

The influence of place attachment on residential satisfaction.

*A study on a sample from the Dutch population*

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## Summary

In this research paper the relationship between place attachment and residential satisfaction will be investigated. The research aim is to discover whether or not place attachment has a significant effect on residential satisfaction. The main research question used to accomplish this is “*Does place attachment have a significant effect on residential satisfaction in the Dutch population?*”. The results from this study will be useful in an academic setting because little is known about the effect of place attachment on residential satisfaction. Additionally, the results from this study will also be useful for planners, architects and policy makers.

First the existing literature on the determinants for place attachment and residential satisfaction was studied. After that the WoON data 2018 was analyzed to determine whether or not there was a significant relationship between residential satisfaction and place attachment, as well as other variables that influence place attachment. An ordinal logistic regression was used to perform the statistical analysis. Furthermore the strength and the direction of the significant relationships were studied. The main conclusions from this study is that there is a significant positive relationship between place attachment and residential satisfaction meaning that if residents are feeling more attached to their current place of residence, they are also more likely to report higher levels of residential satisfaction (1). In addition to that, being involved in the community also leads to more residential satisfaction as well as being willing to improve the neighborhood (2). Furthermore, feeling safe in the neighborhood and being in good health also have a significant positive effect on residential satisfaction (3). Both age and overall satisfaction have a negative effect on residential satisfaction, in other words, getting older and being overall satisfied with life doesn't necessarily lead to higher levels of residential satisfaction (4).

## Table of contents

Summary	1
Introduction	3
Literature	5
Data & Methodology	9
Results	14
Discussion	19
Conclusions	20
References	21

## Introduction

*"Home is where the heart is"*, it's not just a statement you can find on wooden signs in middle aged people's homes or a song by Elvis Presley, it is also a well-researched academic subject that can be summarized as place attachment. Several researchers have found that developing attachment to what a person might call home and the area in which they reside is beneficial in many ways. For example, a study by Mesch and Manor (1998) found that individuals who experience more place attachment report a greater social and political involvement in their local communities. Additionally Brown, Reed and Harris (2002) found that high feelings of attachment also leads to more willingness to work together with one's neighbor to achieve certain goals, such as protecting the local environment or the social and physical features that are characteristic of the neighborhood.

Another well researched topic related to place attachment is residential satisfaction, this can be defined as the feeling where an individual is content when he or she has, or achieved what he or she needs or desires from a place of residence (Mohit, M.A. & Al-KhanbashiRaja, A.M.M., 2014). Residential satisfaction can be influenced by a number of factors generally categorized as environmental determinants and dweller's determinants (Byun & Ha, 2016). Environmental determinants are for example, the residential characteristics or the features of the neighborhood, while the dweller's determinants are much more personal determinants, such as socio-demographic status or economic status (Byun & Ha, 2016).

It's clear that both place attachment and residential satisfaction have been extensively studied separately. However little is known about the effect place attachment has on residential satisfaction. The aim of this research paper is to discover whether or not place attachment has a significant effect on residential satisfaction and filling this research gap. Not only is this research paper useful in an academic setting, knowing which factors influence residential satisfaction is important information for planners, architects and policy makers when making zoning plans, designing new neighborhoods or making new policies that affect neighborhoods.

The main research question in this study is “*Does place attachment have a significant effect on residential satisfaction in the Dutch population?*”. When looking for an answer to this main question it is useful to first get a better understanding of the factors that influence both place attachment and residential satisfaction.

First the existing literature and theories on place attachment and residential satisfaction will be discussed. After the literature review the data and methodology of this study will be discussed, this includes a description of the sample, the variables used and the procedure. The results from the statistical analysis will be presented after that. In the discussion section the results from the statistical analysis will be discussed. The last part of this paper will be the conclusion.

## Literature

### **Place attachment**

Place attachment has been researched quite extensively and thus can be defined in many ways. Scannell and Gifford (2009) created a framework in which all the elements of the concept of place attachment are included. These elements are person, process and place. The element ‘person’ refers to the individual or collective meanings an individual might have towards a certain place. ‘Psychological’ refers to the affective, cognitive and behavioral components of place attachment. Lastly, the element ‘place’ refers to the characteristics of attachment that have to do with place such as spatial level, specificity and the distinction of social or physical elements (Scannell, Gifford, 2009).

Anton and Lawrence (2014) use the phrase “*Home is where the heart is*” as a way to define place attachment and argue that developing attachment to one’s home and local area has many, mostly positive, effects. These positive effects don’t just apply to the individual but also to the community as a whole. Mesch and Manor (1998) found that individuals who report higher levels of place attachment also report higher levels of social and political involvement in their neighborhoods. Additionally communities that consist of highly attached people show more willingness to work together to achieve a common goal such as protecting the environment (Brown et al., 2002) and protecting the physical and social characteristics that feature in the neighborhood (Mesch & Manor, 1998).

Ramkissoon et al. (2013) found that high levels of place attachment also influence both high and low effort pro-environmental behavioral intentions, additionally Vaske and Kobrin (2001) found that place identity, place dependence and place attachment are also connected with environmentally responsible behavior. Lastly Brown and Raymond (2007) argued that high levels of place attachment also lead to more willingness to advocate for the environment.

As mentioned above higher levels of place attachment also have positive effects on the individual itself. People who experience a lot of attachment to the place where they currently live benefit from a better quality of life (Harris et al., 1995), have a better physical and psychological health, have more satisfying relationships and experience greater satisfaction with their physical

environment (Tartaglia, 2012). The opposite can be said for people who experience low levels of place attachment and have negative feelings towards their current home when compared to their prior homes. They also report higher levels of stress and more problems with their health (Stokols & Shumaker, 1982).

Even though place attachment can be linked to many positive outcomes, it also has its downsides. High levels of place attachment can hinder people from considering future alternative residences (Fried, 2000) and it can also prevent people from leaving their home even when it becomes impossible for them to manage their home (Twigger-Ross & Uzzell, 1996). This can be especially problematic for the elderly who could experience benefits from living closer to medical facilities. Not being willing to leave can also be very problematic for people who live in disaster prone areas and who do not have the option, either because of health or monetary reasons, to protect their homes from destruction (Anton & Lawrence, 2014).

High levels of place attachment can also have negative effects for communities, for instance this could lead to conflicts within the neighborhood when new people with different cultural backgrounds or ethnicities move into a tight knit neighborhood (Fried, 2000). The current residents could see the new neighbors as threats to their way of life and fear that they might destroy the physical and social characteristics of the neighborhood. Devine-Wright (2009) argues that a similar thing causes local opposition groups against new developments in the area. Devine-Wright explains that people may feel threatened if they feel that the place that they are attached to might change as a result of these developments into a place they no longer feel an emotional bond with. As a result of that the community might experience negative feelings toward the people or organizations who are responsible for that change.

### **Residential satisfaction**

Just like place attachment, residential satisfaction is also a well-researched topic and the studies on this topic can, according to Weidemann and Anderson (1985), be grouped into two different categories, the first being studies of residential satisfaction as a criteria of evaluation of residential quality, and the second being studies on residential mobility. In these studies residential satisfaction is considered a predictor for behavior. Amerigo and Aragonest (1997) took this theory

as the basis for their research on residential satisfaction. The main factors that influence residential satisfaction are considered to be safety in the neighborhood, friendship, the relationship between neighbors, the number of single families versus the number of multi families, owner-rent ratio, the time a resident has lived in the house, age and stage in the life cycle (Amerigo & Aragonest, 1997)

A different study on residential satisfaction states that the main factors that influence residential satisfaction can be categorized into five components (Mohit et al., 2010). The first component focuses on the dwelling unit features such as the floor plan and which rooms are included in the unit. The second component focuses on dwelling support services such as electricity supply and firefighting systems. The third component focuses on the public facilities nearby the dwelling unit, such as open space and parking facilities. The fourth component focuses on the social environment and looks at both physical and social variables that are likely to affect residential satisfaction such as crime rates and security levels in the neighborhood. The fifth and final component focuses on the facilities in the neighborhood such as markets and public transport facilities (Mohit et al., 2010).

Byun and Ha (2016) have also studied the factors that influence residential satisfaction in relation to public rental housing types and argue that the components as stated by Mohit can be summarized into environmental determinants and dweller's or individual determinants (Byun & Ha, 2016). The dwelling unit features, neighborhood features and the neighbor relationships can be summarized as the environmental determinants while the socio-demographic status and the economic status can be summarized as the dweller's or individual determinants (Byun & Ha, 2016).

When the existing theories and literature on place attachment and residential satisfaction are combined a new conceptual model can be designed. This model indicates that residential satisfaction is being influenced by environmental determinants and individual determinants. The environmental determinants have a lot to do with place attachment as indicated by the literature. Examples of the factors that are expected to influence residential satisfaction are attachment to the neighborhood, feeling responsible for the liveability of the neighborhood, safety in the neighborhood, age and duration of residence. The full conceptual model can be found below in figure 1.

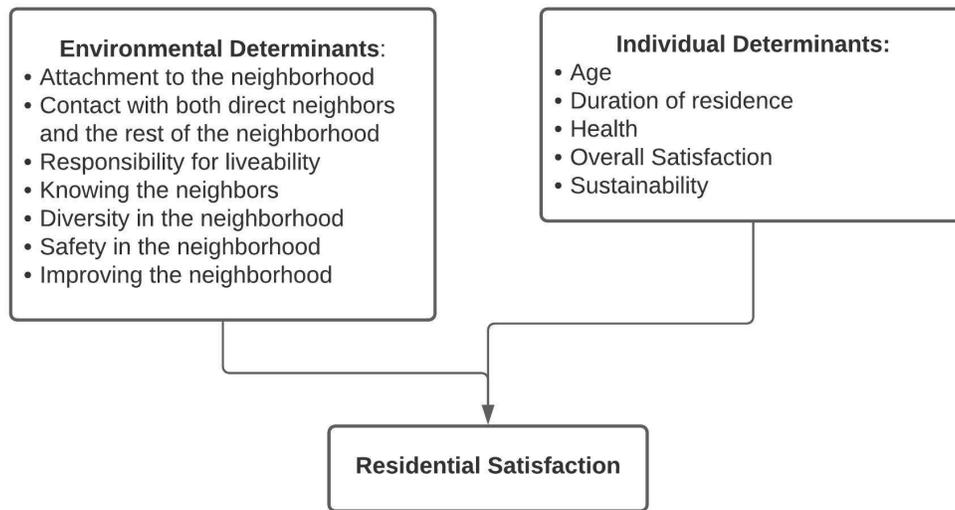


Figure 1: "Conceptual Model"

The theories and literature lead to the following null hypothesis and hypothesis that will be tested in a statistical setting: *"In the Dutch population there is no relationship between residential satisfaction and place attachment"*. Because this hypothesis will be researched by doing a statistical analysis the alternative hypothesis is *"In the Dutch population there is a relationship between residential satisfaction and place attachment"*.

## Data & Methodology

### Participants

For this research paper the WoON 2018 dataset was used, the data from this dataset is collected by the Central Bureau for Statistics (CBS) in the Netherlands in cooperation with the Ministry of Internal Affairs. Every three years approximately 60.000 respondents are surveyed on topics such as household composition, characteristics of the respondent's residence, housing costs, housing requirements and the respondent's living environment. Additionally, respondents are also surveyed on specific themes such as energy, moving residence and leisure. The respondents are selected based on a nationwide sample. The respondents all live in private households and residents from institutions are excluded. The respondents are surveyed through face to face interviews, telephone interviews and via the internet.

In 2018 a little over 70.000 people were surveyed by the Central Bureau for Statistics and approximately 67.000 respondents fully completed the survey. This study only focused on respondents who reported that their age was somewhere between 34 and 64 years old leaving a little over 31.000 respondents in the sample. This decision was made because middle aged people have been settled down for a while and are more likely to experience higher levels of place attachment. Below a frequency table can be found presenting the age groups and how many respondents are in each group.

*Age of the respondent*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	35-44 years	8659	27,3	27,3	27,3
	45-54 years	11329	35,8	35,8	63,1
	55-64 years	11701	36,9	36,9	100,0
	Total	31689	100,0	100,0	

Figure 2: "Frequency table age"

### Variables

The environmental determinants were measured using the following the variables 'satisfaction with current neighborhood', 'attachment to the current neighborhood', 'contact with the next door

neighbors', 'contact with the rest of the neighborhood', 'responsibility for the liveability of the neighborhood', 'pleasant forms of contact with the neighbors', 'cohesion in the neighborhood', 'knowing the neighbors', 'diversity in the neighborhood', 'safety in the neighborhood' and 'improving the neighborhood'. Each of these topics were presented to the respondents as a statement to which they could respond how much they agreed or disagreed with that statement. The only exception to this is the variable regarding improvements in the neighborhood. To this statement the respondents were given the option to say that they already helped in improving the neighborhood, that they'd like to help improve the neighborhood or that they did no such thing.

The individual determinants were measured using the following variables: 'age', 'perceived level of sustainability of the current residence', 'desired level of sustainability of the current residence', 'health' and 'overall satisfaction with life'. As mentioned earlier the variable age is summarized into categories. The variables 'perceived level of sustainability', 'desired level of sustainability' and 'health' were again presented to the respondents as a statement to which they could indicate how much they agreed or disagreed with that statement. To the question 'how would you rate your overall satisfaction with life?' respondents were asked to give a rating between 1 and 10.

Lastly, residential satisfaction was measured using just one variable 'residential satisfaction'. This topic was presented to the respondents using the statement 'I'm satisfied with my current residence' to which they would indicate how much they agreed or disagreed with that statement.

## **Procedure**

As mentioned earlier, this study focuses on respondents who have reported that their age is between 35 and 64 years old. Respondents who are considered to be of middle age are expected to experience higher levels of place attachment. As a result of that, the results are expected to be more reliable when it comes to investigating the relationship between residential satisfaction and place attachment. This is one way in which the data was cleaned. Additionally, several normality tests were done to find outliers. None were found so no further data cleaning was necessary.

After cleaning the data a frequency table was produced containing the amount of missing and valid cases and the mode for each of the variables. The variance isn't included in this frequency table as the variables are all ordinal variables. From the frequency table it can be deduced that there were

a total of 31689 respondents that are between the age of 35 and 64 years old. The frequency table can be found below in figure X.

### Frequencies

<i>Statistics</i>			
	N		Mode
	Valid	Missing	
(12.1) I'm satisfied with my current residence	31233	456	Satisfied
(13.1) I'm satisfied with the neighborhood I currently live in	31689	0	Satisfied
(13.6) I feel attached to my current neighborhood	31689	0	Agree
(13.9) I have a lot of contact with my nextdoor neighbors	31689	0	Agree
(13.10) I have a lot of contact with the rest of the neighborhood	31689	0	Neutral
(13.11) I feel responsible for the liveability of my neighborhood	31689	0	Agree
(13.12) I have pleasant forms of contact with my neighbors	31689	0	Agree
(13.13) There is a lot of cohesion in my neighborhood	31689	0	Agree
(13.14) People in this neighborhood people hardly know each other	31689	0	Disagree

(13.15) I'm satisfied with the level of diversity in my neighborhood	31689	0	Agree
(13.16) I'm afraid of being robbed or harassed in my neighborhood	31689	0	Disagree
(13.17) I actively help improve my neighborhood	31689	0	Totally agree
Age of the respondent (7 categories)	31689	0	'55-64 years
(10. 18) My current residence is sustainable	31233	456	Agree
(10.19) My current residence should be more sustainable	31233	456	Agree
(25.1) How would you rate your health?	31689	0	Good
(26.1) How would you rate your overall satisfaction with life (1-10)	31689	0	8

Figure 3 "Frequency table"

To test the null hypothesis the variables were used in an ordinal logistic regression analysis, this test is the most appropriate statistical test in this situation as the dependent variable is an ordinal variable. The formula associated with the ordinal logistic regression can be found below.

$$\text{logit} ( P ( Y \leq j ) ) = \beta_j 0 + \beta_1 x_1 + \dots + \beta_p x_p .$$

In this setting 'residential satisfaction' is the dependent variable. The other variables mentioned earlier are considered to be the independent variables as it will be investigated whether or not residential satisfaction depends on one of the independent variables.

Because this research uses secondary data there won't be any ethical issues. The respondents who have participated in the study have given consent to participate and for the results to be used in an academic setting. The responses of the participants were anonymized and used with confidentiality. The data won't be used to do harm in this study and will again be treated with confidentiality.

## Results

To test the null hypothesis and see whether or not place attachment has a significant effect on residential satisfaction an ordinal logistic regression was conducted. Before doing this analysis several standard assumptions were checked. The data was normally distributed and the sample size was big enough to conduct an ordinal logistic regression. The regression analysis was conducted with the variable 'residential satisfaction' as the dependent variable and the variables on attachment and satisfaction with the neighborhood, age, duration of residence, sustainability, health and overall satisfaction with life as the independent variables. In the regression analysis the standard level of significance at 95% was used. The value for the Nagelkerke statistic is 0.422, this indicates that a fair amount of variance is explained by the model. Because this is a pseudo R-Square statistic, no percentage of explained variance can be given.

The results from the ordinal logistic regression analyses can be found on the next page in figure X. In this figure the dependent and the independent variables can be found along with the corresponding answers from the respondents. Additionally, several statistical are also provided in the figure from with the level of significance is the most important.

		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Dependent variable: I'm satisfied with my current residence (12.1)	Very Satisfied	-4,535	0,473	92,086	1	0,000	-5,462	-3,609
	Satisfied	-1,358	0,472	8,273	1	0,004	-2,283	-0,433
	Neutral	0,479	0,472	1,030	1	0,310	-0,446	1,403
	Dissatisfied	2,013	0,473	18,101	1	0,000	1,085	2,940
Independent variable: I'm satisfied with the neighborhood I currently live in (13.1)	Very Satisfied	-2,578	0,111	535,411	1	0,000	-2,796	-2,359
	Satisfied	-1,384	0,108	163,467	1	0,000	-1,596	-1,172
	Neutral	-0,771	0,108	50,835	1	0,000	-0,983	-0,559
	Dissatisfied	-0,471	0,112	17,615	1	0,000	-0,691	-0,251
	Very Dissatisfied	0 <sup>a</sup>			0			
Independent variable: I feel attached to my current neighborhood (13.6)	Totally Agree	-1,037	0,072	205,357	1	0,000	-1,179	-0,895
	Agree	-0,724	0,063	131,130	1	0,000	-0,848	-0,600
	Neutral	-0,541	0,062	75,030	1	0,000	-0,664	-0,419
	Disagree	-0,246	0,063	15,070	1	0,000	-0,370	-0,122
	Totally Disagree	0 <sup>a</sup>			0			
Independent variable: I have a lot of contact with my nextdoor neighbors (13.9)	Totally Agree	-0,237	0,086	7,552	1	0,006	-0,405	-0,068
	Agree	-0,146	0,076	3,725	1	0,054	-0,294	0,002
	Neutral	-0,086	0,075	1,314	1	0,252	-0,233	0,061
	Disagree	-0,061	0,075	0,654	1	0,419	-0,207	0,086
	Totally Disagree	0 <sup>a</sup>			0			
Independent variable: I have a lot of contact with the rest of the neighborhood (13.10)	Totally Agree	0,403	0,100	16,383	1	0,000	0,208	0,599
	Agree	0,295	0,074	15,858	1	0,000	0,150	0,441
	Neutral	0,234	0,072	10,512	1	0,001	0,093	0,376
	Disagree	0,158	0,071	4,926	1	0,026	0,018	0,297
	Totally Disagree	0 <sup>a</sup>			0			
Independent variable: I feel responsible for the liveability of my neighborhood (13.11)	Totally Agree	-0,537	0,113	22,456	1	0,000	-0,759	-0,315
	Agree	-0,369	0,103	12,806	1	0,000	-0,571	-0,167
	Neutral	-0,227	0,104	4,738	1	0,030	-0,431	-0,023
	Disagree	-0,304	0,108	7,926	1	0,005	-0,515	-0,092
	Totally Disagree	0 <sup>a</sup>			0			
Independent variable: I have pleasant forms of contact with my neighbors (13.12)	Totally Agree	-0,514	0,136	14,300	1	0,000	-0,781	-0,248
	Agree	-0,393	0,124	10,076	1	0,002	-0,636	-0,150
	Neutral	-0,318	0,122	6,802	1	0,009	-0,557	-0,079
	Disagree	-0,262	0,126	4,342	1	0,037	-0,508	-0,016
	Totally Disagree	0 <sup>a</sup>			0			
Independent variable: There is a	Totally Agree	0,136	0,104	1,697	1	0,193	-0,068	0,340
	Agree	-0,042	0,082	0,265	1	0,607	-0,204	0,119

lot of cohesion in my neighborhood (13.13)	Neutral	0,049	0,080	0,375	1	0,541	-0,107	0,205
	Disagree	0,002	0,079	0,001	1	0,980	-0,152	0,156
	Totally Disagree	0 <sup>a</sup>			0			
Independent variable: People in this neighborhood hardly know each other (13.14)	Totally Agree	0,247	0,098	6,306	1	0,012	0,054	0,439
	Agree	0,138	0,054	6,536	1	0,011	0,032	0,243
	Neutral	0,088	0,048	3,416	1	0,065	-0,005	0,182
	Disagree	-0,009	0,042	0,049	1	0,825	-0,091	0,073
	Totally Disagree	0 <sup>a</sup>			0			
Independent variable: I'm satisfied with the level of diversity in my neighborhood (13.15)	Totally Agree	-0,315	0,099	10,072	1	0,002	-0,509	-0,120
	Agree	-0,117	0,088	1,782	1	0,182	-0,289	0,055
	Neutral	-0,067	0,088	0,570	1	0,450	-0,240	0,106
	Disagree	0,022	0,092	0,058	1	0,809	-0,159	0,204
	Totally Disagree	0 <sup>a</sup>			0			
Independent variable: I'm afraid of being robbed or harassed in my neighborhood (13.16)	Totally Agree	0,436	0,114	14,630	1	0,000	0,212	0,659
	Agree	0,171	0,065	6,878	1	0,009	0,043	0,299
	Neutral	0,254	0,045	31,286	1	0,000	0,165	0,343
	Disagree	0,113	0,028	16,377	1	0,000	0,058	0,168
	Totally Disagree	0 <sup>a</sup>			0			
Independent variable: I actively help improve my neighborhood (13.17)	Yes, I'm already doing this	-0,149	0,044	11,560	1	0,001	-0,235	-0,063
	Yes, I want to do this	-0,103	0,048	4,703	1	0,030	-0,197	-0,010
	No	0 <sup>a</sup>			0			
Independent variable: Age of the respondent (7 categories)	35-44 years	0,485	0,034	199,027	1	0,000	0,417	0,552
	45-54 years	0,209	0,030	49,536	1	0,000	0,151	0,268
	55-64 years	0 <sup>a</sup>			0			
Independent variable: My current residence is sustainable (10.18)	Totally Agree	-2,444	0,069	1254,052	1	0,000	-2,580	-2,309
	Agree	-1,894	0,052	1317,237	1	0,000	-1,996	-1,791
	Neutral	-1,491	0,050	874,065	1	0,000	-1,590	-1,392
	Disagree	-0,999	0,051	389,108	1	0,000	-1,098	-0,900
	Totally Disagree	0 <sup>a</sup>			0			
Independent variable: My current residence should be more sustainable (10.19)	Totally Agree	0,966	0,089	117,722	1	0,000	0,791	1,140
	Agree	0,504	0,085	35,551	1	0,000	0,339	0,670
	Neutral	0,315	0,085	13,844	1	0,000	0,149	0,481
	Disagree	0,108	0,086	1,564	1	0,211	-0,061	0,277
	Totally Disagree	0 <sup>a</sup>			0			

Independent variable: How would you rate your health? (25.1)	Very Good	-0,531	0,074	51,689	1	0,000	-0,675	-0,386
	Good	-0,241	0,069	12,104	1	0,001	-0,377	-0,105
	Moderate	0,007	0,073	0,010	1	0,920	-0,136	0,151
	Neutral	0,128	0,079	2,615	1	0,106	-0,027	0,282
	Bad	0 <sup>a</sup>			0			
Independent variable: How would you rate your overall satisfaction with life (1-10) (26.1)	1	1,629	0,330	24,337	1	0,000	0,982	2,276
	2	1,619	0,382	17,923	1	0,000	0,869	2,368
	3	1,354	0,211	41,065	1	0,000	0,940	1,768
	4	1,278	0,165	60,198	1	0,000	0,955	1,600
	5	1,143	0,122	87,633	1	0,000	0,903	1,382
	6	0,945	0,095	99,236	1	0,000	0,759	1,131
	7	0,621	0,082	56,739	1	0,000	0,460	0,783
	8	0,111	0,080	1,921	1	0,166	-0,046	0,268
	9	-0,442	0,084	27,513	1	0,000	-0,608	-0,277
	10	0 <sup>a</sup>			0			

Link function: Logit.

a. This parameter is set to zero because it is redundant.

*Figure 4 "Results ordinal logistic regression analysis"*

### **Environmental determinants**

When looking at the existing literature it is expected that all the included variables have a significant effect on residential satisfaction. The first variable ‘satisfaction with the neighborhood’ does seem to have a significant effect on residential satisfaction at the usual 95% level of significance for all the answers given. Meaning that satisfaction with the neighborhood always has an effect on residential satisfaction, both negative and positive. The same can be said for attachment to the neighborhood as all the answers for this variable are significant. Staying in contact with the neighbors only has a significant effect on residential satisfaction when neighbors are having a lot of contact with each other, if neighbors have little to no contact with each other residential satisfaction is not affected. Staying in contact with the rest of the neighborhood is significant even when respondents have reported they have little to no contact with the neighborhood. This indicates that contact with the rest of the neighborhood is more important than contact with the next door neighbors in relation to residential satisfaction. Feeling responsible for the liveability of the neighborhood also appears to have a significant effect on residential

satisfaction and is more significant when respondents report that they feel high levels of responsibility. Having pleasant forms of contact with the neighbors in the neighborhood also has a significant effect on residential satisfaction. Having unpleasant forms of contact with the neighbors also has a significant effect on residential satisfaction but this effect is less significant. Living in a cohesive neighborhood does not have a significant effect on residential satisfaction. When the neighbors hardly know each other residential satisfaction is affected, but when the neighbors know each other very well residential satisfaction is not affected. Diversity in the neighborhood has a significant effect on residential satisfaction, but only when the residents are very satisfied with the diversity in the neighborhood. If the residents are somewhat satisfied or dissatisfied with the diversity in the neighborhood residential satisfaction is not affected. Feeling safe in the neighborhood also seems to be an important factor that influences residential satisfaction. Feeling safe and feeling unsafe both have a significant effect on residential satisfaction. Improving the neighborhood or wanting to do this also have a significant effect on residential satisfaction.

### **Individual determinants**

The first variable that is considered to be an individual determinant is 'age' and appears to be significant for all the age groups included in this analysis, but the relationship seems to be more significant for younger respondents. Sustainability also seems to have a significant effect on residential satisfaction, both when respondents reported that they were satisfied with the current level of sustainability and when they reported that they weren't. Desiring higher levels of sustainability also has a significant effect on residential satisfaction except when residents don't desire a higher level of sustainability. Being in good health also has a significant effect on residential satisfaction. When residents report that they are in moderate or bad health residential satisfaction is not affected. Lastly, overall satisfaction with life also has a significant effect on residential satisfaction. However, when residents score their overall satisfaction with life with an eight residential satisfaction doesn't seem affected. Since all the other scores are significant this could be a type I error.

## Discussion

The null hypothesis that was studied through the ordinal logistic regression is “*In the Dutch population there is no relationship between residential satisfaction and place attachment*”. The results indicate that this hypothesis may be rejected and the alternative hypothesis, “*In the Dutch population there is a relationship between residential satisfaction and place attachment*”, may be accepted.

The results from the other variables suggest that Mesch and Manor’s (1998) findings are supported when it comes to the effect of social involvement on place attachment. When residents report more contact with their next door neighbors and the rest of the neighborhood residential satisfaction increases. The findings from Vaske and Kobrin (2001) as well as the findings from Brown and Raymond (2007) are also supported by the results from the statistical analysis. When the residents report that they feel responsible for the livability of the neighborhood as well as when they report that they feel that their residence is sustainable, an increase in residential satisfaction can be seen. The results also indicate that the findings from Amerigo and Aragonest (1997) are being supported when it comes to safety, when the respondents report that they feel afraid of being robbed or harassed in the neighborhood their residential satisfaction goes down, in other words, when people feel safe in their neighborhood, they are likely to experience higher levels of residential satisfaction.

Amerigo and Aragonest (1997) also found that age has an effect on residential satisfaction. The results from the analysis only show that this claim can be supported. The findings from Harris et al. (1995) aren’t supported by the findings from this study, even though a significant relationship was found between overall satisfaction with life and residential satisfaction, this relationship is a negative one. When people are satisfied with life they aren’t necessarily satisfied with their residence as well. Lastly, the claims made by Tartaglia (2012) on the relationship between health and residential satisfaction can be supported. The results not only show that there is a relationship between the two, the results also show that this is a positive relationship. In other words, when people are in better health they are also more likely to experience greater amounts of residential satisfaction.

## Conclusions

In this research paper the relationship between place attachment and residential satisfaction was studied. This was done by investigating which factors influence place attachment and residential satisfaction according to the existing literature on both topics. The main factors that influence place attachment can be related to the community as a whole but also to the individual. When residents are socially and politically more involved in the community, they are more likely to report higher levels of place attachment. The same can be said for residents who show more willingness to work together to protect the environment in the neighborhood. On an individual level the literature indicates that people who report high levels of place attachment are more likely to be happier and have better health. Residential satisfaction is influenced by a number of the same factors, additionally the literature shows that residential satisfaction is also influenced by a feeling of safety in the neighborhood, age and the time an individual has lived in a certain place. To investigate the effects of place attachment on residential satisfaction a ordinal logistic regression was performed and the results indicate that place attachment has a significant and positive effect on residential satisfaction. Along with that, the results also indicate that having close contact with the neighbors next door and the rest of the neighborhood also has a significant positive effect on residential satisfaction. Feeling responsible for the liveability in the neighborhood and feeling safe in the neighborhood also have a significant effect on residential satisfaction. Age and overall satisfaction were both found to have a significant relationship with residential satisfaction but this relationship was negatively associated. Lastly, people who are in good health also seem to be satisfied with their current place of residence. In conclusion, there is a relationship between place attachment and residential satisfaction and residential satisfaction is further influenced by having close contact with the neighborhood, being willing to improve the liveability of the neighborhood, feeling safe in the neighborhood and being in good health. When doing research on this topic in the future it would be interesting to add variables on income and resident being a homeowner or a tenant and doing in depth interviews to investigate the underlying subjective factors for residential satisfaction.

## References

- Anton, C.E., Lawrence, C. (2014). Home is where the heart is: The effect of place of residence on place attachment and community participation. *Journal of Environmental Psychology*, 40, 451-461
- Amerigo, M. & Aragonés, J.I. (1997). A theoretical and methodological approach to the study of residential satisfaction. *Journal of Environmental Psychology*, 17 (1), 47-57
- Brown, G. & Raymond, C. (2007). The relationship between place attachment and landscape values: Toward mapping place attachment. *Applied Geography*, 27 (2), 89-111
- Brown, G., Reed, P. & Harris, C. (2002). Testing a place-based theory for environmental evaluation: An Alaskan case study. *Applied Geography*, 22 (1), 49-77.
- Byun, G. & Ha, M. (2016). The Factors Influencing Residential Satisfaction by Public Rental Housing Type. *Journal of Asian Architecture and Building*, 15 (3), 535-542.
- Devine-Wright, P. (2009). Rethinking NIMBYism: The role of place attachment and place identity in explaining place-protective action. *Journal of Community & Applied Social Psychology*, 19 (6), 426-441
- Fried, M. (2000). Continuities and discontinuities of place. *Journal of Environmental Psychology*, 20 (3), 193-205
- Harris, P.B., Werner, C.M., Brown, B.B. & Ingebritsen, D. (1995). Relocation and privacy regulation: A cross-cultural analysis. *Journal of Environmental Psychology*, 15 (4), 311-320
- Mesch, G.S. & Manor, O. (1998). Social Ties, Environmental Perception, And Local Attachment. *Environment and Behavior*, 30 (4), 504-519.

Mohit, M.A., Al-KhanbashiRaja, A.M.M. (2014). Residential Satisfaction - Concept Theories and Empirical Studies. *Planning Malaysia: Urban Planning and Local Governance*, 3, 47-66.

Mohit, M.A., Ibrahim, M. & Rashid, Y.R. (2010). Assessment of residential satisfaction in newly designed public low-cost housing in Kuala Lumpur, Malaysia. *Habitat International*, 34 (1), 18-27

Ramkissoon, H., Smith, L.D.G. & Weiler, B. (2013). Testing the dimensionality of place attachment and its relationships with place satisfaction and pro-environmental behaviours: A structural equation modelling approach. *Tourism Management*, 36, 552-566

Scannell, L. & Gifford, R. (2009). Defining place attachment: A tripartite organizing framework. *Journal of Environmental Psychology*, 30 (1), 1-10.

Stokols, D. & Shumaker, S.A. (1982). The Psychological Context of Residential Mobility and Well-Being. *Journal of Social Issues*, 38 (3), 149-171

Tartaglia, S. (2012). Different Predictors of Quality of Life in Urban Environment. *Social Indicators Research*, 113 (3), 1045-1053

Twigger-Ross, C.L. & Uzzell, D.L. (1996). Place and identity processes. *Journal of Environmental Psychology*, 16 (3), 205-220

Vaske, J.J. & Kobrin, K.C. (2001). Place Attachment and Environmentally Responsible Behavior. *The Journal of Environmental Education*, 32 (4), 16-21

Weidemann, S. & Anderson, J.R. (1985). A Conceptual Framework for Residential Satisfaction. *Home Environments*, 8, 153-182