the location of Het Funen. Het Funen is delimited on the map below by an orange-dashed line near the middle.

Figure 6: Map of Land use plan “Oostelijke Eilanden Amsterdam” (Gemeente_Amsterdam, 2011)



The new district ‘Het Funen’ in Amsterdam is situated to the east of the city centre, near the island of Oostenburg. Oostenburg is an island that is part of the three eastern islands, which were artificially constructed in the 17th century as part of the extension of the city. This part of the city goes back to the time of the Dutch East India Company, who built many ships here. It is famous for its first social housing project in the Netherlands and the area also offers the first playground for working class children, the ‘Oosterspeeltuin’ (Nieborg, 2005). Het Funen is located between the Czaar Peterdistrict, the Sporenboog to the north, one of the

country's busiest railway lines and the Nieuwe Vaart/Cruquiuskade to the south. The Czaar Peter district, bounded by Het Funen to the west and Oostenburg to the west, is a 19th century working-class neighbourhood with a high density of buildings. The streets in this neighbourhood are generally narrow, straight and long with narrow, shallow houses, built for the former employees of 'Werkspoor' (Nieborg, 2005).

Since the 1970s some of the buildings in the area have been replaced by new buildings. Together these three neighbourhoods consist of approximately 4000 inhabitants, of which 50 per cent are of non-Dutch origin. On a total of approximately 2300 homes, three quarters consist of a maximum of two rooms. The percentage of social housing is high in the two districts nearby, Czaar Peter and Oostenburg. Social housing is 83 per cent versus 12 per cent private rental properties and 5 per cent owner-occupiers.

In the 1970s, the former port and transshipment area of Van Gendt en Loos, east of the Czaar Peter district, was closed. After which it became available for housing, although the site had some complications. Compared to other parts of the inner city the level of facilities and social services was low. Recently a tram line was constructed to this part of the city of Amsterdam. The presence of small, mostly two-room dwellings led to much residential mobility in the Czaar Peter district, which had negative consequences for social cohesion in the area. There has been a lack of maintenance of buildings and at times there has been nuisance of youth and drugs. Until the latest developments the site was used by the city's parking management as a storage facility, consequently having a poor image. Many complicating factors have meant that the site has only recently been developed (Nieborg, 2005).

The process leading up to the current redevelopment of the area began in the mid-1990s by IBC in collaboration with the municipality of Amsterdam with the shared ambition to achieve a residential area in a park like setting (Heijmans_Vastgoed_Realisatie & Stadsdeel_Amsterdam_Centrum, 2007). In 2005 a consult of nearby residents by the Verwey-Jonker Institute revealed several concerns concerning the redevelopment of the area. One of their main concerns was that the new residents, assumed to be primarily young and affluent residents, would feel less connected to the neighbourhood and would be absent during daytime. They feared this would affect the atmosphere in the neighbourhood and the social cohesion. Consequently this would have negative effects on the singularity of the neighbourhood. There were also concerns that the prevailing freedom of action would have to make way for regulatory urge (Nieborg, 2005).

After the takeover of IBC Real Estate by Heijmans in 2001, the project was continued by Heijmans Real Estate together with the municipality. The urban development plan, 'Hidden Delights' by Frits van Dongen of Architecten Cie, was the result. The construction of the outskirts protects the inner area against train noise and it also contains the parking facilities. The inner area has a greater diversity of buildings with modern, sheltered 'courtyards' in a park like setting. This creates a continuous high quality public area without individual gardens. The buildings consist of a mix of largely private sector housing and to a lesser extent social housing (Heijmans_Vastgoed_Realisatie & Stadsdeel_Amsterdam_Centrum, 2007). The next figure, Figure 7 below, shows a plan view and a more detailed view of the recent developments. The newly developed Het Funen is

identified by the orange line in the left picture. The picture to the right shows a view of the Funenpark containing several of smaller housing blocks in the inner area and one of the bigger apartment blocks, which surround the project, at the back.

Figure 7: Top Plan view and detailed view Het Funen (Architecten_cie, n.b.; Heijmans, n.b.-a)

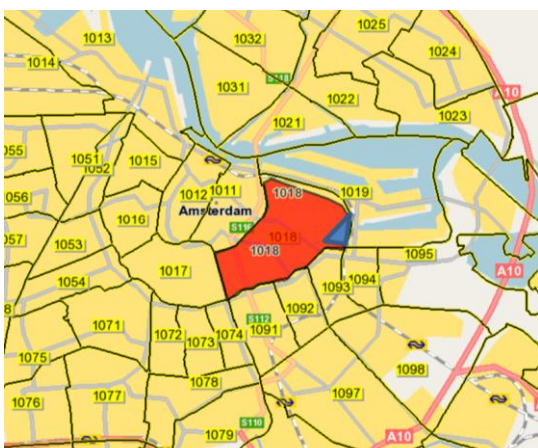


The project was completed in 2009 and includes 551 homes and 3200 m² commercial space. The housing complex on the railway side is composed of 198 apartments and the housing complex near the canal at the Cruquiuskade is composed of 106 apartments. The Funenpark, located in the middle of the project, consists of 247 homes in 16 blocks across the inner area.

6.3 General data

The number of respondents in Het Funen that completed the questionnaire is 51. The total number of respondents in the four-digit postcode area 1018, based on the data of the Netherlands Housing Research 2009, is 58. In this last survey, not every respondent answered to all questions. The maximum response for each question is therefore 58, but could also be lower for some items. On the map, in Figure 8, below the four digit postcode area 1018 in Amsterdam can be seen of which Het Funen is part. The postcode area is marked by the red area and Het Funen is marked by the smaller blue triangular area to the right.

Figure 8: Map of postcode areas Amsterdam (Geodan, 2012)



An overview of the results is shown in Table 8. The majority of households in Het Funen consist of three persons, the vast majority of which are families with one or more children. The number of persons per household is significantly higher compared to the average number of persons in the entire four-digit postcode

area (*Independent samples t-test* $t=3,594$, $p=0,000$; r (medium effect) = $\sqrt{\frac{t^2}{t^2+df}} = \sqrt{\frac{3,594^2}{3,594^2+107}} = 0,328$).

Respondents in Het Funen generally live in an owner-occupied dwelling, which are dwellings owned by the households who live in them (OESD, 2003). Most of which are multi-dwelling units, were as most dwellings in the surroundings neighbourhoods are primarily rental properties (*Chi-square test* $X^2=35,122$, $p=0,000$; *Cramers V* (large effect) = 0,593).

Table 8: General data - Het Funen, Amsterdam

| | | Het Funen (%) | Reference area (%) | Total (%) |
|---|---|---------------|--------------------|-----------|
| Number of persons per household | 1 | 4 (7,8) | 27 (46,6) | 31 (28,4) |
| | 2 | 18 (35,3) | 17 (29,3) | 35 (32,1) |
| | 3 | 9 (17,6) | 6 (10,3) | 15 (13,8) |
| | 4 | 15 (29,4) | 2 (3,4) | 17 (15,6) |
| | More than 4 | 5 (9,8) | 6 (10,3) | 11 (10,1) |
| Total | | 51 (100) | 58 (100) | 109 (100) |
| Composition of household | Couple/fixed partners without child(ren) living at home | 16 (31,4) | 11 (35,5) | 27 (32,9) |
| | Couple/fixed partners with child(ren) living at home | 29 (56,9) | 10 (32,3) | 39 (47,6) |
| | Couple/fixed partners with child(ren) living at home and other(s) | 0 (0,0) | 1 (3,2) | 1 (1,2) |
| | One parent with child(ren) living at home | 1 (2,0) | 2 (6,5) | 3 (3,7) |
| | One parent with child(ren) living at home and other(s) | 0 (0,0) | 1 (3,2) | 1 (1,2) |
| | Another composition | 5 (9,8) | 6 (19,4) | 11 (13,4) |
| Total | | 51 (100) | 31 (100) | 82 (100) |
| Owner-occupied property or rented house | Owner-occupied property | 46 (90,2) | 16 (32,7) | 62 (62,0) |
| | Rented house | 5 (9,8) | 33 (67,3) | 38 (38,0) |
| Total | | 51 (100) | 49 (100) | 100 (100) |
| Type of property | Detached, semi-detached, villa, bungalow, country house | 12 (23,5) | 1 (2,0) | 13 (12,7) |
| | Flat, tenement, apartment, maisonette | 38 (74,5) | 45 (88,2) | 83 (81,4) |
| | None of these | 1 (2,0) | 2 (3,9) | 3 (2,9) |
| | Refused to answer | 0 (0,0) | 3 (5,9) | 3 (2,9) |
| Total | | 51 (100) | 51 (100) | 102 |

Details on the physical living environment in Het Funen are listed below in Table 9. Most participants to the survey in Het Funen are satisfied with their living environments and satisfied or very satisfied with the presence

of attractive buildings there. Regarding the latter, residents in Het Funen are more positive compared to all the residents in the postcode area ($Mann-Whitney U=580,5, p=0,000; r (large\ effect)=\frac{z}{\sqrt{N}}=\frac{-5,199}{\sqrt{102}}=-0,515$). When choosing to move to Het Funen, the neighbourhood gave the decisive factor for most residents.

Table 9: Physical living environment - Het Funen, Amsterdam

| | | Het Funen (%) | Reference area (%) | Total (%) |
|--------------------------------------|--|---------------|--------------------|-----------|
| Satisfaction with living environment | Dissatisfied | 1 (2,0) | 2 (3,9) | 3 (2,9) |
| | Neither satisfied, nor dissatisfied | 2 (3,9) | 5 (9,8) | 7 (6,9) |
| | Satisfied | 20 (39,2) | 25 (49,0) | 45 (44,1) |
| | Very satisfied | 28 (54,9) | 19 (37,3) | 47 (46,1) |
| Total | | 51 (100) | 51 (100) | 102 (100) |
| Presence attractive buildings | Totally disagree | 0 (0,0) | 1 (2,0) | 1 (1,0) |
| | Disagree | 1 (2,0) | 6 (11,8) | 7 (6,9) |
| | Neither agree, nor disagree | 1 (2,0) | 10 (19,6) | 11 (10,8) |
| | Agree | 19 (37,3) | 27 (52,9) | 46 (45,1) |
| | Strongly agree | 30 (58,8) | 7 (13,7) | 37 (36,3) |
| Total | | 51 (100) | 51 (100) | 102 (100) |
| Choice neighbourhood/house | For this property | 20 (39,2) | 6 (54,5) | 26 (41,9) |
| | For this neighbourhood | 7 (13,7) | 1 (9,1) | 8 (12,9) |
| | For this property and this neighbourhood | 18 (35,3) | 3 (27,3) | 21 (33,9) |
| | No (this was the first available property) | 6 (11,8) | 1 (9,1) | 7 (11,3) |
| Total | | 51 (100) | 11 (100) | 62 (100) |

6.4 Results social capital

Feeling of belonging

An overview of the answers given in the survey and Netherlands Housing Research 2009 can be seen in Table 10. The survey reveals, residents to Het Funen feel quite attached to their neighbourhood. They feel significantly more at home compared to the larger postcode area ($Mann-Whitney U=1003, p=0,015; r (little\ to\ medium\ effect)=\frac{z}{\sqrt{N}}=\frac{-2,422}{\sqrt{102}}=-0,240$). The residents also indicate it is very important to feel at ease in their neighbourhood and to live in a neighbourhood without a bad image. The residents of Het Funen require higher demands of their living environment, compared to the postcode area. They significantly think it is more important to feel at home within their neighbourhood ($Mann-Whitney U=918, p=0,001; r (medium\ effect)=\frac{z}{\sqrt{N}}=\frac{-3,277}{\sqrt{104}}=-0,321$) and to live in a neighbourhood without a bad image ($Mann-Whitney U=1056, p=0,034; r (little\ effect)=\frac{z}{\sqrt{N}}=\frac{-2,116}{\sqrt{104}}=-0,207$).

Table 10: Feeling of belonging - Het Funen, Amsterdam

| | | Het Funen (%) | Reference area (%) | Total (%) |
|--|-----------------------------|---------------|--------------------|-----------|
| Feeling attached to neighbourhood | Totally disagree | 2 (3,9) | 1 (2,0) | 3 (2,9) |
| | Disagree | 1 (2,0) | 2 (3,9) | 3 (2,9) |
| | Neither agree, nor disagree | 10 (19,6) | 10 (19,6) | 20 (19,6) |
| | Agree | 24 (47,1) | 33 (64,7) | 57 (55,9) |
| | Strongly agree | 14 (27,5) | 5 (9,8) | 19 (18,6) |
| Total | 51 (100) | 51 (100) | 102 (100) | |
| Feeling at home in neighbourhood | Disagree | 1 (2,0) | 2 (3,9) | 3 (2,9) |
| | Neither agree, nor disagree | 2 (3,9) | 3 (5,9) | 5 (4,9) |
| | Agree | 30 (58,8) | 39 (76,5) | 69 (67,6) |
| | Strongly agree | 18 (35,3) | 7 (13,7) | 25 (24,5) |
| Total | 51 (100) | 51 (100) | 102 (100) | |
| Opinion on feeling at home in neighbourhood | Unimportant | 0 (0,0) | 2 (3,8) | 2 (1,9) |
| | Important | 17 (33,3) | 32 (60,4) | 49 (47,1) |
| | Very important | 34 (66,7) | 19 (35,8) | 53 (51,0) |
| | Total | 51 (100) | 53 (100) | 104 (100) |
| Opinion on living in a neighbourhood without a bad image | Completely unimportant | 1 (2,0) | 0 (0,0) | 1 (1,0) |
| | Unimportant | 6 (11,8) | 10 (18,9) | 16 (15,4) |
| | Important | 22 (43,1) | 32 (60,4) | 54 (51,9) |
| | Very Important | 22 (43,1) | 11 (20,8) | 33 (31,7) |
| Total | 51 (100) | 53 (100) | 104 (100) | |

Feeling of safety

The only complaint that residents generally have about the environment in Het Funen is that there sometimes happens to be waste on the streets. They experience significantly less disruption from their direct neighbours (*Mann-Whitney* $U=1091,5$, $p=0,034$; r (little effect) $=\frac{z}{\sqrt{N}}=\frac{-2,114}{\sqrt{102}}=-0,209$) and there is less graffiti on walls and buildings (*Mann-Whitney* $U=921$, $p=0,004$; r (little effect) $=\frac{z}{\sqrt{N}}=\frac{-2,895}{\sqrt{102}}=-0,287$). On the question whether one is afraid to be harassed or robbed in their neighbourhood the respondents in Het Funen usually indicate they are not afraid of this. The entire postcode area scored significantly lower on this question (*Mann-Whitney* $U=945$, $p=0,007$; r (little effect) $=\frac{z}{\sqrt{N}}=\frac{-2,692}{\sqrt{102}}=-0,267$). In Het Funen the respondents do not expect any positive or negative future developments in their neighbourhood, but current situations will remain the same according to their expectation. With respect to future expectations, Het Funen scored higher compared to the three surveyed areas. The results of the questionnaire and Netherlands Housings Research 2009 on this topic can be seen below in Table 11.

Table 11: Feeling of Safety - Het Funen, Amsterdam

| | | Het Funen (%) | Reference area (%) | Total (%) |
|-----------------------------|--------------|---------------|--------------------|-----------|
| Graffiti on walls/buildings | Often | 0 (0,0) | 6 (11,8) | 6 (5,9) |
| | Sometimes | 16 (31,4) | 23 (45,1) | 39 (38,2) |
| | Almost never | 35 (68,6) | 22 (43,1) | 57 (55,7) |
| Total | 51 (100) | 51 (100) | 102 (100) | |

| | | | | |
|--|-----------------------------|-----------|-----------|-----------|
| Rubbish on streets | Often | 6 (11,8) | 12 (23,5) | 18 (17,6) |
| | Sometimes | 22 (43,1) | 24 (47,1) | 46 (45,1) |
| | Almost never | 23 (45,1) | 15 (29,4) | 38 (37,3) |
| | Total | 51 (100) | 51 (100) | 102 (100) |
| Nuisance direct neighbours | Often | 0 (0,0) | 2 (3,9) | 2 (2,0) |
| | Sometimes | 5 (9,8) | 11 (21,6) | 16 (15,7) |
| | Almost never | 46 (90,2) | 38 (74,5) | 84 (82,4) |
| | Total | 51 (100) | 51 (100) | 102 (100) |
| Nuisance local residents | Often | 1 (2,0) | 1 (2,0) | 2 (2,0) |
| | Sometimes | 12 (23,5) | 14 (27,5) | 26 (25,5) |
| | Almost never | 38 (74,5) | 36 (70,6) | 74 (72,5) |
| | Total | 51 (100) | 51 (100) | 102 (100) |
| Nuisance youth | Often | 1 (2,0) | 3 (5,9) | 4 (3,9) |
| | Sometimes | 17 (33,3) | 22 (43,1) | 39 (38,2) |
| | Almost never | 33 (64,7) | 26 (51,0) | 59 (57,8) |
| | Total | 51 (100) | 51 (100) | 102 (100) |
| Nuisance noise pollution | Often | 3 (5,9) | 2 (3,9) | 5 (4,9) |
| | Sometimes | 13 (25,5) | 23 (45,1) | 36 (35,3) |
| | Almost never | 35 (68,6) | 26 (51,0) | 61 (59,8) |
| | Total | 51 (100) | 51 (100) | 102 (100) |
| Nuisance smell/dust/dirt | Often | 1 (2,0) | 5 (9,8) | 6 (5,9) |
| | Sometimes | 10 (19,6) | 9 (17,6) | 19 (18,6) |
| | Almost never | 40 (78,4) | 37 (72,5) | 77 (75,5) |
| | Total | 51 (100) | 51 (100) | 102 (100) |
| Afraid to be harassed or robbed in neighbourhood | Strongly agree | 1 (2,0) | 1 (2,0) | 2 (2,0) |
| | Agree | 2 (3,9) | 5 (9,8) | 7 (6,9) |
| | Neither agree, nor disagree | 6 (11,8) | 2 (3,9) | 8 (7,8) |
| | Disagree | 21 (41,2) | 39 (76,5) | 60 (58,8) |
| | Totally disagree | 21 (41,2) | 4 (7,8) | 25 (24,5) |
| | Total | 51 (100) | 51 (100) | 102 (100) |
| Neighbour will improve/deteriorate/remain the same | Deteriorate | 5 (9,8) | 8 (15,7) | 13 (12,7) |
| | Remain the same | 29 (56,9) | 27 (52,9) | 56 (54,9) |
| | Improve | 17 (33,3) | 16 (31,4) | 33 (32,4) |
| | Total | 51 (100) | 51 (100) | 102 (100) |

Social network

In the survey, Het Funen had a significant higher score on almost all variables regarding the social network.

There is significantly more contact with other residents (*Mann-Whitney U=660,5 ,p=0,000; r (medium*

effect) $=\frac{z}{\sqrt{N}}=\frac{-4,472}{\sqrt{102}}=-0,443$). The feeling of joint responsibility within the neighbourhood is also significantly

higher (*Mann-Whitney U=927,5 ,p=0,004; r (little effect)* $=\frac{z}{\sqrt{N}}=\frac{-2,856}{\sqrt{102}}=-0,283$).

Same goes for the pleasant neighbourhood association in Het Funen (*Mann-Whitney U=881,5 ,p=0,001; r (medium effect)* $=\frac{z}{\sqrt{N}}=\frac{-3,250}{\sqrt{102}}=-$

$0,322$). Statistical tests also show that Het Funen is a significantly more 'cozy' neighbourhood with much

solidarity according to its residents (*Mann-Whitney U=917,5 ,p=0,006; r (little effect)* $=\frac{z}{\sqrt{N}}=\frac{-2,731}{\sqrt{102}}=-0,270$). Also,

residents of the larger postcode area more often hardly know each other (*Mann-Whitney U=975,5 ,p=0,021; r*

(little effect) $=\frac{z}{\sqrt{N}}=\frac{-2,308}{\sqrt{102}}=-0,229$). The results of the questionnaire on 'social network' can be seen in Table 12.

As in the larger postcode area, residents are satisfied with the composition of the population in their neighbourhood.

Table 12: Social network - Het Funen, Amsterdam

| | | Het Funen (%) | Reference area (%) | Total (%) |
|--|-----------------------------|---------------|--------------------|-----------|
| Lots of contact with other local residents | Totally disagree | 0 (0,0) | 2 (3,9) | 2 (2,0) |
| | Disagree | 5 (9,8) | 23 (45,1) | 28 (27,5) |
| | Neither agree, nor disagree | 12 (23,5) | 12 (23,5) | 24 (23,5) |
| | Agree | 26 (51,0) | 11 (21,6) | 37 (36,3) |
| | Strongly agree | 8 (15,7) | 3 (5,9) | 11 (10,8) |
| Total | | 51 (100) | 51 (100) | 102 (100) |
| Feeling joint responsibility within neighbourhood | Totally disagree | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | Disagree | 1 (2,0) | 6 (11,8) | 7 (6,9) |
| | Neither agree, nor disagree | 3 (5,9) | 8 (15,7) | 11 (10,8) |
| | Agree | 32 (62,7) | 30 (58,8) | 62 (60,8) |
| | Strongly agree | 15 (29,4) | 7 (13,7) | 22 (21,6) |
| Total | | 51 (100) | 51 (100) | 102 (100) |
| Pleasant neighbourhood association | Totally disagree | 0 (0,0) | 1 (2,0) | 1 (1,0) |
| | Disagree | 1 (2,0) | 3 (5,9) | 4 (3,9) |
| | Neither agree, nor disagree | 6 (11,8) | 11 (21,6) | 17 (16,7) |
| | Agree | 30 (58,8) | 34 (66,7) | 64 (62,7) |
| | Strongly agree | 14 (27,5) | 2 (3,9) | 16 (15,7) |
| Total | | 51 (100) | 51 (100) | 102 (100) |
| 'Cozy'/sociable neighbourhood with much solidarity | Totally disagree | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | Disagree | 4 (7,8) | 13 (25,5) | 17 (16,7) |
| | Neither agree, nor disagree | 16 (31,4) | 17 (33,3) | 33 (32,4) |
| | Agree | 24 (47,1) | 20 (39,2) | 44 (43,1) |
| | Strongly agree | 7 (13,7) | 1 (2,0) | 8 (7,8) |
| Total | | 51 (100) | 51 (100) | 102 (100) |
| People hardly know each other | Totally disagree | 1 (2,0) | 1 (2,0) | 2 (2,0) |
| | Disagree | 6 (11,8) | 19 (37,3) | 25 (24,5) |
| | Neither agree, nor disagree | 16 (31,4) | 10 (19,6) | 26 (25,5) |
| | Agree | 24 (47,1) | 20 (39,2) | 44 (43,1) |
| | Strongly agree | 4 (7,8) | 1 (2,0) | 5 (4,9) |
| Total | | 51 (100) | 51 (100) | 102 (100) |
| Satisfaction with composition of population | Totally disagree | 2 (3,9) | 0 (0,0) | 2 (2,0) |
| | Disagree | 3 (5,9) | 3 (5,9) | 6 (5,9) |
| | Neither agree, nor disagree | 12 (23,5) | 6 (11,8) | 18 (17,6) |
| | Agree | 24 (47,1) | 38 (74,5) | 62 (60,8) |
| | Strongly agree | 10 (19,6) | 4 (7,8) | 14 (13,7) |
| Total | | 51 (100) | 51 (100) | 102 (100) |

Sum variable

The sum variable is the unweighted sum of the variables related to social capital discussed above. The internal reliability of this scale is tested using Crombach's Alpha, which is not a statistical test, but measures a scale its

consistency. A Cronbach's Alpha of over 7 indicated the scale is consistent (Field, 2005). The Cronbach's Alpha in the case of the sumvariable for Het Funen is 0,811. Therefore it can be stated this scale is consistent.

In comparison to the postcode area, Het Funen scored higher with regard to the presence of social capital, derived from the total score of the sum of variables which relate to the degree of social capital (*Mann-Whitney U=588 ,p=0,000; r (medium to large effect)= $\frac{z}{\sqrt{N}}=\frac{-4,567}{\sqrt{100}}=-0,457$*).

6.5 Results local house price developments

With the assistance of a local real estate agent who was involved with the sale of the properties at the time of completion of the project, the required data has been obtained. Collecting the required data has had its limitations. The transaction data could only be obtained per street. Based on similar property types and location features, in consultation with the local real estate agent, the following streets were selected. This is shown in Figure 9. The blue area covers the Funen. The green streets relate to the location of the reference properties.

Figure 9: Location houses used in determining course of transaction prices (Google, 2012)



Due to a lack of data in some of the quarters, the course of the development of transaction prices in Het Funen in comparison to similar properties in the vicinity of Het Funen cannot be presented. The available data consists of transaction figures over a period of four and a half year, consisting of 37 transactions in Het Funen and 81 transactions of equivalent properties outside of Het Funen. This is expressed in terms of a value based on the transaction price per square meter of surface area in time.

Statistical testing, using SPSS, shows that there are no significant differences between the courses of the development transaction prices within Het Funen in comparison to equivalent properties in its vicinity (*Independent samples t-test p=0,161>0,05 when equal variances are assumed*).

6.6 Sub conclusion

Social capital is to a relatively large extent present in Het Funen in comparison to the greater reference area. This is apparent from the statistical analyses based on the quantitative data described in this chapter.

Combined with the previously described, more qualitative, description of the research area these results provide interesting findings. This paragraph reviews some of these findings, those previously found to be statistically significant.

The feeling of belonging is considered higher in Het Funen, based on statistical significant differences regarding all variables associated. One possible reason could be that many of the present residents are the first residents to Het Funen, while the larger reference area consists mostly of existing buildings. The residents of Het Funen might have been involved already at the time of construction of the project and thus more involved with their neighbourhood than resident at other location. The completion of a new project is followed mostly by various meetings arranged for the new residents, such as information evenings. Further research should be able to provide more explanations and insight with regard to these findings.

The residents of Het Funen experience few inconveniences and feel quite at home in Het Funen in comparison to the larger reference area. Until a short time ago the nearby Czaar Peter district by contrast, has been characterised by a lack of maintenance of buildings and nuisance of drugs and youth. The spatial structure of Het Funen is arranged in such a way that there are no “blind spots”. Therefore every nook and cranny of Het Funen can be monitored by its residents. This may have a positive effect on the maintenance costs of Het Funen.

Furthermore the residents of Het Funen are less afraid to be harassed or robbed in their neighbourhood. A possible explanation for this could be that Het Funen is a restricted traffic zone, while the streets in the immediate vicinity are thoroughfare streets. This could make the neighbourhood less attractive to possible nuisance groups, assuming that the area is solely the destination of its residents. This assumption would also require further research.

In particular the strong social network in Het Funen stands out. A possible explanation could be that many children within the neighbourhood encourage social interactions among its residents. The residents, particularly the parents, may feel more responsible for the neighbourhood in order to enable their children to play in a safe and pleasant environment. This could also help reduce the maintenance costs of the neighbourhood. The greater postcode area, of which only a quarter of the properties have more than two bedrooms, is less suited for families with children. Whereas Het Funen consists of a relatively large number of family homes, the Czaar Peter district is composed of mostly two-bedroom dwellings. Also, the park in the middle of the Funen, a restricted traffic zone, is better equipped for families with children. This restricted traffic zone shows similarities to the socio-physical interventions of the Dutch government in the 1960s and 1970s. The adjacent Czaar Peter district, with its long, narrow streets is probably less attractive to households with children. Secondary data reveals there is much residential movement in parts of the larger reference area, which makes it difficult for a tight social network to arise.

The specific spatial structure of Het Funen, which consists of a traffic free park, allows for many interactions among its residents. Assuming that a in thoroughfare street, allowing for its residents to park near their home, reduces the chance of spontaneous encounters among residents.

The overall score for the level of social capital, based on all variables related to social capital, is relatively high in Het Funen. The mean sum score of social capital for the entire Netherlands Housing Research 2009 is 14, were as the sum score of social capital in Het Funen is just below a score of 19. This is derived from the table in Appendix 6.

A comparative analysis on residential real estate values in Het Funen and the reference area does not provide a significant difference in the development of these values.

Although this has not been investigated, this research gives reason to suspect that the maintenance and management costs in Het Funen are lower. The data shows that residents experience fewer nuisances of graffiti and their immediate neighbours. In addition, the shared sense of responsibility in this neighbourhood is higher in comparison to the larger postcode area. It would be interesting for further research to focus on this presumption.

Furthermore, it is not excluded in this study that the benefits arising from higher levels of social capital have spill over effects on a greater geographical area.

In conclusion, in case of Het Funen the empirical evidence states that a higher degree of social capital does not lead to larger increase in residential property values. On the basis of this research there is insufficient evidence to conclude that the development of residential real estate values is significantly different from the development of residential real estate values of similar properties in the immediate vicinity of Het Funen.

7. Case: De Haverleij

7.1 Introduction

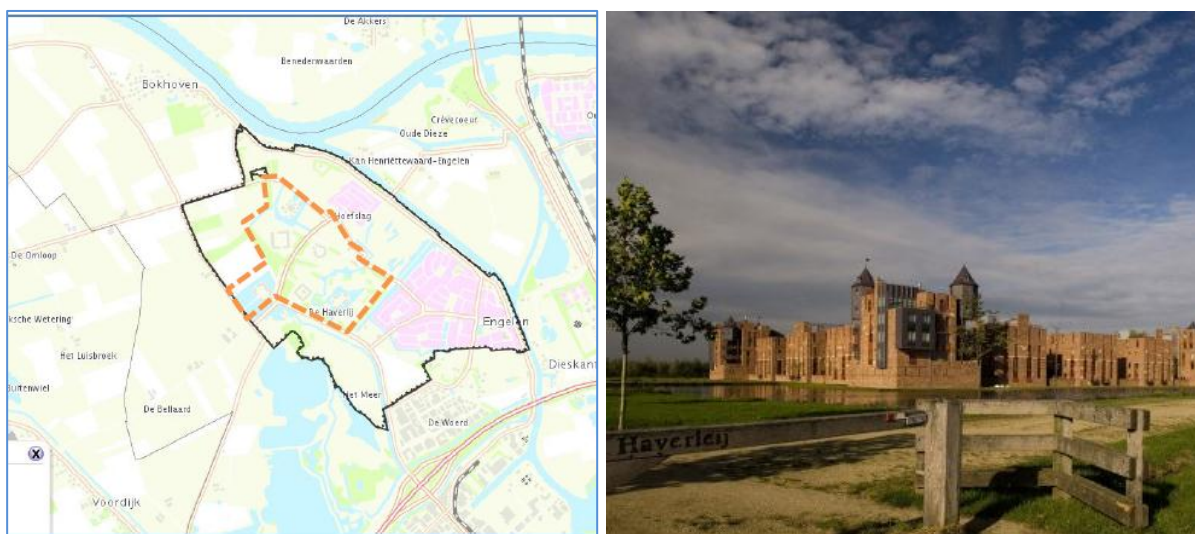
The structure of the description of this case is similar to the section describing the previous case. First, the study area its details are described, on the basis of secondary sources. Then the results of the analysis will be presented on the basis of the two statistical measurements.

7.2 Context

De Haverleij is a residential district, north of the city of 's-Hertogenbosch, built within the contours of a site named the former 'Island of Engelen'. Since the area is located on an expansion site in the outlying of the city of 's-Hertogenbosch, it only has a short history.

Because of its unique urban design De Haverleij is difficult to define in comparison to the other three examined sites. The project is constructed by means of individual castle-like settlements at a distance from each other. It can be considered as being a thematised concept, as described in chapter 2 (Vlaanderen, 2009). Only 10 per cent of the total project area of 225 hectares will be built, leaving an extensive green area (Gemeente_s-hertogenbosch, Heijmans_IBC_Vastgoedontwikkeling, & Bouwfonds_MAB_Ontwikkeling, nb). Despite the grand design of the project area, the individual settlements are characterised by means of high density residential areas, almost as extensive as residential properties in the city centre of 's-Hertogenbosch. The image to the right in Figure 10 illustrates its rural appearance together with the high density of buildings. The majority of the properties consist of one-family terraced housing of which most lack a private yard.

Figure 10: Map of Land use plan "Kom Engelen" and detailed view (Gemeente_s-hertogenbosch, 2012; Heijmans)



Not all nine 'castles' from the original plan have been realized at this time. Currently, seven of the nine castles have been completed. De Haverleij also includes a larger residential area, Slot De Haverleij, constructed as a small settlement. The castles are located at a regular distance from each other of about 200 meters, and are characterized by a continuous ring which surrounds a common courtyard. There is little room for a private garden, resulting in limited options for its residents to retreat outside. The number of encounters with other residents is therefore expected to be relatively high, perhaps resulting in a positive impact on social capital in the neighbourhood.

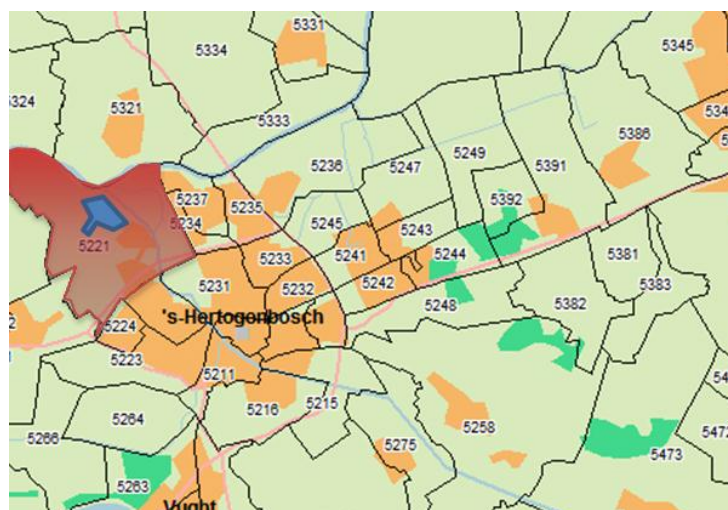
The majority of the smaller settlements are accessible through a single access road. The entire project is located in a green environment and includes an 18-hole golf course (Lörzing, Klemm, Lions, & Soekimin, 2006). The map of the land use plan, to the left of Figure 10, shows the area on a zoning plan map from the town of Engelen. This plan includes De Haverleij. The zoning area is surrounded by a black line, wherein De Haverleij is indicated by means of the dashed orange line.

Despite the fact that De Haverleij lacks a comprehensive dynamic history in comparison to Het Funen, the more contemporary developments are well documented. This is shown in the next figures on the demographics of De Haverleij. The residential area of De Haverleij included 865 homes in 2007 and in 2009 there were a total of 820 households. These numbers will have risen slightly by now, due to the recent completion of an additional smaller settlement by the name of Beeckendael. The proportion of non-western immigrants comprises 3 per cent of the residents in De Haverleij. The majority of the inhabitants, 42 per cent, are between 25 and 45 years old. The proportion of inhabitants younger than 25 is relatively high with a total of 31 per cent, compared to just 7 per cent of its inhabitants being 65 years or older. The proportion of households with children is similar to the proportion of households without children. In De Haverleij 82 per cent of the residents have a paid job, of which 18 per cent have a low income and 47 per cent have a high income. The average WOZ value, a value used in estimating a Dutch municipal tax on the basis of the valuation of immovable property act, of properties in 2007 was € 332,000. The percentage of owner-occupied homes in 2005 was 82 per cent versus a total of 18 per cent of rental properties (Straatinfo, 2009). Overall it can be stated that De Haverleij consists of relatively young and wealthy residents.

7.3 General data

The four digit postcode map displayed in Figure 11, shows an overview of the spatial delineation of the data of the survey in comparison to the larger reference area. De Haverleij is marked by the blue area and the larger reference area is marked in red.

Figure 11: Map of postcode area 's-Hertogenbosch (Geodan, 2012)



The average number of persons per household in De Haverleij is 3,2. The majority of households in De Haverleij consists of three persons. Furthermore, De Haverleij is home to primarily families with one or more children living at home and is mainly made up of owner-occupied, single-family homes. An overview of the results of the survey plotted in De Haverleij is shown below in Table 13.

Table 13: General data – De Haverleij, 's-Hertogenbosch

| | | De Haverleij (%) | Reference area (%) | Total (%) |
|--|--|------------------|--------------------|-----------|
| <i>Number of persons per household</i> | 1 | 1 (1,6) | 0 (0,0) | 1 (1,4) |
| | 2 | 21 (32,8) | 4 (57,1) | 25 (35,2) |
| | 3 | 12 (18,8) | 1 (14,3) | 13 (18,3) |
| | 4 | 24 (37,5) | 1 (14,3) | 25 (35,2) |
| | More than 4 | 6 (9,4) | 1 (14,3) | 7 (9,9) |
| | <i>Total</i> | | 64 (100) | 7 (100) |
| <i>Composition of household</i> | <i>Couple/fixed partners without child(ren) living at home</i> | 21 (32,8) | 3 (42,9) | 24 (33,8) |
| | <i>Couple/fixed partners with child(ren) living at home</i> | 39 (60,9) | 2 (28,6) | 41 (57,7) |
| | <i>Couple/fixed partners with child(ren) living at home and other(s)</i> | 2 (3,1) | 0 (0,0) | 2 (2,8) |
| | <i>One parent with child(ren) living at home</i> | 1 (1,6) | 1 (14,3) | 2 (2,8) |
| | <i>One parent with child(ren) living at home and other(s)</i> | 0 (0,0) | 1 (14,3) | 1 (1,4) |
| | <i>Another composition</i> | 1 | 0 (0,0) | 1 (1,4) |
| | <i>Total</i> | | 64 (100) | 7 (100) |
| <i>Owner-occupied property or rented house</i> | <i>Owner-occupied property</i> | 61 (95,3) | 5 (100,0) | 66 (95,7) |
| | <i>Rented house</i> | 3 (4,7) | 0 (0,0) | 3 (4,3) |
| | <i>Total</i> | | 5 (100,0) | 5 (100,0) |

| | | | | |
|------------------|---|-----------|-----------|-----------|
| Type of property | Detached, semi-detached, villa, bungalow, country house | 51 (79,7) | 5 (100,0) | 56 (81,2) |
| | Flat, tenement, apartment, maisonette | 6 (9,4) | 0 (0,0) | 6 (8,7) |
| | None of these | 7 (10,9) | 0 (0,0) | 7 (10,1) |
| | Refused to answer | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| <i>Total</i> | | 64 (100) | 5 (100) | 69 (100) |

The residents in De Haverleij are satisfied to very satisfied with their living environment, which is evidenced by the survey. Its results, concerning the physical living environment of De Haverleij are presented in **Fout! Verwijzingsbron niet gevonden..** The residents to De Haverleij give a high appreciation in terms of their satisfaction with the presence of attractive buildings. When considering moving to De Haverleij, the living environment was decisive according for most of its respondents.

Table 14: Physical living environment - De Haverleij, 's-Hertogenbosch

| | | De Haverleij (%) | Reference area (%) | Total (%) |
|--------------------------------------|--|------------------|--------------------|-----------|
| Satisfaction with living environment | Dissatisfied | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | Neither satisfied, nor dissatisfied | 1 (1,6) | 0 (0,0) | 1 (1,4) |
| | Satisfied | 28 (43,8) | 2 (40,0) | 30 (43,5) |
| | Very satisfied | 35 (54,7) | 3 (60,0) | 38 (55,1) |
| <i>Total</i> | | 64 (100) | 5 (100) | 69 (100) |
| Presence attractive buildings | Totally disagree | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | Disagree | 1 (1,6) | 0 (0,0) | 1 (1,4) |
| | Neither agree, nor disagree | 2 (3,1) | 0 (0,0) | 2 (2,9) |
| | Agree | 28 (43,8) | 3 (60,0) | 31 (44,9) |
| | Strongly agree | 33 (51,6) | 2 (40,0) | 35 (50,7) |
| <i>Total</i> | | 64 (100) | 5 (100) | 69 (100) |
| Choice neighbourhood/house | For this property | 23 (35,9) | - | - |
| | For this neighbourhood | 12 (18,8) | - | - |
| | For this property and this neighbourhood | 25 (39,1) | - | - |
| | No (this was the first available property) | 4 (6,3) | - | - |
| <i>Total</i> | | 64 (100) | - | - |

7.4 Results social capital

A total of 100 questionnaires were distributed among the various settlements belonging to De Haverleij, of which 64 were completed, see

Table 15. From the data of the Netherlands Housing Research 2009, there is only data to be retrieved from 7 respondents in the four digit postcode area concerned. With the consequence for this research that there is insufficient data to make informed statements about the level of social capital in De Haverleij compared to the larger, four-digit postcode area. More specifically, this analysis does not conform to the central limit theorem.

Table 15: Distribution among smaller settlements – De Haverleij, 's-Hertogenbosch

| Smaller settlements De Haverleij | | N (%) |
|----------------------------------|-------------------|-----------------|
| | Slot De Haverleij | 11 (17,2) |
| | Holterveste | 6 (9,4) |
| | Zwaenenstede | 7 (10,9) |
| | Daliënwaerd | 6 (9,4) |
| | Wuyvenhaerd | 8 (12,5) |
| | Velderwoude | 5 (7,8) |
| | Leliënhuyze | 10 (15,6) |
| | Beeckendael | 11 (17,2) |
| Total | | 64 (100) |

This central limit theorem states that the distribution of a population with fewer than 30 respondents is not normally distributed (Field, 2005). The sample size of the population of the reference area is too small.

Feeling of belonging

The residents of De Haverleij generally respond positively when they are asked whether they feel attached to their neighbourhood, in accordance with Table 16. This also applies when they are asked about whether they feel at home in their own neighbourhood. Furthermore, the residents of De Haverleij find it important to live in an environment where they feel at home. They also find it important to live in an environment without a bad image.

Table 16: Feeling of belonging - De Haverleij, 's-Hertogenbosch

| | | De Haverleij (%) | Reference area (%) | Total (%) |
|---|------------------------------------|------------------|--------------------|-----------------|
| <i>Feeling attached to neighbourhood</i> | <i>Totally disagree</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Disagree</i> | 3 (4,7) | 2 (40,0) | 5 (7,2) |
| | <i>Neither agree, nor disagree</i> | 14 (21,9) | 0 (0,0) | 14 (20,3) |
| | <i>Agree</i> | 33 (51,6) | 3 (60,0) | 36 (52,2) |
| | <i>Strongly agree</i> | 14 (21,9) | 0 (0,0) | 14 (20,3) |
| Total | | 64 (100) | 5 (100) | 69 (100) |
| <i>Feeling at home in neighbourhood</i> | <i>Disagree</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Neither agree, nor disagree</i> | 4 (6,3) | 1 (20,0) | 5 (7,2) |
| | <i>Agree</i> | 39 (60,9) | 3 (60,0) | 42 (60,9) |
| | <i>Strongly agree</i> | 21 (32,8) | 1 (20,0) | 22 (31,9) |
| Total | | 64 (100) | 5 (100) | 69 (100) |
| <i>Opinion on feeling at home in neighbourhood</i> | <i>Unimportant</i> | 0 (0,0) | 1 (16,7) | 1 (1,4) |
| | <i>Important</i> | 18 (28,1) | 3 (50,0) | 21 (30,0) |
| | <i>Very important</i> | 46 (71,9) | 2 (33,3) | 48 (68,6) |
| Total | | 64 (100) | 6 (100) | 70 (100) |
| <i>Opinion on living in a neighbourhood without a bad image</i> | <i>Completely unimportant</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Unimportant</i> | 5 (7,8) | 1 (16,7) | 6 (8,6) |
| | <i>Important</i> | 24 (37,5) | 3 (50,0) | 27 (38,6) |
| | <i>Very Important</i> | 35 (54,7) | 2 (33,3) | 37 (52,9) |
| Total | | 64 (100) | 6 (100) | 70 (100) |

Feeling of safety

An overview of responses by the residents on the feeling of safety in De Haverleij is shown below in Table 17. It is noteworthy that the inhabitants of De Haverleij experience a relatively high sense of safety. There have for example been no reports of nuisance by graffiti by any of the respondents to the questionnaire.

Table 17: Feeling of Safety - De Haverleij, 's-Hertogenbosch

| | | De Haverleij (%) | Reference area (%) | Total (%) |
|--|------------------------------------|---------------------|-----------------------|-----------|
| <i>Graffiti on walls/buildings</i> | <i>Often</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Sometimes</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Almost never</i> | 64 (100) | 5 (100) | 69 (100) |
| | <i>Total</i> | 64 (100) | 5 (100) | 69 (100) |
| <i>Rubbish on streets</i> | <i>Often</i> | 0 (0,0) | 1 (20,0) | 1 (1,4) |
| | <i>Sometimes</i> | 13 (20,3) | 2 (40,0) | 15 (21,7) |
| | <i>Almost never</i> | 51 (79,7) | 2 (40,0) | 53 (76,8) |
| | <i>Total</i> | 64 (100) | 5 (100) | 69 (100) |
| <i>Nuisance direct neighbours</i> | <i>Often</i> | 1 (1,6) | 0 (0,0) | 1 (1,4) |
| | <i>Sometimes</i> | 9 (14,1) | 1 (20,0) | 10 (14,5) |
| | <i>Almost never</i> | 54 (84,4) | 4 (80,0) | 58 (84,1) |
| | <i>Total</i> | 64 (100) | 5 (100) | 69 (100) |
| <i>Nuisance local residents</i> | <i>Often</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Sometimes</i> | 6 (9,4) | 1 (20,0) | 7 (10,1) |
| | <i>Almost never</i> | 58 (90,6) | 4 (80,0) | 62 (89,9) |
| | <i>Total</i> | 64 (100) | 5 (100) | 69 (100) |
| <i>Nuisance youth</i> | <i>Often</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Sometimes</i> | 14 (21,9) | 0 (0,0) | 14 (20,3) |
| | <i>Almost never</i> | 50 (78,1) | 5 (100,0) | 55 (79,7) |
| | <i>Total</i> | 64 (100) | 5 (100) | 69 (100) |
| <i>Nuisance noise pollution</i> | <i>Often</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Sometimes</i> | 10 (15,6) | 0 (0,0) | 10 (14,5) |
| | <i>Almost never</i> | 54 (84,4) | 5 (100,0) | 59 (85,5) |
| | <i>Total</i> | 64 (100) | 5 (100) | 69 (100) |
| <i>Nuisance smell/dust/dirt</i> | <i>Often</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Sometimes</i> | 6 (9,4) | 1 (20,0) | 7 (10,1) |
| | <i>Almost never</i> | 58 (90,6) | 4 (80,0) | 62 (89,9) |
| | <i>Total</i> | 64 (100) | 5 (100) | 69 (100) |
| <i>Afraid to be harassed or robbed in neighbourhood</i> | <i>Strongly agree</i> | | | |
| | <i>Agree</i> | 0 (0,0) | 1 (20,0) | 1 (1,4) |
| | <i>Neither agree, nor disagree</i> | 7 (10,9) | 0 (0,0) | 7 (10,1) |
| | <i>Disagree</i> | 18 (28,1) | 2 (40,0) | 20 (29,0) |
| | <i>Totally disagree</i> | 39 (60,9) | 2 (40,0) | 41 (59,4) |
| <i>Total</i> | 64 (100) | 5 (100) | 69 (100) | |
| <i>Neighbour will improve/deteriorate/ remain the same</i> | <i>Deteriorate</i> | 4 (6,3) | 0 (0,0) | 4 (5,8) |
| | <i>Remain the same</i> | 48 (75,0) | 3 (60,0) | 51 (73,9) |
| | <i>Improve</i> | 12 (18,8) | 2 (40,0) | 14 (20,3) |
| | <i>Total</i> | 64 (100) | 5 (100) | 69 (100) |

Social Network

Scores on items related to the social network are displayed in Table 18 below. Similar to the table above, De Haverleij scores relatively high in terms of the social network present. This is based upon the majority of positive and neutral responses in the table below.

Table 18: Social network - De Haverleij, 's-Hertogenbosch

| | | De Haverleij (%) | Reference area (%) | Total (%) |
|---|------------------------------------|------------------|--------------------|-----------|
| <i>Lots of contact with other local residents</i> | <i>Totally disagree</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Disagree</i> | 5 (7,8) | 0 (0,0) | 5 (7,2) |
| | <i>Neither agree, nor disagree</i> | 16 (25,0) | 3 (60,0) | 19 (27,5) |
| | <i>Agree</i> | 30 (46,9) | 2 (40,0) | 32 (46,4) |
| | <i>Strongly agree</i> | 13 (20,3) | 0 (0,0) | 13 (18,8) |
| <i>Total</i> | | 64 (100) | 5 (100) | 69 (100) |
| <i>Feeling joint responsibility within neighbourhood</i> | <i>Totally disagree</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Disagree</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Neither agree, nor disagree</i> | 8 (12,5) | 0 (0,0) | 8 (11,6) |
| | <i>Agree</i> | 39 (60,9) | 4 (80,0) | 43 (62,3) |
| | <i>Strongly agree</i> | 17 (26,6) | 1 (20,0) | 18 (26,1) |
| <i>Total</i> | | 64 (100) | 5 (100) | 69 (100) |
| <i>Pleasant neighbourhood association</i> | <i>Totally disagree</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Disagree</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Neither agree, nor disagree</i> | 10 (15,6) | 1 (20,0) | 11 (15,9) |
| | <i>Agree</i> | 35 (54,7) | 4 (80,0) | 39 (56,5) |
| | <i>Strongly agree</i> | 19 (29,7) | 0 (0,0) | 19 (27,5) |
| <i>Total</i> | | 64 (100) | 5 (100) | 69 (100) |
| <i>'Cozy'/sociable neighbourhood with much solidarity</i> | <i>Totally disagree</i> | 1 (1,6) | 0 (0,0) | 1 (1,4) |
| | <i>Disagree</i> | 3 (4,7) | 1 (20,0) | 4 (5,8) |
| | <i>Neither agree, nor disagree</i> | 19 (29,7) | 1 (20,0) | 20 (29,0) |
| | <i>Agree</i> | 28 (43,8) | 3 (60,0) | 31 (44,9) |
| | <i>Strongly agree</i> | 13 (20,3) | 0 (0,0) | 13 (18,8) |
| <i>Total</i> | | 64 (100) | 5 (100) | 69 (100) |
| <i>People hardly know each other</i> | <i>Totally disagree</i> | 1 (1,6) | 0 (0,0) | 1 (1,4) |
| | <i>Disagree</i> | 4 (6,3) | 0 (0,0) | 4 (5,8) |
| | <i>Neither agree, nor disagree</i> | 17 (26,6) | 2 (40,0) | 19 (27,5) |
| | <i>Agree</i> | 32 (50,0) | 1 (20,0) | 33 (47,8) |
| | <i>Strongly agree</i> | 10 (15,6) | 2 (40,0) | 12 (17,4) |
| <i>Total</i> | | 64 (100) | 5 (100) | 69 (100) |
| <i>Satisfaction with composition of population</i> | <i>Totally disagree</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Disagree</i> | 4 (6,3) | 0 (0,0) | 4 (5,8) |
| | <i>Neither agree, nor disagree</i> | 8 (12,5) | 1 (20,0) | 9 (13,0) |
| | <i>Agree</i> | 45 (70,3) | 4 (80,0) | 49 (71,0) |
| | <i>Strongly agree</i> | 7 (10,9) | 0 (0,0) | 7 (10,1) |
| <i>Total</i> | | 64 (100) | 5 (100) | 69 (100) |

Sum variable

The internal reliability of the overall score tested positive for consistency (Crombach's Alpha = 0,787). The mean overall score in De Haverleij regarding the level of social capital is 21,38. As for the previous section, due to a lack of data for reference, the level of social capital cannot be compared to the required data in de four digit postcode area.

7.5 Results local house price developments

To describe the development of residential real estate values in De Haverleij in comparison to the reference material, data was obtained over a period of time from 2004 until 2011. Transaction figures resulted in data on 59 residential properties sold in the De Haverleij and 155 transactions figures of reference dwellings. The amount of data is insufficient to compose a visual presentation of the development of residential real estate values over time.

The average residential property value, as measured on the basis of the transaction price per square meter of floor space, has not significantly increased in De Haverleij when compared to the examined reference dwellings nearby (*Independent samples t-test $p=0,303>0,05$ when equal variances are not assumed*).

7.6 Sub conclusion

The Netherlands Housing Research 2009 survey lacks data on the reference area, in order to make informed statistical analyses. For this reason the level of social capital within De Haverleij cannot be compared to its selected reference area. Therefore it is not possible to use the same statistical tests in case of the De Haverleij. Notwithstanding the lack of data, this paragraph will describe some of the interesting findings of this case study area.

De Haverleij is not surrounded by many other buildings in the immediate vicinity. Nevertheless it can be stated that De Haverleij scores high in terms of the level of social capital in the neighbourhood in comparison to the average score of 14 as of the depicted households in the Netherlands Housings Research 2009 (Appendix 6). A possible explanation is that the feeling of safety in the De Haverleij is higher because of its quiet location outside of the nearby city of 's-Hertogenbosch. Assuming that, in comparison to more urbanized neighbourhoods, there is less movement of persons that results in less inconvenience. This is based on the premise that due to fewer movements of people chances of any nuisance will decrease.

Furthermore, De Haverleij scores high on items related to the social network in the neighbourhood. This could be explained by the many children in the neighbourhood. The spatial structure of De Haverleij allows for much social interaction. Assuming that a relatively high density of residential properties combined with a shared courtyard stimulates social contacts in the neighbourhood. Also the earlier mentioned presumed advantages in Het Funen, related to a reduction of maintenance costs may be expected in De Haverleij. Besides the above mentioned reasons, a possible explanation could be that there is a large proportion of owner-

occupied dwellings in De Haverleij. Moreover, the housing prices in De Haverleij are relatively high. Since De Haverleij mainly concerns owner-occupied properties, the residents would benefit from a high degree of maintenance, compared to other tenants. When assuming that this has a positive effect on future residential real estate values.

Subsequently statistical testing on the development of transaction figures reveals residential real estate values in De Haverleij do not differ significantly from the reference material used. The case of De Haverleij gives no reason to suspect that social capital has a positive impact on the value of residential real estate.

8. Case: Meer en Oever

8.1 Introduction

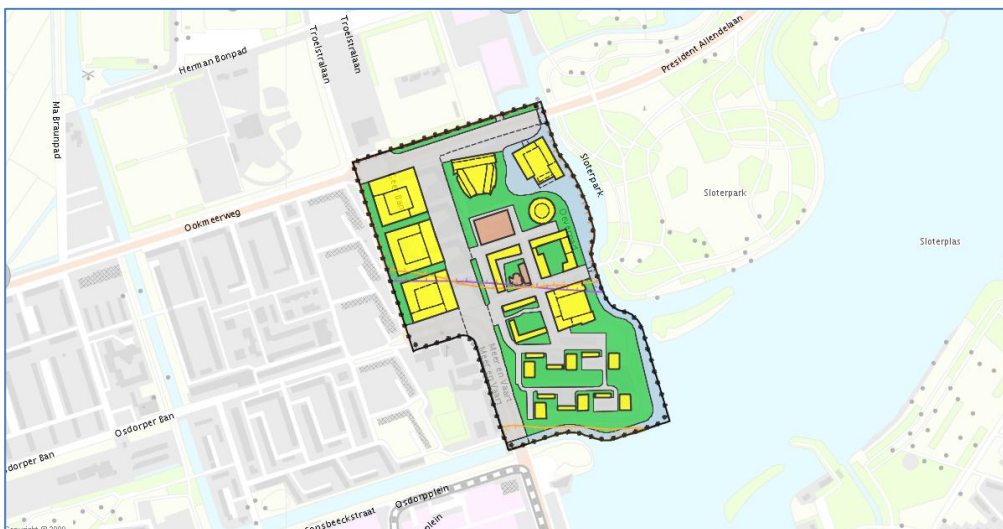
In this section the second case in the city of Amsterdam, Meer en Oever, is examined. Following a detailed description of the neighbourhood, the results of Meer en Oever its two measurements are explained in the second part of this section.

8.2 Context

Meer en Oever, in the northeast corner of the urban district of Osdorp in the city of Amsterdam, is located in the western suburbs of Amsterdam. Meer en Oever is bounded by the shopping centre 'Osdorperplein' to the south and by the Sloterpark and Sloterplas to the east side. Figure 12 below shows the recently reconstructed residential area Meer en Oever on the zoning map of the Land use plan of Meer Oever. This area, which was largely realized in the years after World War II, previously had a relative low density of houses. Since recent redevelopments the area is characterised by a high density of housing.

Part of this area has been vacant for a long period of time, due to the area being reserved for a second ring road, to the benefit of the motor traffic in the city of Amsterdam, based upon the Amsterdam General Urban Expansion Plan of 1934 (AUP). Eventually this ring road was never built (Stadsdeel_Nieuw_West, n.b.).

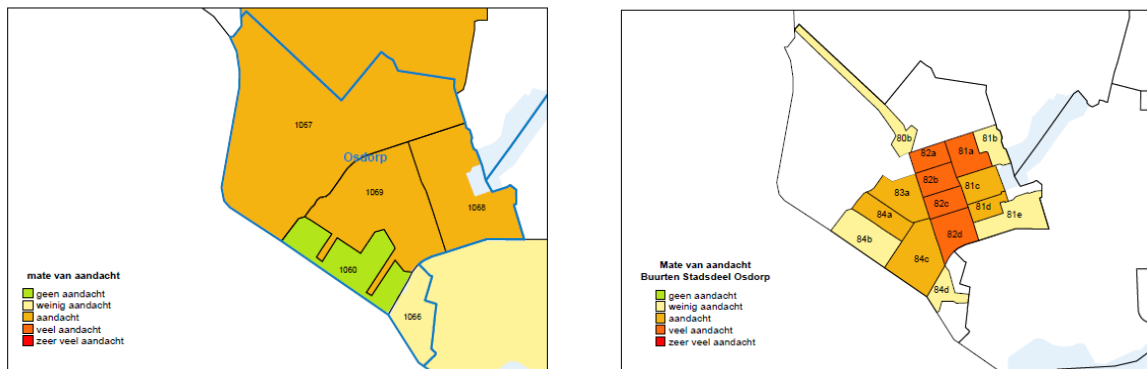
Figure 12: Map of Land use plan "Meer en Oever" (Gemeente_Amsterdam, 2009)



The New West district was appointed by former Minister Vogelaar of Housing, Spatial Planning and Environment, as a high priority neighbourhood. This is part of the Dutch forty district approach, discussed earlier in chapter two.

The east of Osdorp, of which Meer en Oever is part, is one of the two designated high priority areas in Amsterdam Osdorp. This can be seen in the following maps in Figure 13. Meer en Oever is part of the four-digit postcode area 1068 and corresponds with 81b on the map to the right (Bicknese & Slot, 2007). The various social problems in the district of New West might affect the degree of social capital in Meer en Oever in a negative way.

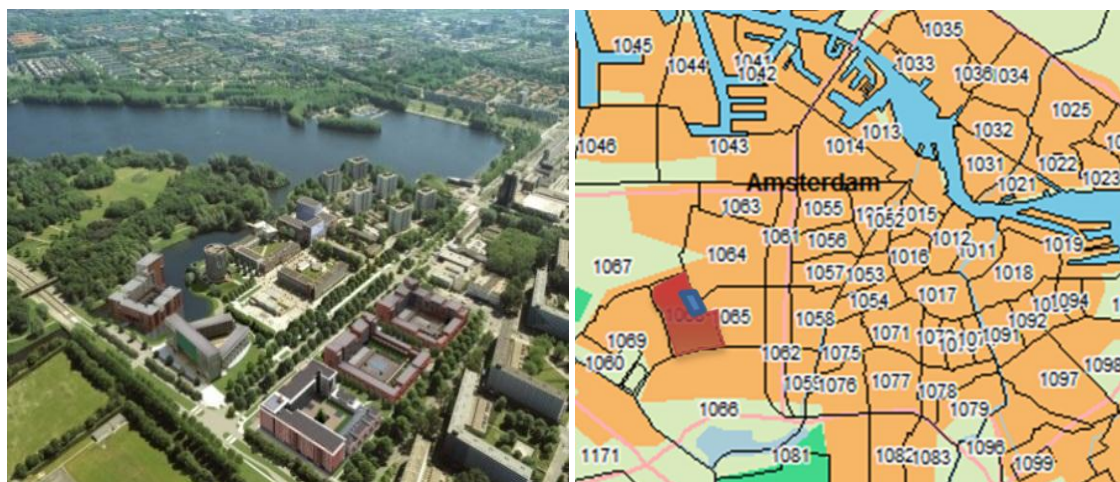
Figure 13: High priority areas Amsterdam Osdorp (Bicknese & Slot, 2007)



Meer en Oever is part of the larger area Osdorp North East, which is characterized by a transitional environment. The population mainly consist of elderly people of Dutch origin and immigrant families. To the west of Meer en Oever there is a relatively large number of families of Moroccan origin. Compared to the rest of Amsterdam the percentage of residents that strongly feel isolated is slightly higher, on the basis of a total of 18 per cent in this district versus 14 per cent as a mean for the entire city of Amsterdam. An examination by the Department of Research and Statistics of the municipality of Amsterdam shows that the east of Osdorp suffers lot from vandalism and burglaries. This is remarkable, since the feeling of safety in this area is above average. Finally, it is noticeable that in Meer en Oever the share of non-Western immigrants has increased over recent years, compared to the city of Amsterdam as a whole (Bicknese & Slot, 2007).

Figure 14 below shows an aerial view of the developments in Meer en Oever looking from the northwest, with Sloterpark and Sloterplas in the background (Proper-Stok_Ontwikkelaars, 2012). The site has been recently developed over the course of several years and in different stages.

Figure 14: Top view Meer en Oever and map of postcode area Amsterdam (Geodan, 2012; Proper-Stok_Ontwikkelaars, 2012)



8.3 General data

The image to the right in Figure 14 marks the four digit postcode area, to which Meer en Oever belongs, by a red area. Meer en Oever is marked by the blue area. A total of 46 questionnaires were returned of the survey plotted in Meer en Oever. With a total of 111 respondents in the Netherlands Housing Research 2009 survey, there is sufficient data available for a comparison with the four digit postcode area to which Meer en Oever belongs to.

The majority of the households (median) in Meer en Oever consist of two people with an average of over three people, based on the total number of inhabitants divided by the number of households. The composition of households mainly consists of families with one or more children. In comparison to the larger reference area, the proportion of owner-occupied properties is significantly higher (*Chi-square test* $X^2=19,474$, $p=0,000$; *Cramers V (medium effect)* = 0,312). Most homes in Meer en Oever are multi-family homes, as shown in Table 19 below.

Table 19: General data – Meer en Oever, Amsterdam

| | | Meer en Oever (%) | Reference area (%) | Total (%) |
|---------------------------------|-------------|-------------------|--------------------|-----------|
| Number of persons per household | 1 | 13 (28,3) | 51 (45,9) | 64 (40,8) |
| | 2 | 20 (43,5) | 37 (33,3) | 57 (36,3) |
| | 3 | 7 (15,2) | 8 (7,2) | 15 (9,6) |
| | 4 | 6 (13,0) | 12 (10,8) | 18 (11,5) |
| | More than 4 | 0 (0,0) | 3 (2,7) | 3 (1,9) |
| Total | | 46 (100) | 111 (100) | 157 (100) |

| | | | | |
|--|--|-----------|-----------|------------|
| <i>Composition of household</i> | <i>Couple/fixed partners without child(ren) living at home</i> | 19 (41,3) | 32 (53,3) | 51 (48,1) |
| | <i>Couple/fixed partners with child(ren) living at home</i> | 12 (26,1) | 16 (26,7) | 28 (26,4) |
| | <i>Couple/fixed partners with child(ren) living at home and other(s)</i> | 0 (0,0) | 1 (1,7) | 1 (0,9) |
| | <i>Couple/fixed partners with other(s)</i> | 0 (0,0) | 3 (5,0) | 3 (2,8) |
| | <i>One parent with child(ren) living at home</i> | 1 (2,2) | 6 (10,0) | 7 (6,6) |
| | <i>One parent with child(ren) living at home and other(s)</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Another composition</i> | 14 (30,4) | 2 (3,3) | 16 (15,1) |
| <i>Total</i> | | 46 (100) | 60 (100) | 106 (100) |
| <i>Owner-occupied property or rented house</i> | <i>Owner-occupied property</i> | 26 (56,5) | 20 (20,0) | 46 (31,5) |
| | <i>Rented house</i> | 20 (43,5) | 80 (80,0) | 100 (68,5) |
| <i>Total</i> | | 46 (100) | 100 (100) | 146 (100) |
| <i>Type of property</i> | <i>Detached, semi-detached, villa, bungalow, country house</i> | 3 (6,5) | 18 (17,8) | 21 (14,3) |
| | <i>Flat, tenement, apartment, maisonette</i> | 42 (91,3) | 83 (82,2) | 125 (85%) |
| | <i>None of these</i> | 1 (2,2) | 0 (0,0) | 1 (0,7) |
| | <i>Refused to answer</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| <i>Total</i> | | 46 (100) | 101 (100) | 147 (100) |

The physical characteristics of the living environment in Meer en Oever do not differ significantly from the physical characteristics of the living environment of the entire four digit postcode area. Statistical tests reveal no significant differences between Meer en Oever and the larger reference area for the items in Table 20.

Table 20: Physical living environment - Meer en Oever, Amsterdam

| | | <i>Meer en Oever (%)</i> | <i>Reference area (%)</i> | <i>Total (%)</i> |
|---|---|--------------------------|---------------------------|------------------|
| <i>Satisfaction with living environment</i> | <i>Very dissatisfied</i> | 0 (0,0) | 2 (2,0) | 2 (1,4) |
| | <i>Dissatisfied</i> | 1 (2,2) | 11 (10,9) | 12 (8,2) |
| | <i>Neither satisfied, nor dissatisfied</i> | 7 (15,2) | 13 (12,9) | 20 (13,6) |
| | <i>Satisfied</i> | 26 (56,5) | 57 (56,4) | 83 (56,5) |
| | <i>Very satisfied</i> | 12 (26,1) | 18 (17,8) | 30 (20,4) |
| <i>Total</i> | | 46 (100) | 101 (100) | 147 (100) |
| <i>Presence attractive buildings</i> | <i>Totally disagree</i> | 0 (0,0) | 3 (3,0) | 3 (2,0) |
| | <i>Disagree</i> | 0 (0,0) | 16 (15,8) | 16 (10,9) |
| | <i>Neither agree, nor disagree</i> | 8 (17,4) | 17 (16,8) | 25 (17,0) |
| | <i>Agree</i> | 28 (60,9) | 58 (57,4) | 86 (58,5) |
| | <i>Strongly agree</i> | 10 (21,7) | 7 (6,9) | 17 (11,6) |
| <i>Total</i> | | 46 (100) | 101 (100) | 147 (100) |
| <i>Choice neighbourhood/house</i> | <i>For this property</i> | 24 (52,2) | 3 (17,6) | 27 (42,9) |
| | <i>For this neighbourhood</i> | 7 (15,2) | 5 (29,4) | 12 (19,0) |
| | <i>For this property and this neighbourhood</i> | 8 (17,4) | 5 (29,4) | 13 (20,6) |
| | <i>No (this was the first available property)</i> | 7 (15,2) | 4 (23,5) | 11 (17,5) |
| | <i>Total</i> | | 46 (100) | 17 (100) |

8.4 Results social capital

Feeling of belonging

Inhabitants of Meer en Oever, which participated in the survey, responded in a similar way to most of the items concerning the feeling of belonging to the neighbourhood in comparison to the respondents of the Netherlands Housing Research 2009 in the greater four digit postcode area. These items are displayed in Table 21. When asked for their opinion concerning their sense of belonging, the residents in Meer en Oever assess this question significantly more positively than the residents of the greater postcode area (*Mann-Whitney*

$U=1837, p=0,009; r$ (small to medium effect) $=\frac{z}{\sqrt{N}}=\frac{-2,623}{\sqrt{151}}=-0,213$).

Table 21: Feeling of belonging - Meer en Oever, Amsterdam

| | | Meer en Oever (%) | Reference area (%) | Total (%) |
|---|------------------------------------|----------------------|-----------------------|-----------|
| <i>Feeling attached to neighbourhood</i> | <i>Totally disagree</i> | 1 (2,2) | 4 (4,0) | 5 (3,4) |
| | <i>Disagree</i> | 7 (15,2) | 18 (17,8) | 25 (17,0) |
| | <i>Neither agree, nor disagree</i> | 20 (43,5) | 12 (11,9) | 32 (21,8) |
| | <i>Agree</i> | 13 (28,3) | 54 (53,5) | 67 (45,6) |
| | <i>Strongly agree</i> | 5 (10,9) | 13 (12,9) | 18 (12,2) |
| <i>Total</i> | | 46 (100) | 101 (100) | 147 (100) |
| <i>Feeling at home in neighbourhood</i> | <i>Totally disagree</i> | 0 (0,0) | 2 (2,0) | 2 (1,4) |
| | <i>Disagree</i> | 1 (2,2) | 8 (7,9) | 9 (6,1) |
| | <i>Neither agree, nor disagree</i> | 10 (21,7) | 12 (11,9) | 22 (15,0) |
| | <i>Agree</i> | 25 (54,3) | 68 (67,3) | 93 (63,3) |
| | <i>Strongly agree</i> | 10 (21,7) | 11 (10,9) | 21 (14,3) |
| <i>Total</i> | | 46 (100) | 101 (100) | 147 (100) |
| <i>Opinion on feeling at home in neighbourhood</i> | <i>Completely unimportant</i> | 0 (0,0) | 1 (1,0) | 1 (0,7) |
| | <i>Unimportant</i> | 3 (6,5) | 6 (5,7) | 9 (6,0) |
| | <i>Important</i> | 12 (26,1) | 54 (51,4) | 66 (43,7) |
| | <i>Very important</i> | 31 (67,4) | 44 (41,9) | 75 (49,7) |
| | <i>Total</i> | | 46 (100) | 105 (100) |
| <i>Opinion on living in a neighbourhood without a bad image</i> | <i>Completely unimportant</i> | 1 (2,2) | 1 (1,0) | 2 (1,3) |
| | <i>Unimportant</i> | 9 (19,6) | 14 (13,3) | 23 (15,2) |
| | <i>Important</i> | 16 (34,8) | 54 (51,4) | 70 (46,4) |
| | <i>Very Important</i> | 20 (43,5) | 36 (34,3) | 56 (37,1) |
| | <i>Total</i> | | 46 (100) | 105 (100) |

Feeling of safety

With regard to the sense of security most responses by residents of Meer en Oever are similar to those given in the Netherlands Housing Research 2009 in the greater postcode area. In Meer en Oever the residents are significantly less bothered by graffiti (*Mann-Whitney* $U=1353, p=0,000; r$ (medium effect) $=\frac{z}{\sqrt{N}}=\frac{-4,642}{\sqrt{147}}=-0,383$) and nuisance caused by youth (*Mann-Whitney* $U=1884, p=0,039; r$ (small effect) $=\frac{z}{\sqrt{N}}=\frac{-2,069}{\sqrt{147}}=-0,171$). Table 22 shows an overview of all items related to the Feeling of Safety with Meer and Oever and the larger reference area.

Table 22: Feeling of Safety - Meer en Oever, Amsterdam

| | | Meer en Oever (%) | Reference area (%) | Total (%) |
|---|-----------------------------|----------------------|-----------------------|------------|
| Graffiti on walls/buildings | Often | 0 (0,0) | 18 (17,8) | 18 (12,2) |
| | Sometimes | 6 (13,0) | 35 (34,7) | 41 (7,9) |
| | Almost never | 40 (87,0) | 48 (47,5) | 88 (59,9) |
| Total | | 46 (100) | 101 (100) | 147 (100) |
| Rubbish on streets | Often | 14 (30,4) | 51 (50,5) | 65 (44,2) |
| | Sometimes | 24 (52,2) | 28 (27,7) | 52 (35,4) |
| | Almost never | 8 (17,4) | 22 (21,8) | 30 (20,4) |
| Total | | 46 (100) | 101 (100) | 147 (100) |
| Nuisance direct neighbours | Often | 1 (2,2) | 5 (5,0) | 6 (4,1) |
| | Sometimes | 15 (32,6) | 21 (20,8) | 36 (24,5) |
| | Almost never | 30 (65,2) | 75 (74,3) | 105 (71,4) |
| Total | | 46 (100) | 101 (100) | 147 (100) |
| Nuisance local residents | Often | 1 (2,2) | 7 (6,9) | 8 (5,4) |
| | Sometimes | 15 (32,6) | 20 (19,8) | 35 (23,8) |
| | Almost never | 30 (65,2) | 74 (73,3) | 104 (70,7) |
| Total | | 46 (100) | 101 (100) | 147 (100) |
| Nuisance youth | Often | 0 (0,0) | 15 (14,9) | 15 (10,2) |
| | Sometimes | 16 (34,8) | 34 (33,7) | 50 (34,0%) |
| | Almost never | 30 (65,2) | 52 (51,5) | 82 (55,8) |
| Total | | 46 (100) | 101 (100) | 147 (100) |
| Nuisance noise pollution | Often | 1 (2,2) | 11 (10,9) | 12 (8,2) |
| | Sometimes | 20 (43,5) | 34 (33,7) | 54 (36,7) |
| | Almost never | 25 (54,3) | 56 (55,4) | 81 (55,1) |
| Total | | 46 (100) | 101 (100) | 147 (100) |
| Nuisance smell/dust/dirt | Often | 8 (17,4) | 17 (16,8) | 25 (17,0) |
| | Sometimes | 11 (23,9) | 23 (22,8) | 34 (23,1) |
| | Almost never | 27 (58,7) | 61 (60,4) | 88 (59,9) |
| Total | | 46 (100) | 101 (100) | 147 (100) |
| Afraid to be harassed or robbed in neighbourhood | Strongly agree | 3 (6,5) | 1 (1,0) | 4 (2,7) |
| | Agree | 4 (8,7) | 22 (21,8) | 26 (17,7) |
| | Neither agree, nor disagree | 12 (26,1) | 14 (13,9) | 26 (17,7) |
| | Disagree | 19 (41,3) | 58 (57,4) | 77 (52,4) |
| | Totally disagree | 8 (17,4) | 6 (5,9) | 14 (9,5) |
| Total | | 46 (100) | 101 (100) | 147 (100) |
| Neighbour will improve/deteriorate/ remain the same | Deteriorate | 10 (21,7) | 32 (31,7) | 42 (28,6) |
| | Remain the same | 17 (37,0) | 42 (41,6) | 59 (40,1) |
| | Improve | 19 (41,3) | 27 (26,7) | 46 (31,3) |
| Total | | 46 (100) | 101 (100) | 147 (100) |

Social Network

The residents of Meer en Oever assess the items relating to the social network in their neighbourhood in a similar way in comparison to the respondents in the greater postcode area. Not any of the items in Meer en

Oever concerning social network, that are displayed in Table 23, differs significantly from responses given in the larger four-digit postcode area.

Table 23: Social network - Meer en Oever, Amsterdam

| | | Meer en Oever (%) | Reference area (%) | Total (%) |
|---|------------------------------------|----------------------|-----------------------|-----------|
| <i>Lots of contact with other local residents</i> | <i>Totally disagree</i> | 3 (6,5) | 1 (1,0) | 4 (2,7) |
| | <i>Disagree</i> | 9 (19,6) | 44 (43,6) | 53 (36,1) |
| | <i>Neither agree, nor disagree</i> | 18 (39,1) | 31 (30,7) | 49 (33,3) |
| | <i>Agree</i> | 13 (28,3) | 22 (21,8) | 35 (23,8) |
| | <i>Strongly agree</i> | 3 (6,5) | 3 (3,0) | 6 (4,1) |
| <i>Total</i> | | 46 (100) | 101 (100) | 147 (100) |
| <i>Feeling joint responsibility within neighbourhood</i> | <i>Totally disagree</i> | 1 (2,2) | 1 (1,0) | 2 (1,4) |
| | <i>Disagree</i> | 3 (6,5) | 22 (21,8) | 25 (17,0) |
| | <i>Neither agree, nor disagree</i> | 12 (26,1) | 7 (6,9) | 19 (12,9) |
| | <i>Agree</i> | 20 (43,5) | 61 (60,4) | 81 (55,1) |
| | <i>Strongly agree</i> | 10 (21,7) | 10 (9,9) | 20 (13,6) |
| <i>Total</i> | | 46 (100) | 101 (100) | 147 (100) |
| <i>Pleasant neighbourhood association</i> | <i>Totally disagree</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Disagree</i> | 1 (2,2) | 7 (6,9) | 8 (5,4) |
| | <i>Neither agree, nor disagree</i> | 14 (30,4) | 25 (24,8) | 39 (26,5) |
| | <i>Agree</i> | 27 (58,7) | 65 (64,4) | 92 (62,6) |
| | <i>Strongly agree</i> | 4 (8,7) | 4 (4,0) | 8 (5,4) |
| <i>Total</i> | | 46 (100) | 101 (100) | 147 (100) |
| <i>'Cozy'/sociable neighbourhood with much solidarity</i> | <i>Totally disagree</i> | 4 (8,7) | 3 (3,0) | 7 (4,8) |
| | <i>Disagree</i> | 6 (13,0) | 34 (33,7) | 40 (27,2) |
| | <i>Neither agree, nor disagree</i> | 19 (41,3) | 28 (27,7) | 47 (32,0) |
| | <i>Agree</i> | 14 (30,4) | 34 (33,7) | 48 (32,7) |
| | <i>Strongly agree</i> | 3 (6,5) | 2 (2,0) | 5 (3,4) |
| <i>Total</i> | | 46 (100) | 101 (100) | 147 (100) |
| <i>People hardly know each other</i> | <i>Totally disagree</i> | 3 (6,5) | 5 (5,0) | 8 (5,4) |
| | <i>Disagree</i> | 14 (30,4) | 38 (37,6) | 52 (35,4) |
| | <i>Neither agree, nor disagree</i> | 15 (32,6) | 22 (21,8) | 37 (25,2) |
| | <i>Agree</i> | 12 (26,1) | 34 (33,7) | 46 (31,3) |
| | <i>Strongly agree</i> | 2 (4,3) | 2 (2,0) | 4 (2,7) |
| <i>Total</i> | | 46 (100) | 101 (100) | 147 (100) |
| <i>Satisfaction with composition of population</i> | <i>Totally disagree</i> | 3 (6,5) | 4 (4,0) | 7 (4,8) |
| | <i>Disagree</i> | 5 (10,9) | 16 (15,8) | 21 (14,3) |
| | <i>Neither agree, nor disagree</i> | 14 (30,4) | 16 (15,8) | 30 (20,4) |
| | <i>Agree</i> | 21 (45,7) | 60 (59,4) | 81 (55,1) |
| | <i>Strongly agree</i> | 3 (6,5) | 5 (5,0) | 8 (5,4) |
| <i>Total</i> | | 46 (100) | 101 (100) | 147 (100) |

Sum variable

The average sum score in Meer en Oever is just above twelve. A sum score of twelve is below the Netherlands Housings Research 2009 average of 14. Statistical testing shows that this score is not significantly higher compared to the score based on the answers which were given in the four-digit postcode area.

8.5 Results local house price developments

The development of residential real estate values in Meer en Oever was compared to the reference dwellings in the period from 2005 to 2011. This was measured using the transaction figures of 39 properties sold in Meer en Oever and 89 transaction figures in Osdorperban.

Statistical testing shows that the development of residential property values has significantly increased in Meer en Oever compared to the values of the properties nearby in Osdorperban (*Independent samples t-test* $p=0,007<0,05$ when equal variances are assumed).

8.6 Sub conclusion

Statistical analyses did not reveal a significant difference in the level of social capital in Meer en Oever in comparison to the larger reference area. This paragraph will elaborate on some of the notable findings of the analyses described above.

In comparison to the reference area, the residents of Meer en Oever feel more at home in their neighbourhood. One possible reason could be that some of the larger apartment blocks in Meer en Oever, to the north, are directed towards the inside of a shared courtyard, while most apartments in the four digit postcode area are directed to the outside. This might encourage social interaction among its residents.

Residents to Meer en Oever experience significant fewer nuisances of graffiti and youth. This could be explained by the fact that the neighbourhood is restricted mainly to its residents. On two of its sides Meer en Oever is bounded by the park and the water. In addition, there are few facilities that attract people other than its residents. The existing playgrounds of the present schools are soberly equipped and do not invite to loiter. A walk through the neighbourhood, because of plotting this research's survey, results in additional insights. Major parts of Meer en Oever provide little shelter from the weather. This is further enhanced because of its location next to the lake. In addition to its wind sensitivity, Meer en Oever offers little to linger around. Also, the shopping centre 'Osdorperplein' to the south could have greater appeal to any nuisance groups compared to Meer en Oever.

The statistical analyses carried out in the framework of this study reveals that the strength of the social network in Meer en Oever does not differ significantly from the larger reference area. Also, related to the feeling of belonging and feeling of safety the observed differences are small. This is reflected in the level of social capital observed in Meer en Oever in comparison to the larger postcode area to which Meer en Oever belongs. Statistical testing shows no significant differences in the level of social capital observed. What is also conspicuous is the fact that the total score on social capital in Meer en Oever is relatively low compared to the mean sum score in the Netherlands Housing Research 2009. A possible explanation could be that apart from the differences outlined above, Meer en Oever has overall little differences in its structure and composition compared to the larger reference area.

What is remarkable is the fact that residential real estate values are significantly higher in Meer en Oever in contrast to the reference material observed. Unfortunately this research gives no apparent evidence to support this observation. On the basis of the general data on Meer en Oever its specific location could provide a possible explanation. In contrast to the larger reference area, Meer en Oever is surrounded by Sloterpark en Sloterpas along two of its sides. Because of its location in the immediate vicinity of the water and the park, residents might have been willing to pay higher prices for residential properties in Meer en Oever. Whereas the larger reference area is characterized by a majority of affordable housing, Meer en Oever includes some buildings with relatively high priced properties. One of which is the so-called 'Schutterstoren', consisting of apartments in a price range that is rare in this area of Amsterdam. The potential impact of this expensive apartment and its location cannot be disregarded in the analysis performed.

This research contains insufficient evidence in order to substantiate any of these presumptions, but offers reference points for further research.

9. Case: Chassé Park

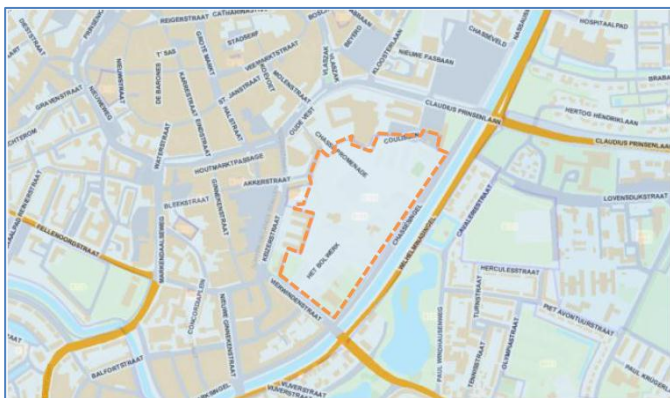
9.1 Introduction

The fourth case examined in this study is Chassé Park, a recently developed neighbourhood in the city of Breda. Chassé Park is not solely a neighbourhood that consists of residential properties but also includes a theatre and some small businesses. Further details on Chassé Park are described below based on secondary sources, followed by the results of both measurements.

9.2 Context

The Chassé Park is a former army barracks on the outskirts of the city centre of Breda. Historically the site has once been a closed-off zone for religious purposes by means of a nunnery (Onna, 2007). Figure 15 defines the area surrounded by an orange dashed line on the south eastern side of the historic centre of Breda.

Figure 15: Map of Land use plan “Binnenstad uitwerkingslocatie Chasséterrein” (Gemeente_Breda, 1997)



The redevelopment of this former army barracks into an ‘internationally acclaimed collective urban landscape’, as defined by Van Onna, as it is today began in 1990 following a contest (Onna, 2007). The winning "campus plan" was designed by Rem Koolhaas from the Netherlands and Xaveer Geyter from Belgium. The development of the 13 acre site has taken many years. This project was awarded persistence award for location development in 2007 by the NEPRON (Proper-Stok_Ontwikkelaars, n.b.).

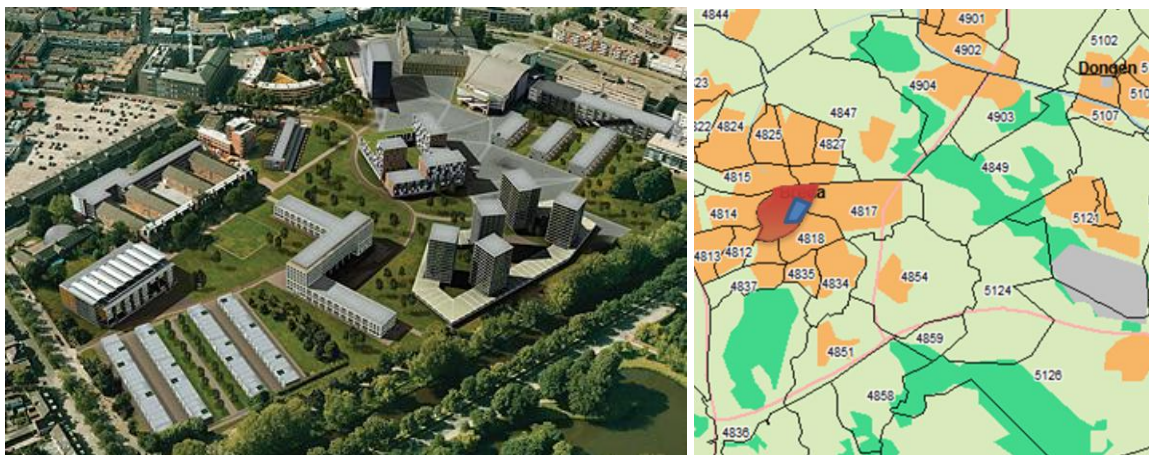
According to Van Onna, the author of an architecture book on Chassé Park, the project responded well to the changing demands on the Dutch housing market. The project was aimed at singles, middle- and higher income groups of 55 years and older and families or dual-earners by the age of 25 until 55. Chassé Park complies to these target groups by offering expensive homes with a high degree of comfort, practicality in a high quality living environment. The housing supply was composed on the basis of market analyses from the 1990s (Onna, 2007).

The majority of the buildings were designed directly embedded into the public space. One part consists of landscaping and a residential high rise buildings. Another part of the neighbourhood is composed of single-

family homes, so-called theatre townhouses and park villa's, embedded into the landscaping that is characterised by a low density of buildings (Onna, 2007). All parking lots are located below the surface level. Besides the 644 homes, the area also accommodates a municipal park and commercial premises, which include a theatre, casino, pop venue, hotel, museum and council offices. Besides the special campus concept, the area is characterized by its specific management construction, for which it also has been awarded. The private owners and businesses in Chassé Park have control over the management of public space, mainly focussing on the maintenance of the area. The underlying notion is to increase the level of safety, in addition to encouraging private initiatives to counter the degrading of the neighbourhood (Gebiedsontwikkeling.nu, n.b.).

Figure 16 shows an overview of the campus concept of the Chasse Park, including many green areas, the variety of buildings and of their positioning. Also noticeable is the fact that there is a clear differentiation in the density of residential units, such as number of storeys of buildings. The image to the right displays both the spatial delineation of the larger reference area marked red and Chassé Park marked blue.

Figure 16: Top view of Chassé Park and Map of postcode area Breda (Geodan, 2012; Schonk, Schul, & Compagnie, n.b.)



9.3 General data

In Chassé Park 64 respondents have completed the questionnaire. In the four-digit postcode area, which includes Chassé Park, 38 respondents have participated to the Netherlands Housing Research 2009.

Table 24: General data – Chassé Park, Breda

| | | Chassé Park (%) | Reference area (%) | Total(%) |
|---------------------------------|-------------|-----------------|--------------------|-----------|
| Number of persons per household | 1 | 20 (31,3) | 19 (50,0) | 39 (38,2) |
| | 2 | 42 (65,6) | 12 (31,6) | 54 (52,9) |
| | 3 | 1 (1,6) | 2 (5,3) | 3 (2,9) |
| | 4 | 1 (1,6) | 4 (10,5) | 5 (4,9) |
| | More than 4 | 0 (0,0) | 1 (2,6) | 1 (1,0) |
| Total | | 64 (100) | 38 (100) | 102 (100) |

| | | | | |
|--|--|-----------|-------------|-------------|
| <i>Composition of household</i> | <i>Couple/fixed partners without child(ren) living at home</i> | 42 (65,6) | 11 (57,9) | 53 (63,9) |
| | <i>Couple/fixed partners with child(ren) living at home</i> | 1 (1,6) | 4 (21,1) | 5 (6,0) |
| | <i>Couple/fixed partners with child(ren) living at home and other(s)</i> | 0 (0,0) | 1 (5,3) | 1 (1,2) |
| | <i>Couple/fixed partners and other(s)</i> | 0 (0,0) | 1 (5,3) | 1 (1,2) |
| | <i>One parent with child(ren) living at home</i> | 1 (1,6) | 0 (0,0) | 1 (1,2) |
| | <i>Another composition</i> | 20 (31,3) | 2 (10,5) | 22 (26,5) |
| <i>Total</i> | | 64 (100) | 19 (100) | 83 (100) |
| <i>Owner-occupied property or rented house</i> | <i>Owner-occupied property</i> | 52 (81,3) | 12 36,4% | 64 66,0% |
| | <i>Rented house</i> | 12 (18,8) | 21 63,6% | 33 34,0% |
| | <i>Total</i> | 64 (100) | 33 | 97 |
| <i>Type of property</i> | <i>Detached, semi-detached, villa, bungalow, country house</i> | 4 (6,3) | 9 (25,7) | 13 (13,1) |
| | <i>Flat, tenement, apartment, maisonette</i> | 59 (92,2) | 24 (68,6) | 83 (83,8) |
| | <i>None of these</i> | 1 (1,6) | 2 (5,7) | 3 (3,1) |
| | <i>Refused to answer</i> | 64 (100) | 35 (100) | 99 (100) |
| <i>Total</i> | | | | |

The number of persons per household in the Chasse Park is relatively low with an average of less than two persons. For more specific details on the general data, see Table 24. The majority of households in Chassé Park consist of married or cohabiting couples. In the larger postcode area, in the vicinity of the centre of Breda, the number of persons per household is relatively low. The percentage of rental properties is significantly higher among the reference area compared to the Chassé Park (*Chi-square test* $X^2=19,543$, $p=0,000$; *Cramers V (large effect)* = 0,449). Both in the greater postcode area and in the Chassé Park, most residential properties are multi-dwelling units.

In comparison to the larger postcode area, respondents in Chassé Park rate the characteristics of their physical environment far higher. The residents in Chassé Park are more satisfied with their living environment (*Mann-Whitney* $U=580$, $p=0,000$; r (medium to large effect) = $\frac{z}{\sqrt{N}} = \frac{-4,285}{\sqrt{99}} = -0,431$) and assess the appearance of the buildings in their neighbourhood higher (*Mann-Whitney* $U=387$, $p=0,000$; r (medium to large effect) = $\frac{z}{\sqrt{N}} = \frac{-5,769}{\sqrt{99}} = -0,580$). Like the other residents near to downtown Breda, the residents indicate they choose to live in the Chassé Park in which the particular neighbourhood was decisive. An overview of these items and corresponding answers is displayed in Table 25.

Table 25: Physical living environment - Chassé Park, Breda

| | | Chassé Park (%) | Reference area (%) | Total(%) |
|--------------------------------------|--|-----------------|--------------------|-----------|
| Satisfaction with living environment | Very dissatisfied | 0 (0,0) | 1 (2,9) | 1 (1,0) |
| | Dissatisfied | 1 (1,6) | 2 (5,7) | 3 (3,0) |
| | Neither satisfied, nor dissatisfied | 1 (1,6) | 11 (31,4) | 12 (12,1) |
| | Satisfied | 26 (40,6) | 13 (37,1) | 39 (39,4) |
| | Very satisfied | 36 (56,3) | 8 (22,9) | 44 (44,4) |
| Total | 64 (100) | 35 (100) | 99 (100) | |
| Presence attractive buildings | Totally disagree | 0 (0,0) | 3 (8,6) | 3 (3,0) |
| | Disagree | 0 (0,0) | 3 (8,6) | 3 (3,0) |
| | Neither agree, nor disagree | 2 (3,1) | 11 (31,4) | 13 (13,1) |
| | Agree | 24 (37,5) | 14 (40,0) | 38 (38,4) |
| | Strongly agree | 38 (59,4) | 4 (11,4) | 42 (42,4) |
| Total | 64 (100) | 35 (100) | 99 (100) | |
| Choice neighbourhood/house | For this property | 18 (28,1) | 7 (53,8) | 25 (32,5) |
| | For this neighbourhood | 7 (10,9) | 0 (0,0) | 7 (9,1) |
| | For this property and this neighbourhood | 38 (59,4) | 4 (30,8) | 42 (54,5) |
| | No (this was the first available property) | 1 (1,6) | 2 (15,4) | 3 (3,9) |
| | Total | 64 (100) | 13 (100) | 77 (100) |

9.4 Results social capital

Feeling of belonging

On all items related to the feeling of belonging, as shown in Table 26, Chassé Park scores higher in comparison to the greater four-digit postcode area. The respondents indicate that they feel more at home in their neighbourhood compared to the average response of the residents used as reference material (*Mann-Whitney* $U=795$, $p=0,006$; r (small to medium effect) = $\frac{z}{\sqrt{N}} = \frac{-2,765}{\sqrt{99}} = -0,278$). The same goes for their attachment to the neighbourhood (*Mann-Whitney* $U=796$, $p=0,011$; r (small to medium effect) = $\frac{z}{\sqrt{N}} = \frac{-2,552}{\sqrt{99}} = -0,256$). They are also more demanding with regard to their living environment (*Mann-Whitney* $U=873$, $p=0,030$; r (small to medium effect) = $\frac{z}{\sqrt{N}} = \frac{-2,172}{\sqrt{99}} = -0,218$). Interestingly, the Chassé Park residents greatly value the image of their neighbourhood (*Mann-Whitney* $U=698$, $p=0,000$; r (medium effect) = $\frac{z}{\sqrt{N}} = \frac{-3,558}{\sqrt{99}} = -0,356$).

Table 26: Feeling of belonging - Chassé Park, Breda

| | | Chassé Park (%) | Reference area (%) | Total(%) |
|-----------------------------------|-----------------------------|-----------------|--------------------|-----------|
| Feeling attached to neighbourhood | Totally disagree | 0 (0,0) | 2 (5,7) | 2 (2,0) |
| | Disagree | 0 (0,0) | 5 (14,3) | 5 (5,1) |
| | Neither agree, nor disagree | 14 (21,9) | 10 (28,6) | 24 (24,2) |
| | Agree | 36 (56,3) | 12 (34,3) | 48 (48,5) |
| | Strongly agree | 14 (21,9) | 6 (17,1) | 20 (20,2) |
| Total | 64 (100) | 35 (100) | 99 (100) | |

| | | | | |
|---|------------------------------------|-----------|-----------|-----------|
| <i>Feeling at home in neighbourhood</i> | <i>Disagree</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Neither agree, nor disagree</i> | 2 (3,1) | 7 (20,0) | 9 (9,1) |
| | <i>Agree</i> | 39 (60,9) | 22 (62,9) | 61 (61,6) |
| | <i>Strongly agree</i> | 23 (35,9) | 6 (17,1) | 29 (29,3) |
| <i>Total</i> | | 64 (100) | 35 (100) | 99 (100) |
| <i>Opinion on feeling at home in neighbourhood</i> | <i>Unimportant</i> | 0 (0,0) | 2 (5,7) | 2 (2,0) |
| | <i>Important</i> | 18 (28,1) | 15 (42,9) | 33 (33,3) |
| | <i>Very important</i> | 46 (71,9) | 18 (51,4) | 64 (64,6) |
| <i>Total</i> | | 64 (100) | 35 (100) | 99 (100) |
| <i>Opinion on living in a neighbourhood without a bad image</i> | <i>Completely unimportant</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Unimportant</i> | 4 (6,3) | 7 (20,0) | 11 (11,1) |
| | <i>Important</i> | 13 (20,3) | 15 (42,9) | 28 (28,3) |
| | <i>Very Important</i> | 47 (73,4) | 13 (37,1) | 60 (60,6) |
| <i>Total</i> | | 64 (100) | 35 (100) | 99 (100) |

Feeling of safety

In Chassé Park, the residents experience significantly less nuisance of waste on the street (*Mann-Whitney* $U=688,5$, $p=0,001$; r (medium effect) = $\frac{z}{\sqrt{N}} = \frac{-3,479}{\sqrt{99}} = -0,350$). The level of nuisance caused by nasty odours, dust or dirt is also significantly less in Chassé Park (*Mann-Whitney* $U=896$, $p=0,017$; r (small effect) = $\frac{z}{\sqrt{N}} = \frac{-2,396}{\sqrt{99}} = -0,241$).

In the larger postcode area residents indicate to be more affected by these nuisances. An overview of the responses given by respondents in Chassé Park and the larger four-digit postcode area is presented in Table 27 below.

Table 27: Feeling of Safety - Chassé Park, Breda

| | | <i>Chassé Park (%)</i> | <i>Reference area (%)</i> | <i>Total (%)</i> |
|------------------------------------|---------------------|------------------------|---------------------------|------------------|
| <i>Graffiti on walls/buildings</i> | <i>Often</i> | 1 (1,6) | 3 (8,6) | 4 (4,0) |
| | <i>Sometimes</i> | 16 (25,0) | 11 (31,4) | 27 (27,3) |
| | <i>Almost never</i> | 47 (73,4) | 21 (60,0) | 68 (68,7) |
| <i>Total</i> | | 64 (100) | 35 (100) | 99 (100) |
| <i>Rubbish on streets</i> | <i>Often</i> | 6 (9,4) | 12 (34,3) | 18 (18,2) |
| | <i>Sometimes</i> | 17 (26,6) | 12 (34,3) | 29 (29,3) |
| | <i>Almost never</i> | 41 (64,1) | 11 (31,4) | 52 (52,5) |
| <i>Total</i> | | 64 (100) | 35 (100) | 99 (100) |
| <i>Nuisance direct neighbours</i> | <i>Often</i> | 2 (3,1) | 3 (8,6) | 5 (5,1) |
| | <i>Sometimes</i> | 10 (15,6) | 7 (20,0) | 17 (17,2) |
| | <i>Almost never</i> | 52 (81,3) | 25 (71,4) | 77 (77,8) |
| <i>Total</i> | | 64 (100) | 35 (100) | 99 (100) |
| <i>Nuisance local residents</i> | <i>Often</i> | 1 (1,6) | 2 (5,7) | 3 (3,0) |
| | <i>Sometimes</i> | 11 (17,2) | 10 (28,6) | 21 (21,2) |
| | <i>Almost never</i> | 52 (81,3) | 23 (65,7) | 75 (75,8) |
| <i>Total</i> | | 64 (100) | 35 (100) | 99 (100) |

| | | | | |
|---|------------------------------------|-----------|-----------|-----------|
| <i>Nuisance youth</i> | <i>Often</i> | 5 (7,8) | 6 (17,1) | 11 (11,1) |
| | <i>Sometimes</i> | 25 (39,1) | 12 (34,3) | 37 (37,4) |
| | <i>Almost never</i> | 34 (53,1) | 17 (48,6) | 51 (51,5) |
| <i>Total</i> | | 64 (100) | 35 (100) | 99 (100) |
| <i>Nuisance noise pollution</i> | <i>Often</i> | 3 (4,7) | 7 (20,0) | 10 (10,1) |
| | <i>Sometimes</i> | 24 (37,5) | 13 (37,1) | 37 (37,4) |
| | <i>Almost never</i> | 37 (57,8) | 15 (42,9) | 52 (52,5) |
| <i>Total</i> | | 64 (100) | 35 (100) | 99 (100) |
| <i>Nuisance smell/dust/dirt</i> | <i>Often</i> | 0 (0,0) | 3 (8,6) | 3 (3,0) |
| | <i>Sometimes</i> | 8 (12,5) | 8 (22,9) | 16 (16,2) |
| | <i>Almost never</i> | 56 (87,5) | 24 (68,6) | 80 (80,8) |
| <i>Total</i> | | 64 (100) | 35 (100) | 99 (100) |
| <i>Afraid to be harassed or robbed in neighbourhood</i> | <i>Strongly agree</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Agree</i> | 4 (6,3) | 7 (20,0) | 11 (11,1) |
| | <i>Neither agree, nor disagree</i> | 14 (21,9) | 5 (14,3) | 19 (19,2) |
| | <i>Disagree</i> | 37 (57,8) | 17 (48,6) | 54 (54,5) |
| | <i>Totally disagree</i> | 9 (14,1) | 6 (17,1) | 15 (15,2) |
| <i>Total</i> | | 64 (100) | 35 (100) | 99 (100) |
| <i>Neighbour will improve/deteriorate/remain the same</i> | <i>Deteriorate</i> | 4 (6,3) | 3 (8,6) | 7 (7,1) |
| | <i>Remain the same</i> | 56 (87,5) | 23 (65,7) | 79 (79,8) |
| | <i>Improve</i> | 4 (6,3) | 9 (25,7) | 13 (13,1) |
| <i>Total</i> | | 64 (100) | 35 (100) | 99 (100) |

Social Network

From responses in Chassé Park it can be stated that the social network is stronger than in the four-digit postcode area. This can be traced to more contacts in between the residents (*Mann-Whitney U=621, p=0,000; r (medium effect)=* $\frac{z}{\sqrt{N}}=\frac{-3,810}{\sqrt{99}}=-0,383$) and a greater sense of shared responsibility (*Mann-Whitney U=862, p=0,026; r (small to medium effect)=* $\frac{z}{\sqrt{N}}=\frac{-2,221}{\sqrt{99}}=-0,223$). In addition, the interaction among residents is more pleasant (*Mann-Whitney U=811, p=0,047; r (small to medium effect)=* $\frac{z}{\sqrt{N}}=\frac{-1,987}{99}=-0,200$), residents are more sociable and there is more solidarity within Chassé Park (*Mann-Whitney U=833,5, p=0,025; r (small to medium effect)=* $\frac{z}{\sqrt{N}}=\frac{-2,241}{\sqrt{99}}=-0,225$). Details on the responses related to the social network in Chassé Park and the larger reference area is displayed in Table 28.

Table 28: Social network - Chassé Park, Breda

| | | Chassé Park (%) | Reference area (%) | Total(%) |
|---|------------------------------------|-----------------|--------------------|-----------|
| <i>Lots of contact with other local residents</i> | <i>Totally disagree</i> | 0 (0,0) | 5 (14,3) | 5 (5,1) |
| | <i>Disagree</i> | 13 (20,3) | 18 (51,4) | 31 (31,3) |
| | <i>Neither agree, nor disagree</i> | 28 (43,8) | 4 (11,4) | 32 (32,3) |
| | <i>Agree</i> | 17 (26,6) | 8 (22,9) | 25 (25,3) |
| | <i>Strongly agree</i> | 6 (9,4) | 0 (0,0) | 6 (6,1) |
| <i>Total</i> | | 64 (100) | 35 (100) | 99 (100) |

| | | | | |
|---|------------------------------------|-----------|-----------|-----------|
| <i>Feeling joint responsibility within neighbourhood</i> | <i>Totally disagree</i> | 1 (1,6) | 1 (2,9) | 2 (2,0) |
| | <i>Disagree</i> | 1 (1,6) | 2 (5,7) | 3 (3,0) |
| | <i>Neither agree, nor disagree</i> | 7 (10,9) | 8 (22,9) | 15 (15,2) |
| | <i>Agree</i> | 43 (67,2) | 21 (60,0) | 64 (64,6) |
| | <i>Strongly agree</i> | 12 (18,8) | 3 (8,6) | 15 (15,2) |
| <i>Total</i> | | 64 (100) | 35 (100) | 99 (100) |
| <i>Pleasant neighbourhood association</i> | <i>Totally disagree</i> | 0 (0,0) | 1 (2,9) | 1 (1,0) |
| | <i>Disagree</i> | 1 (1,6) | 1 (2,9) | 2 (2,0) |
| | <i>Neither agree, nor disagree</i> | 11 (17,2) | 9 (25,7) | 20 (20,2) |
| | <i>Agree</i> | 38 (59,4) | 21 (60,0) | 59 (59,6) |
| | <i>Strongly agree</i> | 14 (21,9) | 3 (8,6) | 17 (17,2) |
| <i>Total</i> | | 64 (100) | 35 (100) | 99 (100) |
| <i>'Cozy'/sociable neighbourhood with much solidarity</i> | <i>Totally disagree</i> | 3 (4,7) | 1 (2,9) | 4 (4,0) |
| | <i>Disagree</i> | 3 (4,7) | 12 (34,3) | 15 (15,2) |
| | <i>Neither agree, nor disagree</i> | 34 (53,1) | 12 (34,3) | 46 (46,5) |
| | <i>Agree</i> | 18 (28,1) | 9 (25,7) | 27 (27,3) |
| | <i>Strongly agree</i> | 6 (9,4) | 1 (2,9) | 7 (7,1) |
| <i>Total</i> | | 64 (100) | 35 (100) | 99 (100) |
| <i>People hardly know each other</i> | <i>Totally disagree</i> | 5 (7,8) | 3 (8,6) | 8 (8,1) |
| | <i>Disagree</i> | 15 (23,4) | 12 (34,3) | 27 (27,3) |
| | <i>Neither agree, nor disagree</i> | 27 (42,2) | 7 (20,0) | 34 (34,3) |
| | <i>Agree</i> | 14 (21,9) | 12 (34,3) | 26 (26,3) |
| | <i>Strongly agree</i> | 3 (4,7) | 1 (2,9) | 4 (4,0) |
| <i>Total</i> | | 64 (100) | 35 (100) | 99 (100) |
| <i>Satisfaction with composition of population</i> | <i>Totally disagree</i> | 0 (0,0) | 0 (0,0) | 0 (0,0) |
| | <i>Disagree</i> | 2 (3,1) | 2 (5,7) | 4 (4,0) |
| | <i>Neither agree, nor disagree</i> | 13 (20,3) | 8 (22,9) | 21 (21,2) |
| | <i>Agree</i> | 37 (57,8) | 21 (60,0) | 58 (58,6) |
| | <i>Strongly agree</i> | 12 (18,8) | 4 (11,4) | 16 (16,2) |
| <i>Total</i> | | 64 (100) | 35 (100) | 99 (100) |

Sum variable

The internal reliability of the sum variable is tested using Cronbach's Alpha. The Cronbach's Alpha for Chassé Park is 0,815, therefore it can be stated this scale has sufficient consistency among the different variables it is composed of. The overall level of social capital is significantly higher in Chassé Park in comparison to the four-digit postcode area used as reference material (*Mann-Whitney U=444,5, p=0,000; r (medium to large effect)*)= $\frac{z}{\sqrt{N}} = \frac{-4,810}{\sqrt{98}} = -0,486$). The level of social capital is relatively high on the basis of a mean sum score of nearly 18 compared to an overall average score of 14 in the Netherlands Housing Research 2009.

The scores on the different items related to social capital plotted in the survey for Chassé Park, as for Het Funen, lead to a suspicion that maintenance and management costs in are lower. Although substantiated facts are missing in this research, the results give reason for further research. Similar to Het Funen, residents experience significantly fewer nuisances and the social network is much stronger in comparison to the reference material.

9.5 Results local house price developments

The development of residential real estate values in Chassé Park compared to the selected reference dwellings has been analysed over a period of time from 2004 to 2011. Notable in the fact there are no transaction figures available of any reference material 2010. Data has been obtained of 154 residential properties sold in Chassé Park and 54 transactions figures of reference dwellings in streets selected.

On the basis of a statistical analysis, no significant difference is found regarding the development of property values (*Independent samples t-test $p=0,238>0,05$ when equal variances are not assumed*). In case of Chassé Park it cannot be stated that the value of properties will increase more in comparison to the reference dwellings.

9.6 Sub conclusion

Statistical testing shows that the level of social capital is significant higher in Chassé Park in comparison to the greater reference area. By means of the general data on Chassé Park this paragraph will elaborate on some of the more distinctive findings.

With respect to all three variables related to the feeling of belonging, Chassé Park scored higher in comparison to the larger reference area. Chassé Park is a relatively new residential area near substantially older neighbourhoods. Therefore, in accordance with Het Funen, in Chassé Park the influence of the first residents cannot be ruled out. In addition, the residents have a voice in the management of public area, because of which their involvement with their neighbourhood could have increased. This is assumed on the basis that the degree of involvement with a neighbourhood increases, since the residents can participate in the park management.

Related to the feeling of safety, Chassé Park scores particularly high on items related to the low level of nuisances within the neighbourhood. Residents of Chassé Park experience significantly fewer nuisances of smell, dust and dirt and rubbish on the street. Together with Het Funen en De Haverleij, Chassé Park gives reason to suspect maintenance and management costs in a neighbourhood with a higher level of social capital are lower. Besides that, the interest of the municipality to keep the area tidy is considerable, given the important facilities present in Chassé Park, among which are the council offices. Which of the two assumptions outweighs the other is difficult to assess on the basis of the results and present information available

Residents in Chassé Park have more contact with other local residents and their feeling of joint responsibility within the neighbourhood is higher. They also experience a more pleasant neighbourhood association and assess their neighbourhood as being more sociable with a higher degree of solidarity compared to the reference area. The influence of the presence of first inhabitants and the joint participation in the management of the site may have an effect on the strength of the social network in Chassé Park. Similar to Het Funen and De Haverleij, Chassé Park lacks private gardens in favor of a shared public space, which may stimulate the number

of interactions between the residents. Nevertheless, the social network in Chassé Park is not as strong as in Het Funen or De Haverleij. One possible explanation for this could be the larger-scale of Chassé Park, which might increase the level of anonymity among its residents. According to Bijlsma et al. this may lead to a reduction of predictability referring to spontaneous interactions among residents in public space (Bijlsma, et al., 2010). Therefore this might be considered as being a future threat to Chassé Park with regard to the feeling of safety.

Chassé Park in Breda is the second research area where a higher degree of social capital has been observed, next to Het Funen. Its mean sum score on the level of social capital is relatively high, with a score of 17.67, in comparison to the mean sum score of 14 in the Netherlands Housing Research 2009.

Chassé Park lacks an observed discrepancy in the development of residential real estate values in a comparison with selected residential properties in the vicinity of each project. The hypothesis previously states is not confirmed by examining the case of Chassé Park, although a higher level of social capital has been observed. An increase of residential real estate values has not been observed. Here, too, the negative effect of possible spill over was not excluded.

A higher degree of social capital might have a positive impact on the costs of maintaining and managing a neighbourhood. Variables that possibly affect maintenance costs are the degree of nuisance in a neighbourhood and the social network in the neighbourhood. Additional research in this needed to be able to further underpin this assumption.

10. Conclusions, reflections and recommendations

10.1 Introduction

In order to answer the main question of this research, the raw data belonging to the Netherlands Housing Research 2009 were used to a great extent. The main question being: Does an increase of social capital lead to an increase of residential real estate prices in the Netherlands? Based on the Housing module of the Netherlands Housing Research 2009, questions relevant to the concept of social capital were drawn up, and have been plotted by means of a survey in the four research areas. Social capital is operationalized by means of comparing the data obtained by the survey in the four research areas, to the data of the Netherlands Housing Research 2009.

The development of residential real estate values is operationalized using transaction figures of residential properties sold in the four case study areas and referential houses in the vicinity of the selected neighbourhoods. Transaction figures contain information on owner-occupied properties sold over the course of several years.

What is remarkable on the basis of the results is the connection between the urban designs of the case study areas in terms of scale in relation to the degree of social capital. There seems to be a link between the two. The following relationship is assumed; the higher the density of residential buildings, the lower the degree of social capital. Successively, the score in terms of social capital is as follows compiled from highest to the lowest score; De Haverleij, Het Funen, Chassé Park and Meer en Oever. This also corresponds to the order of the highest to lowest density in terms of housing density. This study provides insufficient evidence to underpin this. This could lead to additional research.

Another pattern which has been observed is that respondents in a neighbourhood with a relatively high level of social capital suffer less from nuisance. Moreover, a strong social network and a high degree of shared responsibility for the neighborhood have been measured.

The next paragraph will cite the main conclusions of this research and will answer the main question depicted above. Paragraph 10.3 will give some recommendations based on these conclusions.

10.2 Conclusions

Only in Het Funen and in Chassé Park, a significantly higher degree of social capital was observed in comparison to the greater four digit postcode area to which each of the cases belongs. The case of De Haverleij was excluded from a similar research approach, due to data restrictions since there was a lack of reference material. In De Haverleij the level of social capital measured was highest, followed by Het Funen and Chassé Park and with the lowest score for Meer en Oever at a considerable distance.

This is a striking observation, as De Haverleij is considered to be the only case that can be classified as a private residential community. This result is in accordance with the results of the research of Van Vlaanderen

on private residential communities that was mentioned before. Next, there are similarities between the measurement on social capital and the urban design of the four cases. The degree of social capital seems to decrease as a result of increasing of housing density. This hypothesis could be a new starting point for further research.

Another observation is the importance of the role of the social network as a component of the concept of social capital. Het Funen and Chassé Park, which both reveal a discrepancy with respect to the degree of social capital within the neighbourhood in comparison to the reference material; both differ significantly on this component compared to the two cases where no discrepancy was found. The results in Het Funen and De Haverleij regarding the social network suggest that the many children around might increase the level of social interaction within a neighbourhood.

Analyses, using SPSS's T-test, show solely for Meer en Oever significant differences in the average transaction price per property. The average price paid for an owner-occupied dwelling in Meer en Oever increases more over time, when compared to the selected reference dwellings. In the other three cases, a discrepancy in residential real estate values has not been found. The degree of social capital observed in Meer en Oever is similar to the greater four digit post code area. The residents take a positive stance towards the presence of attractive building; but so do the people who live in the larger four digit postcode area. Residents in Meer en Oever differ significantly in that they find it more important to live in a neighbourhood where they feel more at home. Moreover they experience fewer nuisances of youth and graffiti on walls and buildings. Perhaps its convenient location adjacent to the park and the water could also affect the value of resident properties in a positive manner. This potentially important factor for residential real estate values cannot be excluded in this study.

Based on the analysis of this research, there cannot be ascertained that a high degree of social capital has an effect on the development of residential real estate values. This does not mean in any way that there are no positive effects of social capital found during this research. For example, the data reveals that participants in high social capital neighbourhoods experience less nuisance and that the shared sense of responsibility for such neighbourhood is higher. This could lead to lower costs neighbourhood management and in particular the maintenance costs. This again is a hypothesis that could be a new starting point for future research.

However, potential spill over effects have not been excluded in this study, this referring to the positive characteristics of a high degree of social capital in a particular neighbourhood. This research does not rule out that residential properties in the immediate vicinity are positively affected by a high degree of social capital in a nearby neighbourhood. For part since this research cannot be mimicked by means of an experiment. The housing market is so complex that it will prove to be a major challenge. This could well be the reason that such an investigation has not previously been performed using lab conditions.

10.3 Reflections

There are also some limitations to this research that should be mentioned. Possible spill over effects, resulting from a higher degree of social capital, could well affect residential properties within the vicinity in a positive manner. Subsequently, such effects cannot be excluded in reality. So, it's not safe to say these effects do not exist nor have influence on the comprehensive areas.

Also, the access to available data was restricted. In concrete, transaction figures were missed for several quarters (Meer en Oever, Het Funen en De Haverleij), as well as transaction figures over one full year in one case (Chasé park). This could have influenced the measurement outcomes.

Also, in the case of the four digit postal code that includes De Haverleij, there was not enough data available from the Netherlands Housing Research 2009 (N = 6). So in the case of De Haverleij, there was no reference group.

As already mentioned, the four selected neighbourhood are included within the four numbered post code area. This means that both data (cases versus post code area) could have some degree of overlap in participants to the questionnaires. The amount of overlap cannot be determined, nor filtered out. In this research, the researcher is aware of this limitation, but the data is approached as if it were two independent samples.

Another limitation of this research concerns the difference between the geographical areas for retrieving the data on social capital and development of residential real estate values. Especially the latest dataset proved difficult to obtain, which makes the data not equal to the four numbered postcode area as used in measuring the level of social capital in the selected neighbourhoods. To make the best possible comparison, reference properties were looked for and found in the surrounding area. Not in all cases, this was within the practicality-range of this research. Therefore the spatial delineation is different in the analysing the degree of social capital and analysing the development of residential real estate values.

The different databases that exist for this purpose are not always publicly accessible. The database of the Dutch Land Registry Office (Kadaster) for example, is quite costly to consult. A market oriented party as Calcasa is also obliged to charge a sum that is in line with prices in the market. The database from the Dutch Association of Real Estate Brokers and Real Estate Experts is not open for the public, but with help of several real estate agents involved at the time of completion of the selected projects, the required data was made available for the purpose of this research.

Lastly, due to the small number of cases it is difficult to make well-founded generalized statements about the Dutch housing market. Even so, this research has come up with interesting information and gives a renewed and refreshing view on the living environment on a neighbourhood level. This research is especially interesting, because of the fact that something as theoretical (perhaps untouchable) as social capital is quantified and made measurable.

10.4 Recommendations

A research like this, brings a new refreshing view on project development; even independent of the results. The quality of some of the reviewed projects is quantified by means of the data collection and further analysis. In this way this research brings about new possibilities to reflect on recent residential real estate projects.

Besides, the results lead to possible new starting points for future research and or practical experiments. The results from this research implicate that social capital will positively influence the costs of managing the living environment. By lowering these costs that result from residents that take a stance at a shared responsibility for their neighbourhood. In addition, this could well be the result of a reduction of the degree of nuisance that residents experience within their neighbourhood.

The insights from this research will inform and give focus to future location development, although this will certainly need further supplementary research. This research underlines the trend that people are aiming to live in a living environments characterized by a high degree of social capital. The outcomes from this research can inform external parties, like municipalities and potential buyers, but also other actors on the property market like housing associations and (institutional) investors. It is important to conclude that the positive aspects of social capital should be emphasized, because it's not self-evident that these qualities are visible at first glance.

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List of interviewees

Robert Koolen (Heijmans)
Menno Molenaar (Heijmans)
Maarten van Duijn (Heijmans)
Rogier Bogaard (Heijmans)

Rob van Kalmthout (Proper Stok)
Petra Rutten (Proper Stok – by telephone)

David Hamers (Netherlands Environmental Assessment Agency - PBL)

Appendices

Appendix 1: Analysis Dutch Housing Market

Association of Real Estate Brokers and Real Estate Experts (2012)

Figure 17: Developments of offer prices in the Netherlands

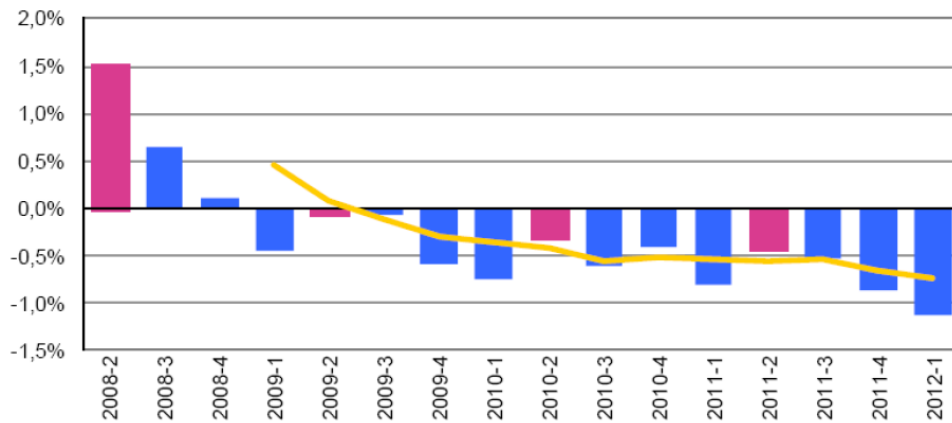


Figure 18: Development of transaction prices in the Netherlands (quarter to quarter)

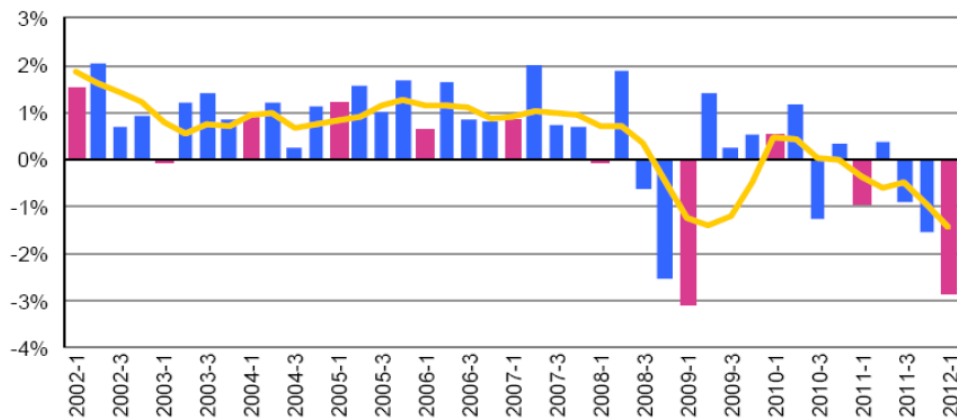
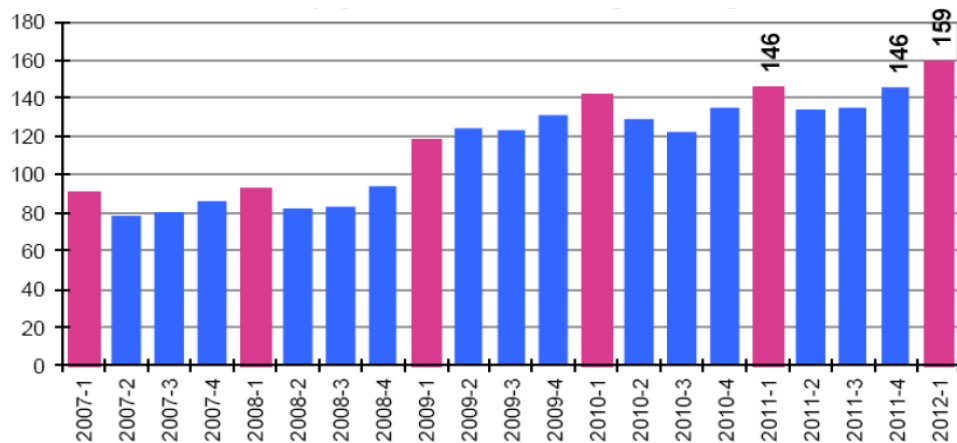


Figure 19: Time property is for sale (days)



(NVM, 2012)

Mijn buurt is: top flop

Beste bewoner,

Voelt u zich verbonden met uw buurt en uw medebewoners? Wordt uw buurt gekenmerkt door een hechte gemeenschap of kent men elkaar nauwelijks? Wat is de meerwaarde van de contacten in uw buurt? Deze vragen staan centraal in mijn afstudeeronderzoek naar het sociale netwerk in uw buurt. Ik ben dan ook zeer benieuwd naar uw antwoorden op de vragen in deze vragenlijst.

In het kader van mijn afstudeeronderzoek aan de Radboud Universiteit Nijmegen onderzoek ik, in samenwerking met Heijmans, het sociale netwerk in diverse wijken van Nederland. In mijn afstudeeronderzoek staat onder meer uw wijk centraal. Uw medewerking is daarbij van groot belang en onmisbaar voor dit onderzoek. Uw antwoorden leiden niet alleen tot meer kennis over het belang van het sociale netwerk in de buurt. Uw antwoorden leiden tevens tot nieuwe inzichten voor toekomstige woningontwikkelingen in Nederland. Uw antwoorden worden anoniem verwerkt.

Ik zou het zeer op prijs stellen als u deze vragenlijst invult. Dit duurt ongeveer tien minuten. U kunt de bijgevoegde papieren vragenlijst invullen en terugsturen. Een retourenvelop is bijgevoegd. U kunt de vragenlijst ook digitaal invullen via de volgende link: <http://buurtonderzoek.webklik.nl>

Invullen en terugsturen kan tot 6 januari 2012. Indien u nadere vragen over het onderzoek heeft, kunt u contact opnemen met ondergetekende via e-mailadres: W.B.vanDeurzen@student.ru.nl

Alvast hartelijk dank voor uw medewerking!

Met vriendelijke groet,

Wouter van Deurzen

De vragen in dit eerste blok gaan over uw huidige woonomgeving.

| Huidige woonomgeving | |
|--|---|
| 1. Hoe tevreden bent u met uw huidige woonomgeving? | <input type="radio"/> Zeer tevreden <input type="radio"/> Tevreden <input type="radio"/> Niet tevreden, maar ook niet ontevreden <input type="radio"/> Ontevreden <input type="radio"/> Zeer ontevreden |
| 2 De bebouwing in deze buurt is aantrekkelijk | <input type="radio"/> Helemaal mee eens <input type="radio"/> Mee eens <input type="radio"/> Niet mee eens, maar ook niet mee oneens <input type="radio"/> Mee oneens <input type="radio"/> Helemaal mee oneens |
| 3. Heeft u in eerste instantie bewust gekozen voor deze woning of voor deze buurt? | <input type="radio"/> Voor deze woning <input type="radio"/> Voor deze buurt <input type="radio"/> Voor deze buurt en deze woning <input type="radio"/> Nee (hier kon ik het eerste in) |
| 4. Er is sprake van bekladding van muren en/of gebouwen | <input type="radio"/> Vaak <input type="radio"/> Soms <input type="radio"/> (Bijna) nooit |
| 5. Er is sprake van rommel op straat | <input type="radio"/> Vaak <input type="radio"/> Soms <input type="radio"/> (Bijna) nooit |
| 6. In welke mate ondervindt u overlast door directe buren? | <input type="radio"/> Vaak <input type="radio"/> Soms <input type="radio"/> (Bijna) nooit |
| 7. In welke mate ondervindt u in deze buurt overlast door omwonenden? | <input type="radio"/> Vaak <input type="radio"/> Soms <input type="radio"/> (Bijna) nooit |
| 8. In welke mate ondervindt u in deze buurt overlast door jongeren? | <input type="radio"/> Vaak <input type="radio"/> Soms <input type="radio"/> (Bijna) nooit |
| 9. In welke mate ondervindt u in deze buurt vormen van geluidsoverlast? | <input type="radio"/> Vaak <input type="radio"/> Soms <input type="radio"/> (Bijna) nooit |
| 10. In welke mate ondervindt u in deze buurt vormen van stank, stof en/of vuil? | <input type="radio"/> Vaak <input type="radio"/> Soms <input type="radio"/> (Bijna) nooit |
| 11. Hoe belangrijk vindt u dat u zich thuis voelt in de buurt? | <input type="radio"/> Zeer belangrijk <input type="radio"/> Belangrijk <input type="radio"/> Onbelangrijk <input type="radio"/> Geheel onbelangrijk |
| 12. Hoe belangrijk vindt u dat er in uw buurt geen bekladding van muren en gebouwen is? | <input type="radio"/> Zeer belangrijk <input type="radio"/> Belangrijk <input type="radio"/> Onbelangrijk <input type="radio"/> Geheel onbelangrijk |
| 13. Hoe belangrijk vindt u dat er in uw buurt geen vernielingen van telefooncellen, tram- of bushaltes zijn? | <input type="radio"/> Zeer belangrijk <input type="radio"/> Belangrijk <input type="radio"/> Onbelangrijk <input type="radio"/> Geheel onbelangrijk |
| 14. Hoe belangrijk vindt u dat er in uw buurt geen rommel op straat is? | <input type="radio"/> Zeer belangrijk <input type="radio"/> Belangrijk <input type="radio"/> Onbelangrijk <input type="radio"/> Geheel onbelangrijk |
| 15. Hoe belangrijk vindt u dat er in uw buurt geen overlast | <input type="radio"/> Zeer belangrijk |

| | |
|---|--|
| van omwonenden en jongeren is? | <input type="radio"/> Belangrijk <input type="radio"/> Onbelangrijk <input type="radio"/> Geheel onbelangrijk |
| 16. Hoe belangrijk vindt u dat uw woning zich niet in een buurt met een slecht imago bevindt? | <input type="radio"/> Zeer belangrijk <input type="radio"/> Belangrijk <input type="radio"/> Onbelangrijk <input type="radio"/> Geheel onbelangrijk |

Het volgende deel bestaat uit een aantal stellingen gevolgd door een aantal vragen over het sociale netwerk in uw buurt.

| Sociaal netwerk | |
|---|---|
| 17. Ik ben gehecht aan deze buurt | <input type="radio"/> Helemaal mee eens <input type="radio"/> Mee eens <input type="radio"/> Niet mee eens, maar ook niet mee oneens <input type="radio"/> Mee oneens <input type="radio"/> Helemaal mee oneens |
| 18. Ik voel me thuis in deze buurt | <input type="radio"/> Helemaal mee eens <input type="radio"/> Mee eens <input type="radio"/> Niet mee eens, maar ook niet mee oneens <input type="radio"/> Mee oneens <input type="radio"/> Helemaal mee oneens |
| 19. Ik heb veel contact met andere buurtbewoners | <input type="radio"/> Helemaal mee eens <input type="radio"/> Mee eens <input type="radio"/> Niet mee eens, maar ook niet mee oneens <input type="radio"/> Mee oneens <input type="radio"/> Helemaal mee oneens |
| 20. Ik voel me mede verantwoordelijk voor de leefbaarheid in de buurt | <input type="radio"/> Helemaal mee eens <input type="radio"/> Mee eens <input type="radio"/> Niet mee eens, maar ook niet mee oneens <input type="radio"/> Mee oneens <input type="radio"/> Helemaal mee oneens |
| 21. In de buurt gaat men op een prettige manier met elkaar om | <input type="radio"/> Helemaal mee eens <input type="radio"/> Mee eens <input type="radio"/> Niet mee eens, maar ook niet mee oneens <input type="radio"/> Mee oneens <input type="radio"/> Helemaal mee oneens |
| 22. Ik woon in een gezellige buurt met veel saamhorigheid | <input type="radio"/> Helemaal mee eens <input type="radio"/> Mee eens <input type="radio"/> Niet mee eens, maar ook niet mee oneens <input type="radio"/> Mee oneens <input type="radio"/> Helemaal mee oneens |
| 23. Mensen kennen elkaar in deze buurt nauwelijks | <input type="radio"/> Helemaal mee eens <input type="radio"/> Mee eens <input type="radio"/> Niet mee eens, maar ook niet mee oneens <input type="radio"/> Mee oneens <input type="radio"/> Helemaal mee oneens |
| 24. Ik ben tevreden met de bevolkingssamenstelling in de buurt | <input type="radio"/> Helemaal mee eens <input type="radio"/> Mee eens <input type="radio"/> Niet mee eens, maar ook niet mee oneens <input type="radio"/> Mee oneens <input type="radio"/> Helemaal mee oneens |
| 25. Hoe belangrijk vindt u dat er veel contact met directe burens is? | <input type="radio"/> Zeer belangrijk <input type="radio"/> Belangrijk <input type="radio"/> Onbelangrijk <input type="radio"/> Geheel onbelangrijk |
| 26. Hoe belangrijk vindt u dat er veel contact met andere | <input type="radio"/> Zeer belangrijk |

| | |
|---|--|
| buurtbewoners is? | <input type="radio"/> Belangrijk <input type="radio"/> Onbelangrijk <input type="radio"/> Geheel onbelangrijk |
| 27. Hoe belangrijk vindt u dat u woont in een gezellige buurt met veel saamhorigheid? | <input type="radio"/> Zeer belangrijk <input type="radio"/> Belangrijk <input type="radio"/> Onbelangrijk <input type="radio"/> Geheel onbelangrijk |
| 28. Hoe vaak neemt u actief deel aan buurtactiviteiten? | <input type="radio"/> Minstens 1 keer per maand <input type="radio"/> Meerdere keren per jaar, maar niet maandelijks <input type="radio"/> 1 keer per jaar <input type="radio"/> Zelden of nooit <input type="radio"/> In mijn buurt zijn geen buurtactiviteiten |
| 29. Hoe vaak neemt u actief deel aan activiteiten in clubverband? | <input type="radio"/> Minstens 1 keer per week <input type="radio"/> Vaker dan 1 keer per maand, maar niet wekelijks <input type="radio"/> 1 keer per maand <input type="radio"/> Minder dan 1 keer per maand <input type="radio"/> Zelden of nooit |

De volgende vragen gaan over de veiligheid in uw buurt.

| Veiligheid | |
|---|---|
| 30. Ik vind de verkeerssituatie in deze buurt veilig | <input type="radio"/> Helemaal mee eens <input type="radio"/> Mee eens <input type="radio"/> Niet mee eens, maar ook niet mee oneens <input type="radio"/> Mee oneens <input type="radio"/> Helemaal mee oneens |
| 31. Ik ben bang in deze buurt om lastiggevallen of beroofd te worden | <input type="radio"/> Helemaal mee eens <input type="radio"/> Mee eens <input type="radio"/> Niet mee eens, maar ook niet mee oneens <input type="radio"/> Mee oneens <input type="radio"/> Helemaal mee oneens |
| 32. Denkt u dat de buurt waarin u woont het komende jaar vooruit of achteruit zal gaan? | <input type="radio"/> Vooruit <input type="radio"/> Achteruit <input type="radio"/> Gelijk gebleven |

Tot slot nog enkele vragen over de samenstelling van uw huishouden en het type woning.

| Algemene gegevens | |
|---|---|
| 33. Uzelf meegerekend, uit hoeveel personen bestaat dan het huishouden waartoe u behoort? | <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> Meer dan 4 |
| 34. Bestaat uw huishouden uit: (Kind is ook stiefkind, pleegkind e.d. Kinderen die elders op kamers wonen worden niet tot het huishouden gerekend) | <input type="radio"/> Echtbaar/vaste partners zonder thuiswonende kind(eren) <input type="radio"/> Echtbaar/vaste partners met thuiswonende kind(eren) <input type="radio"/> Echtbaar/vaste partners met thuiswonende kind(eren) en met ander(en) <input type="radio"/> Echtbaar/vaste partners met ander(en) <input type="radio"/> Eén ouder met thuiswonende kind(eren) <input type="radio"/> Eén ouder met thuiswonende kind(eren) en met ander(en) <input type="radio"/> Een andere samenstelling |
| 35. Woont u in een koop-of huurwoning? | <input type="radio"/> Koopwoning <input type="radio"/> Huurwoning |
| 36. In wat voor type woning woont u? | <input type="radio"/> Een eengezinswoning, vrijstaand, twee onder een kap, villa, bungalow, landhuis |

- Een flat, etagewoning, appartement, maisonnette, bovenwoning, benedenwoning
- Een woning met aparte winkel, kantoor-, praktijk- of bedrijfsruimte
- Een wooneenheid met gezamenlijk gebruik van keuken en toilet
- Geen van deze

Indien u nog opmerkingen heeft naar aanleiding van deze vragenlijst kunt u die hieronder kwijt.

Overige opmerkingen

Hartelijk dank voor uw medewerking. U kunt de vragenlijst terugsturen via de bijgevoegde retourenvelop. U hoeft hiervoor geen postzegel te plakken.

Appendix 3: Codebook data social capital

| Variable | Name variable | Labels per variable | Values per label |
|--|---------------|--|-----------------------------------|
| General data | | | |
| Number of persons per household | Q19 | 1=1 2=2 3=3 4=4 5=over 4 | No value |
| Composition household | Q20 | 1= Couple/fixed partners without child(ren) living at home 2= Couple/fixed partners with child(ren) living at home 3= Couple/fixed partners with child(ren) living at home and other(s) 4= Couple/fixed partners with other(s) 5=One parent with child(ren) living at home 6=One parent with child(ren) living at home and other(s) 7=An other composition | No value |
| Owner-occupied property or rented house | Q21 | 1=Owner-occupied property 2=Rented house | No value |
| Type of property | Q22 | 1=Detached, semidetached, villa, bungalow, country house 2=Flat, tenament (etagewoning), apartment, maisonnette, 3=A house with a separate shop, office, practice or business premises 4=Housing unit with shared use of toilet and kitchen 5=None of these | No value |
| Which neighbourhood | Q25 | 1=Het Funen (Amsterdam) 2=Meer en Oever (Amsterdam) 3=Chassé Park (Breda) 4=De Haverleij ('s-Hertogenbosch) | No value |
| Physical living environment | | | |
| Satisfaction with current living environment | Q3 | 1=Very satisfied 2=Satisfied 3=Neither satisfied, nor dissatisfied 4=Dissatisfied 5=Very dissatisfied 8=Refused 9=Do not know | 2 1 0 -1 -2 0 0 |
| Presence attractive buildings | Q4 | 1=Strongly agree 2=agree 3=Neither agree, nor disagree 4=Disagree 5=Totally disagree 8=Refused 9=Do not know | 2 1 0 -1 -2 0 0 |
| Choise neighbourhood/house | Q5 | 1=For this property 2=For this neighbourhood 3=For this neighbourhood and this house 4=No (this was the first available property) | No value |
| Social capital | | | |
| Feeling of belonging | | | |
| Feeling attached to neighbourhood | Q10_1 | 1=Strongly agree 2=agree 3=Neither agree, nor disagree 4=Disagree 5=Totally disagree 8=Refused 9=Do not know | 2 1 0 -1 -2 0 0 |

| | | | |
|--|-------|--|-----------------------------------|
| Feeling at home in neighbourhood | Q10_2 | 1=Strongly agree 2=agree 3=Neither agree, nor disagree 4=Disagree 5=Totally disagree 8=Refused 9=Do not know | 2 1 0 -1 -2 0 0 |
| Opinion on feeling at home in neighbourhood | Q8_1 | 1=Very important 2=Important 3=Unimportant 4=Completely unimportant 8=Refused 9=Do not know | 2 1 -1 -2 0 0 |
| Opinion on living in a neighbourhood without a bad image | Q8_6 | 1=Very important 2=Important 3=Unimportant 4=Completely unimportant 8=Refused 9=Do not know | 2 1 -1 -2 0 0 |
| Feeling of safety | | | |
| Graffiti walls/building | Q6_1 | 1=Often 2=Sometimes 3=Almost never 8=Refused 9=Do not know | -1 0 1 0 0 |
| Rubbish on the streets | Q6_2 | 1=Often 2=Sometimes 3=Almost never 8=Refused 9=Do not know | -1 0 1 0 0 |
| Nuisance direct neighbours | Q7_1 | 1=Often 2=Sometimes 3=Almost never 8=Refused 9=Do not know | -1 0 1 0 0 |
| Nuisance local residents | Q7_2 | 1=Often 2=Sometimes 3=Almost never 8=Refused 9=Do not know | -1 0 1 0 0 |
| Nuisance youth | Q7_3 | 1=Often 2=Sometimes 3=Almost never 8=Refused 9=Do not know | -1 0 1 0 0 |
| Nuisance noise pollution | Q7_4 | 1=Often 2=Sometimes 3=Almost never 8=Refused 9=Do not know | -1 0 1 0 0 |
| Nuisance smell/dus/dirt | Q7_5 | 1=Often 2=Sometimes 3=Almost never 8=Refused 9=Do not know | -1 0 1 0 0 |
| Afraid to be harassed or robbed in neighbourhood | Q16 | 1=Strongly agree 2=agree 3=Neither agree, nor disagree 4=Disagree 5=Totally disagree 8=Refused 9=Do not know | -2 -1 0 1 2 0 0 |
| Neighbourhood will improve/deteriorate/remains the same | Q17 | 1=Improve 2=Deteriorate 3=Remain the same | 1 -1 0 |

| | | | |
|--|-------|--|-----------------------------------|
| | | 8=Refused | 0 |
| | | 9=Do not know | 0 |
| Social Network | | | |
| Lots of contact with other local residents | Q10_3 | 1=Strongly agree 2=agree 3=Neither agree, nor disagree 4=Disagree 5=Totally disagree 8=Refused 9=Do not know | 2 1 0 -1 -2 0 0 |
| Feeling joint responsibility livability within the neighbourhood | Q10_4 | 1=Strongly agree 2=agree 3=Neither agree, nor disagree 4=Disagree 5=Totally disagree 8=Refused 9=Do not know | 2 1 0 -1 -2 0 0 |
| There is pleasant neighbourhood association | Q10_5 | 1=Strongly agree 2=agree 3=Neither agree, nor disagree 4=Disagree 5=Totally disagree 8=Refused 9=Do not know | 2 1 0 -1 -2 0 0 |
| This is a "cozy" neighbourhood/ with much solidarity | Q10_6 | 1=Strongly agree 2=agree 3=Neither agree, nor disagree 4=Disagree 5=Totally disagree 8=Refused 9=Do not know | 2 1 0 -1 -2 0 0 |
| People hardly know each other | Q10_7 | 1=Strongly agree 2=agree 3=Neither agree, nor disagree 4=Disagree 5=Totally disagree 8=Refused 9=Do not know | -2 -1 0 1 2 0 0 |
| Satisfaction with composition of population in neighbourhood | Q10_8 | 1=Strongly agree 2=agree 3=Neither agree, nor disagree 4=Disagree 5=Totally disagree 8=Refused 9=Do not know | 2 1 0 -1 -2 0 0 |

Appendix 4: Overview statistical tests in order to determine level of social capital

| Subgroup | Survey question Mean/Median | Variable | Test | Cell count | CLM ¹ | Sign. (2-tailed) |
|--|---|----------|----------------------------|------------|------------------|------------------|
| General data | Number of persons per household (Q19) | Scale | Independent samples t-test | >5 (<20%) | n>30 | <0,05 |
| | Composition of household (Q20) | Nominal | Chi-square test | >5 (<20%) | n>30 | <0,05 |
| Physical living Environment | Owner-occupied property or rented house (Q21) | Nominal | Chi-square test | >5 (<20%) | n>30 | <0,05 |
| | Type of property (Q22) | Nominal | Chi-square test | >5 (<20%) | n>30 | <0,05 |
| | Satisfaction with current living environment (Q3) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| Social capital | Presence of attractive buildings (Q4) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| | Choice of neighbourhood/house (Q5) | Nominal | Chi-square test | >5 (<20%) | n>30 | <0,05 |
| | Feeling attached to neighbourhood (Q10_1) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| Feeling of belonging | Feeling at home in neighbourhood (Q10_2) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| | Opinion on feeling at home in neighbourhood (Q8_1) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| | Opinion on image of neighbourhood (Q8_2) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| Feeling of safety | Graffiti op walls/building (Q6_1) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| | Rubbish on streets (Q6_2) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| | Nuisance direct neighbours (Q7_1) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| Social network | Nuisance local residents (Q7_2) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| | Nuisance youth (Q7_3) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| | Nuisance noise pollution (Q7_4) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| | Nuisance smell/dust/dirt (Q7_5) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| | Affraid to be harassed or robbed in neighbour. (Q16) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| | Neighbourhood will improve/deteriorate/same (Q17) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| | Lots of contact with other local residents (Q10_3) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| | Feeling joint responsibility within neighbourh. (Q10_4) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| | Pleasant neighbourhood association (Q10_5) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| | 'Cozy' / sociable neighbourhood - much solidar. (Q10_6) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| Total (som soc.cap)² | People hardly know each other (Q10_7) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| | Satisfaction with composition of population (Q10_8) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |
| | (Excl. Q19,Q20,Q21,Q22,Q3,Q4,Q5) | Ordinal | Mann/Whitney test | | n>30 | <0,05 |

¹ Central Limit Theorem

² Cronbach's Alpha (>0,8)

Appendix 5: Methods of analysis

Example Het Funen:

A test for consistency between the variables that together make up the sum variable, reveal that the internal reliability is high (Crombach's Alpha). On the basis of this it can be stated that the variables are suitable in order to compose sum variable.

Onto the sum of scores, used to measure the degree of social capital, a Chi-square test was executed. To do so, the data of the survey plotted in Het Funen is compared with the data in the four-digit postcode area from the Netherlands Housing Research 2009. This analysis demonstrates that there is a statistically significant correlation between the sum scores in conjunction with the neighbourhood. Because the cell frequency in over 20 per cent of the cells is less than 5, the Chi-square test cannot be used. A contingency table shows that Het Funen scores higher on most items.

Also a Mann / Whitney test has been executed many times, because of the predominantly level of measurement which is ordinal order for most items, despite of a few nominal items. In case of a 95% confidence interval, there is a significant difference between the two distributions.

The same tests were executed for the other three case study areas. This has also be done in order to rank the four research areas in terms of social capital. This is partly necessary since the analysis of De Haverleij already demonstrated that there is too little data available from the Netherlands Housing Research 2009 for comparison.

Appendix 6: Overview results analysis social capital

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| Subgroup | Survey question Mean/Median | Haverleij Mean/Median | Het Funen Mean/Median | Chassé Park Mean/Median | Meer en Oever Mean/Median |
|------------------------------------|--|--------------------------|--------------------------|----------------------------|------------------------------|
| General data | Number of persons per household (Q19) | 3.2/3 | 3.2/4 | 1.73/2 | 2.13/2 |
| | Composition of household (Q20) | 1.83/2 | 2.24/2 | 2.95/1 | 3.17/2 |
| | Owner-occupied property or rented house (Q21) | 1.05/1 | 1.10/1 | 1.19/1 | 1.43/1 |
| | Type of property (Q22) | 1.53/1 | 1.82/2 | 1.98/2 | 2.00/2 |
| Physical living Environment | Satisfaction with current living environment (Q3) | 1.53/2 | 1.47/2 | 1.52/2 | 1.07/1 |
| | Presence of attractive buildings (Q4) | 1.45/2 | 1.53/2 | 1.56/2 | 1.96/2 |
| | Choice of neighbourhood/house (Q5) | 2.16/2 | 2.20/2 | 2.34/3 | 1.96/1 |
| Social capital | Feeling attached to neighbourhood (Q10_1) | 0.91/1 | 0.92/1 | 1/1 | 0.30/0 |
| Feeling of belonging | Feeling at home in neighbourhood (Q10_2) | 1.27/1 | 1.27/1 | 1.33/1 | 0.96/1 |
| | Opinion on feeling at home in neighbourhood (Q8_1) | 1.72/2 | 1.67/2 | 1.72/2 | 1.54/2 |
| | Opinion on image of neighbourhood (Q8_2) | 1.39/2 | 1.14/1 | 1.61/2 | 0.98/1 |
| Feeling of safety | Graffiti on walls/building (Q6_1) | 1/1 | 0.69/1 | 0.71/1 | 0.87/1 |
| | Rubbish on streets (Q6_2) | 0.8/1 | 0.33/0 | 0.55/1 | -0.13/0 |
| | Nuisance direct neighbours (Q7_1) | 0.83/1 | 0.90/1 | 0.78/1 | 0.63/1 |
| | Nuisance local residents (Q7_2) | 0.91/1 | 0.73/1 | 0.8/1 | 0.63/1 |
| | Nuisance youth (Q7_3) | 0.78/1 | 0.63/1 | 0.45/1 | 0.65/1 |
| | Nuisance noise pollution (Q7_4) | 0.84/1 | 0.63/1 | 0.53/1 | 0.52/1 |
| | Nuisance smell/dust/dirt (Q7_5) | 0.91/1 | 0.47/1 | 0.88/1 | 0.41/1 |
| | Affraid to be harassed or robbed in neighbour. (Q16) | 1.50/1 | 1.16/1 | 0.80/1 | 0.54/1 |
| | Neighbourhood will improve/deteriorate/same (Q17) | 0.13/0 | 0.24/0 | 0/0 | 0.20/0 |
| Social network | Lots of contact with other local residents (Q10_3) | 0.80/1 | 0.73/1 | 0.25/0 | 0.09/0 |
| | Feeling joint responsibility within neighbourhood. (Q10_4) | 1.14/1 | 1.20/1 | 1/1 | 0.76/1 |
| | Pleasant neighbourhood association (Q10_5) | 1.14/1 | 1.12/1 | 1.02/1 | 0.74/1 |
| | 'Cozy' / sociable neighbourhood - much solidar. (Q10_6) | 0.77/1 | 0.67/1 | 0.33/0 | 0.13/0 |
| | People hardly know each other. (Q10_7) | 0.72/1 | 0.47/1 | -0.08/0 | -0.09/0 |
| | Satisfaction with composition of population (Q10_8) | 0.86/1 | 0.73/1 | 0.92/1 | 0.35/1 |
| Total (social cap.) | (Excl Q19,Q20,Q21,Q22,Q3,Q4,Q5) | 21.38/22 | 18.96/20 | 17.67/18 | 12.20/13 |

Legend:
Bold: Significant difference neighbourhood in comparison to four digit postal code area
Red: Strong relation between location and subvariable
Orange: Medium strength relation between location and subvariable
Yellow: Weak relation between location and subvariable

⁴ The mean total (social capital), as measured as the sum of items related to social capital in the table above, is 14 for the entire Netherlands Housing Research 2009. This is based on the raw data from 69419 households examined.