‘Neighbourhood cohesion and its effects on the desire to move:

A case study in the Netherlands’

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Abstract

The past decade, the devotion to neighbourhoods is decreasing among Dutch residents and the people desiring to move is increasing, which affects the well-being of residents. This thesis examines how the desire to leave a neighbourhood is affected by neighbourhood cohesion using survey data from the Netherlands. Multiple reasons to leave a neighbourhood are identified and a variable for neighbourhood cohesion is created. Methods which include logistic regression models are used. It is found there is a significant relation between neighbourhood cohesion and the desire to leave a neighbourhood. If neighbourhood cohesion increases, the desire to leave the neighbourhood will decrease. Further, the results of this study show that neighbourhood cohesion has a significant effect on the desire to leave a neighbourhood, only neighbourhood appearance and age of the respondent have a larger effect on desiring to leave a neighbourhood.

Keywords Social cohesion · Neighbourhood cohesion · Leaving the neighbourhood · Moving behaviour

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1. Introduction

1.1 Motivation

Overall housing satisfaction in the Netherlands has been decreasing over the past decades. The Dutch housing stock does not keep up with demographic growth, causing an increased difficulty to find an appropriate home in a suitable neighbourhood (Algemeen Dagblad, 2018). The Dutch Central Bureau of Statistics (2019) reports that the satisfaction-rate of people with a rental home has decreased from 81% to 71% over the period 2002-2018. The satisfaction-rate of owner-occupier housing also decreased from 97% to 93% over the same period (CBS, 2019a). The results of the residential research WoON 2018 show that the number of people who have a desire to leave the neighbourhood is increasing, compared to other years. The number of people desiring to move has increased from 24% to 34% over the period 2012-2018. Moreover, the results of the WoON research show that the degree of devotedness to a neighbourhood is decreasing among residents. Fewer people feel at home in their own neighbourhood (CBS, 2019b).

Devotedness to a neighbourhood and feeling home in a neighbourhood are one of many predictors of happiness, and happiness is one of the indicators which is able to contribute to mental health (Kozma & Stones, 1983; Peck & Kay Stewart, 1985). When there is social cohesion, people are able to participate in community life and their attitude towards others gets nicer. This causes the society to gain more social relationships and release stress, both proven to affect the mental health (Fonseca, et al., 2018). On the other side, a lack on social cohesion may lead to risky behaviour, crime, or even suicides (OECD, 2011). A happy and safe society concerns governments, as well as individuals, since mental illness is found to be a major source of suffering, costing billions to treat (Diener, 2019). Since devotedness to neighbourhoods is decreasing and the desire to move is increasing, the effect of neighbourhood cohesion on the desire to move is of interest for governments and policymakers. Governmental bodies are able to introduce measures to increase neighbourhood cohesion, if it is found that cohesion effects the desire to leave the neighbourhood. Some considerable measures could be organising local events or creating comfortable public spaces where people are more likely to communicate with others (Méndez, et al., 2020).

Motivated by above concerns, this thesis examines the relationship between neighbourhood cohesion and the desire to leave the neighbourhood, taking other considerations to move into account.

1.2 Literature review

Most of the existing literature on desiring to move focusses on reasons why people move (Schachter, 2001; Permentier, et al., 2009; Groot, et al., 2011). It is found that there are multiple reasons to move in general. The reasons vary from personal reasons, such as a new job. Housing related reasons, such as desiring a bigger house, and neighbourhood related reasons such as criminality (Schachter, 2001). For example, a study by Permentier et al. (2009), shows that the reputation of a neighbourhood affects the desire to move. Various literature on neighbourhood cohesion and desiring to move is likely to be related to residential satisfaction. Multiple studies claim that residential satisfaction deficits as one of the predictors for desiring to move (Morris, et al., 1976; Culter, et al., 2011). Relative few studies consider the relationship between neighbourhood cohesion and residential satisfaction. Papers by Ham & Feijten (2008) and Clark & Coulter (2015), show that an increase of neighbourhood deprivation and changes in neighbourhood ethnic composition leads to a decrease in residential satisfaction. Furthermore, it is found that feeling similar to others in the neighbourhood reduces the desire to move (Clark & Coulter, 2015). Right now it is unclear how big the effect of cohesion is on the desire to move, compared to other reasons for desiring to move.

Motivated by the above concerns, this thesis extends to the literature in several ways. There is contribution to the literature by estimating the relationship between cohesion and the desire to leave the neighbourhood. furthermore, neighbourhood cohesion is compared to other considerations to leave a neighbourhood, which has not been done in current literature.

1.3 Research problem statement

This thesis aims to fill the gap in the literature by showing the relationship between neighbourhood cohesion and the desire to leave the neighbourhood. Therefore, the following question is answered within this research:

"To what extent does neighbourhood cohesion affect the desire to leave a neighbourhood?"

To answer this question, the following sub-questions are answered and elaborated within the theory part of this thesis. Since cohesion is a controversial phenomenon, we analyse which factors should be included within the empirical methods. Further, other potential reasons affecting moving behaviour are studied. Both these concepts are worked out in the theoretical part and considered in the conducted empirical methods. The dataset "Woon Onderzoek 2018" consisting of a Dutch household sample survey of 67,523 respondents is used as this dataset is

representable for all Dutch households. Moreover, as this dataset is generated from answers to 922 questions, data on neighbourhood cohesion, the desire to leave a neighbourhood and other potential influential factors such as personal characteristics are abundant. As desire to leave the neighbourhood is coded as a binary variable with respondents either 'wanting to leave the neighbourhood' or 'not wanting to leave the neighbourhood', binary logistic regression models are used to estimate the association with neighbourhood cohesion.

The remainder of this thesis is organized as follows. Section 2 describes the relevant theory on moving behaviour and neighbourhood cohesion. Section 3 presents the data, methods and empirical models used. Section 4 presents the results, and section 5 concludes.

2. Theory

In this chapter, the theory on moving behaviour and neighbourhood cohesion is discussed. First the literature on moving behaviour is analysed and multiple reasons to move are identified. This section covers personal- and neighbourhood related causes to move. This is followed by discussing the determents of neighbourhood cohesion. Next, all concepts analysed in the literature are shown schematically in a conceptual model, followed by hypothesis.

2.1 Moving behaviour

Desiring to move can be defined as 'wishing to live in another house'. Multiple studies show that desiring to move is closely related to residential satisfaction and overall well-being (Lu, 1998). Although, moving on one's own initiative has positive effects on housing satisfaction (Bond, et al., 2012; Wolbring, 2017). The motives for desiring to move are a complex accumulation of multiple desires and experiences (Nowok, et al., 2016). Schachter (2001)

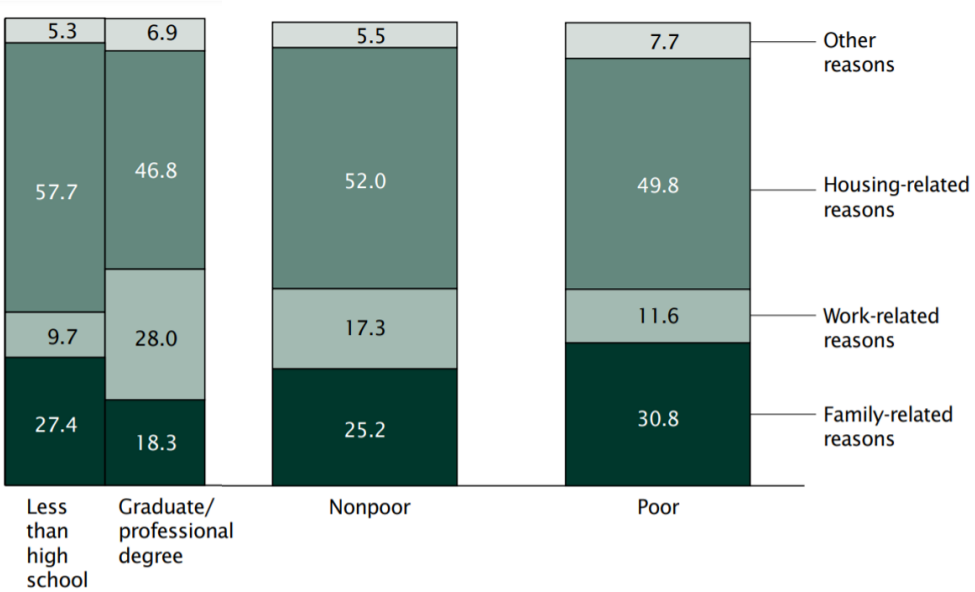

Figure 1 Subdivided categories on why people consider moving *(Schachter, 2001)*.

conducted a study on why people move. As can be seen in *figure 1*, this paper makes a distinction between family-related reasons, work-related reasons, housing-related reasons, and other reasons. The research found that personal circumstances such as education, income level and age, all affect the desire to move. People with a higher income do overall have more choice on housing. It indirectly affects the type of ownership, (social) rent and owner-occupied housing are correlated to the level of education and -income (Kemp, 2011). In addition to education and income, older people have other considerations for for moving behaviour. It is found that older people have a different rate of dissatisfaction regarding housing- and neighbourhood dwellings (Hansen & Gottschalk, 2006).

Following Stafford & McCarthy (2006) and Aluko (2011), considerations to move can be split into housing-related reasons and neighbourhood-related reasons. The authors claim housing characteristics affect the desire to move, but not contribute in desiring to leave a neighbourhood. Referencing to people moving within the same neighbourhood due to the house being too small, no outdoor space or missing a private parking. Since cohesion is neighbourhood-related, additional neighbourhood characteristics are identified which might impact the desire to leave a neighbourhood. According to Mair, et al. (2008), neighbourhood characteristics such as: socioeconomic and racial composition, stability, and the quality of the built environment are found to be related to housing satisfaction and moving behaviour.

Hunter (2007) found that a key factor of moving behaviour is the type of area. Young people are found to be more likely to leave the neighbourhood in rural areas and move to more urbanised areas, mainly due to the wide range of amenities (Hunter, 2007). On the other hand, older people are found to be happier in a natural and soothing environment. Hence, more likely to move away from urban areas, since nature in urban areas is limited to parks (Peters, et al., 2010).

Another factor which affects moving behaviour is the attractiveness of a neighbourhood. Land & Doff (2010) researched the desire to leave deprived neighbourhoods with a decreasing reputation. The authors concluded that appearance, level of maintainance and attractiveness do indeed affect the desire to leave the neighbourhood. These findings are confirmed by papers of Permentier, et al. (2007) and Andersen (2008), who both researched the behavioural responses to neighbourhood reputations and found that the reputation does indeed affect moving behaviour. Beside reputation and deprivation, moving behaviour seems also be affected by the level of income and ethnic mix within neighbourhoods. Fjellborg (2020) found that the likelihood of leaving poor neighbourhoods increases for the foreign background population, although, only if their income is high enough and they own their housing unit.

2.2 Neighbourhood cohesion

Social cohesion is a controversial phenomenon, there is no widely agreed definition within academic research. Papers by Ritzen (2001) and Chan, et al. (2006), follow the definition of the Council of Europe and OECD, who define neighbourhood cohesion as: "the capacity of a neighbourhood to ensure the well-being of all its inhabitants, minimising disparities and avoiding marginalisation." It is a society where everyone can take advantage of opportunities to improve the environment and each other's well-being. The papers embrace three main components: trust, social mobility, and inclusion (Ritzen, 2001; Chan, et al. 2006). The main components can be split up into characteristics which are included within neighbourhood cohesion. These components are: having contacts neighbours and other inhabitants of the neighbourhood, the way of treating neighbours, knowing each other, satisfied with the demographic mixture, feeling involved and feeling safe (Manca, 2014).

Research by Cramm & Nieboer (2015) shows that the effect of cohesion on well-being is larger when people become older. Beside age, it is found that social cohesion and education are closely linked to each other. An increase in education mostly leads to an increase in cohesion, since education contributes to maintain social and prepares people for preserving society for the upcoming generation (Khan, 2016).

There are multiple positive effects of cohesion. People are able to participate in community life and their attitude towards others gets nicer. This causes the society to gain more social relationships and release stress, both proven to affect the mental health (Fonseca, et al., 2018). On the other side, a lack on social cohesion may lead to risky behaviour, crime, or even suicides. Some measures to secure the neighbourhood cohesion could be: introducing policies to increase the housing mix in problematic areas, improving infrastructure and organising local events (Fernandez Maldonado, et al., 2018).

Based on the literature review in chapter 1.2 and the theory in chapter 2, the following hypothesis are formulated:

H_0 = Neighbourhood cohesion has no effect on the desire to leave a neighbourhood

H_1 = Increased neighbourhood cohesion has a significant negative effect on the desire to leave a neighbourhood

2.3 Conceptual model

The main findings and concepts in the literature are visualised in the conceptual model in *figure 2*. As can be seen, different reasons throughout the literature are included. A distinction has been made between 4 groups. The first group is neighbourhood cohesion, neighbourhood cohesion is part of the neighbourhood characteristics. Since the effect of cohesion is tested on

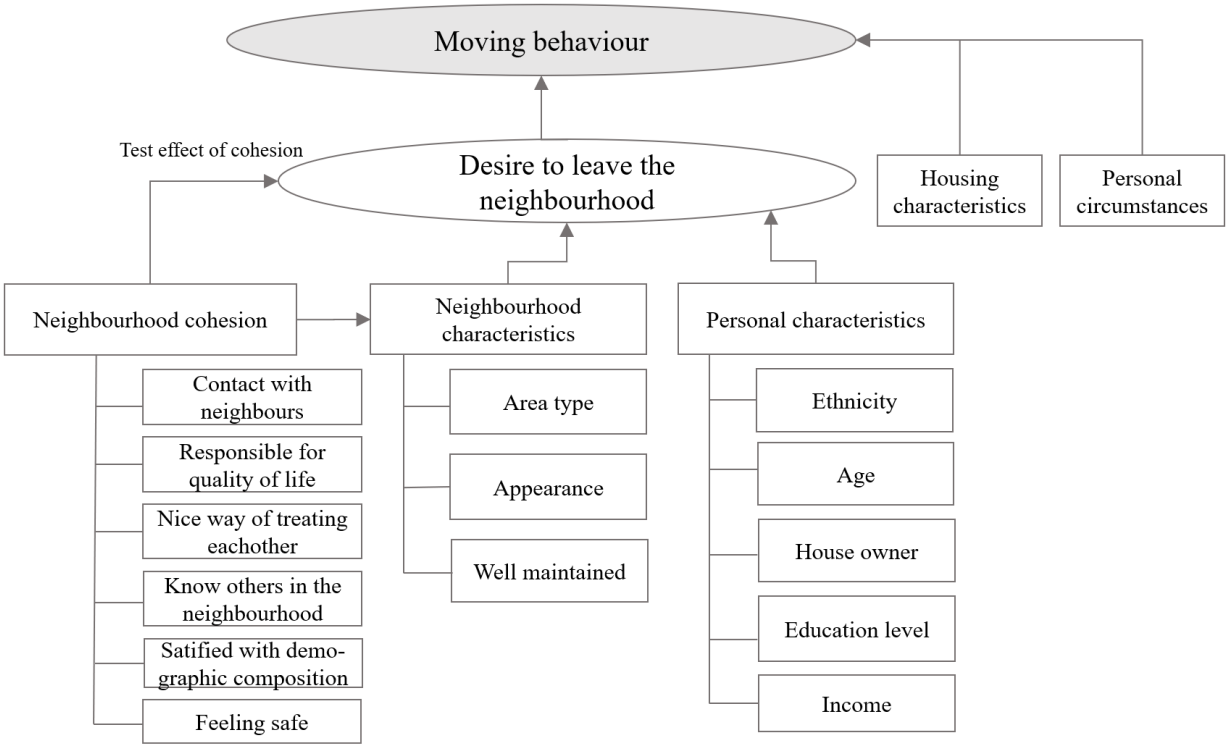

Figure 2 Concepts schematically displayed.

the desire to leave the neighbourhood, it is distinguished from other neighbourhood characteristics. As for these neighbourhood characteristics, area type, appearance and level of maintenance seem to be the most relevant characteristics which affect moving behaviour. As for the personal characteristics ethnicity, age, ownership, education, and income are identified as most important factors which affect moving behaviour. Lastly, housing characteristics and personal circumstances (e.g. change of job, getting a divorce or moving in with partner), are not included in this further research. Both these factors affect the moving behaviour, but not the desire to leave the neighbourhood.

3. Data & methodology

3.1 Data

The dataset 'WoonOnderzoek 2018' (WoON 2018) is used for the emperical analysis in this thesis. WoON is a household sample survey with 67,523 respondents, which represents all Dutch households. The survey is conducted by the Dutch Central Bureau of Statistics and consists out of 922 questions related to housing, satisfaction and living environment. A new survey is carried out every three years. WoON 2018 is the most recent dataset to date. The aim of the WoON survey is to create insight in the composition of the Dutch residential market. The survey is, therefore, an important input for policymakers in the Netherlands.

3.2 Variables and operationalization

Desire to leave the neighbourhood

The desire to leave the neighbourhood is used as the dependent variable. The desire to leave the neighbourhood is measured on a scale from (1 – 5), where (1) stands for 'desires to leave the neighbourhood', (2) stands for 'partly desires to leave the neighbourhood', (3) has no opinion, (4) stands for 'prefers to stay in the neighbourhood' and (5) stands for 'does definitely not want to leave the neighbourhood'. Next, the responses are changed to a binary scale where (1) and (2) are combined to 'wants to leave the neighbourhood', the natural cases (3) are dropped, as no conclusions can be drawn from this answer. Finally, the cases (4) and (5) are combined to 'wants to stay in the neighbourhood'. After dropping the natural cases the number of observations is reduced to 43,247.

Cohesion

Neighbourhood cohesion is used as the independent variable. The WoON employs an indicator for cohesion, which is not in line with the analysed theory, because the indicator of WoON does not include all characteristics of cohesion deemed relevant in chapter 2.2. The cohesion indicator of WoON is based on the following four questions within the WoON survey: "I feel good"; "I feel at home"; "I live in a pleasant neighbourhood with a lot of togetherness" and "people in this neighbourhood hardly know each other". The operationalization of the cohesion indicator within WoON is requested by RIGO, RIGO is a Dutch independent research and consultancy bureau in the field of housing and living environment (RIGO Research en Advies, 2010). Thus, the characteristics: contact with neighbours, satisfied with demographic

mixture and feeling safe are not included in the indicator which WoON uses. Therefore, the variable cohesion is composed in another way in this thesis. Following the literature on neighbourhood cohesion, the following eight questions of the WoON are included to construct a variable for neighbourhood cohesion:

- I have a lot of contact with my immediate neighbours. (1 – 5)
- I have a lot of contact with other local residents within the neighbourhood. (1 – 5)
- I feel co-responsible for the quality of life in the neighbourhood. (1 – 5)
- In this neighbourhood, people treat each other in a pleasant way. (1 – 5)
- I live in a pleasant neighbourhood where people help each other. (1 – 5)
- People hardly know each other in this neighbourhood. (1 – 5)
- I am satisfied with the demographic mixture in my neighbourhood. (1 - 5)
- I am afraid of being harassed or robbed in my neighbourhood. (1 – 5)

All negatively asked questions are flipped backwards to be able to merge the survey-questions to an indicator for cohesion. An example of a negative item is "I am afraid of being harassed or robbed in my neighbourhood". If a participant answers 5, the participants is afraid of being harassed or robbed in the neighbourhood which indicates lower cohesion. On the contrary, when participants answer 5 on positive items, such as "I have a lot of contact with my immediate neighbours" this indicates high cohesion. For this reason, the answers on negative items are flipped, for example if a participant answered 5 (reflecting low cohesion) this is transformed into 1. By doing so, all answers 1 indicate low cohesion. The new variable 'neighbourhood cohesion' scales from 1 (bad) to 5 (good) and will be the mean over the above variables, so each question has the same influence. Cohesion is measured on a continues scale, since the mean over eight categorical variables is measures, in this way there will be no data lost. The scale of neighbourhood cohesion is changed to a continuous (0 – 1) scale.

Personal characteristics

Personal characteristics are independent variables used as the first group of control variables. Following the literature on cohesion and desiring to move from the neighbourhood, the variables age, ownership, education level, income and ethnicity are included as personal characteristics. Dummy variables through one hot encoding were created for age, education level, income and ethnicity. Age is devided in 7 groups, which are devided on a binary scale. Education is devided into 4 groups; low, medium and high education, the 4th group is

'unknown'. Income is devided into 5 groups and ethnicity is devided into 3 groups, Dutch, western immigrant and non-western immigrant.

Neighbourhood characteristics

Neighbourhood characteristics are independent variables used as the second group of control variables. Following the literature on desiring to leave the neighbourhood, the variables type of area, level of attractiveness and level of maintenance were included. Dummy variables have been made for area type through one hot encoding. The appearance and maintenance are both measures on a (1 – 5) scale. Both variables are changed to a binary scale where (1) and (2) are combined to good appearance or good maintenance, (3) is dropped, and (4) and (5) are combined to bad neighbourhood appearance of maintenance.

3.3 Descriptive Statistics

Based on chapter 3.2, the summary statistics of all variables included in this research are listed in *table 1* on the next page.

Table 1. Summary statistics for desire to move, neighbourhood cohesion, personal- and neighbourhood characteristics.

	Mean	Max	Min
Neighbourhood cohesion (continuous)			
Having contact with neighbours	2.65	5	1
Contact with other residents in neighbourhood	2.96	5	1
Responsible for quality of life	2.45	5	1
Residents treat neighbours in a nice way	2.18	5	1
Residents help other neighbours	2.69	5	1
People barely know their neighbours here	3.51	5	1
Satisfied with the demographic mixture	2.27	5	1
afraid of being harassed or robbed	4.16	5	1

	Observations	Frequency	Percentage
Desire to leave the neighbourhood	43 247		
Does not want to leave (0)		37 460	86.6%
Wants to leave (1)		5 787	13.4%
Age			
17 - 24		4 822	11.1%
25 - 34		5 131	11.9%
35 - 44		5 106	11.8%
45 - 54		7 016	16.2%
55 - 64		7 573	17.5%
65 - 74		7 553	17.5%
75 + (reference)		6 046	17.5%
Income			
Below average		12 897	29.8%
1.5 × Average		8 668	20.0%

2 × Average	7 319	16.9%
3 × Average	8, 97	20.3%
> 3 Average (reference)	5 566	12.9%
Ethnicity		
Dutch (reference)	36 658	84.8%
Non-western immigrant	28 48	6.6%
Western immigrant	3 741	8.7%
Ownership		
Owner	25 687	28.5%
Renter (reference)	12 317	59.4%
Unknown	5 243	12.1%
Education		
Primary school	13 801	31.9%
Secondary school	14 646	33.9%
Higher education	13 493	31.2%
Unknown (reference)	1 307	3.0%
Type of area		
City center	2 701	6.2%
City	13 603	31.5%
Green-urban	5 096	11.8%
Village	16 399	37.9%
Rural area (reference)	5 448	12.6%
Appearance		
Attractive neighbourhood	39 137	90.5%
Non-attractive neighbourhood (reference)	4 110	9.5%
Maintenance		
Well maintained	39 733	91.9%
Not well maintained (reference)	3 514	8.1%

3.4 Method

In the emperical analysis, we first conducted the Crombach's alpha test, to check if the variables for cohesion can be merged. The test measures the internal consistency of items, to find how closely related the variables regarding cohesion are as a group and how reliable the scale is (Cronbach, 1951). Measuring the reliability through Cronbach's alpha is a common way when merging variables out of likert-scale survery questions. Conducting this test is exactly done in the way Kuipers, et al. (2012) create variables for social cohesion and neighbourhood disorder.

$$a = \frac{n}{n-1}\left(1 - \frac{\sum Vi}{Vtest}\right) \quad (1)$$

Where a is the coefficient to be calculated, n is the number of questions, Vi is the variance of scores for each question and $Vtest$ is the total variance of overall score on the entire test. As can

be seen in *table 2*, the coefficient of a is .811 which indicates a good reliability of the scale composed of the variables for neighbourhood cohesion. The value of a can be between 0 and 1, where 0.5> a is unacceptable and 0.7> a is strong. Hence, we can combine the 5-likert-scale variables to one continuous scale variable between 0 and 1. We do this by calculating the mean. This way, each question has the same influence on the cohesion. The new variable Cohesion scales from 0 (bad) to 1 (good), the mean is 0.53 as can be seen in the descriptive statistics. When one of the variables which is merged into cohesion is deleted from the equation, the Cronbach's Alpha declines.

Table 2. Internal consistency of the eight cohesion variables combined.

CRONBACH'S $\boldsymbol{a}$	N OF ITEMS
.811	8

Since the dependent variable is transformed to a binary scale; wants to leave the neighbourhood (1) and does not want to leave the neighbourhood (0)', binary logistic regression models are used to identify the relationship between neighbourhood cohesion and the desire to leave the neighbourhood. To conduct logistic regression models, we first test the assumptions for logistic regression. There are four assumptions which must be met:

- Dependent variable should measure on a dichotomous scale
- Large sample size
- Independence of observations
- Little or no multicollinearity among variables

The testing assumptions are met. The dependent variable is binary, the observations are independent, there is a large sample size and the mutual correlation between variables do not exceed 0.7.

After testing the assumptions for logistic regression, we run multiple chi-square tests between the dependent- and every independent variable. We do this to find whether there is a significant relation between the observed and expected values, so we may use them in the binary logistic regression models. The formula for the chi-square test is formulated below, where χ^2 is the chi squared, O_i stands for the observed values and E_i stands for the expected value.

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i} \quad (2)$$

When the relation between the dependent- and independent variables were checked, we found that every chi-square test is significant with a p-value of <.001. Thereafter, we were able to run three binary regression models. Where model (3a) tests the estimated effect of neighbourhood cohesion and personal characteristics on the desire to move. Model (3b) tests the estimated effect of neighbourhood cohesion and neighbourhood characteristics on the desire to move. Followed by model (3c), which tests the estimated effect of neighbourhood cohesion on the desire to leave the neighbourhood with all control groups included. The following formula is used and all models will be a variation of equation 3:

$$\ln\left(\frac{P}{1-P}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_m X_m \qquad (3)$$

Where $\ln\left(\frac{P}{1-P}\right)$ is the logit of the outcome, β_0 is the y-intercept (constant), β_1 is the slope coefficient for the independent variable neighbourhood cohesion (X_1), $\beta_{2\ldots m}$ is the slope coefficient for each of the control variables. An alpha of 0.05 is used as cut-off score for significance. As an in-depth analysis, 8 additional logistic regression models were conducted, where the explanatory variable neighbourhood cohesion is alternated with the variables which were used to create the variable neighbourhood cohesion. This check is performed to see how strong the model is and if every variable for neighbourhood cohesion is significant when using them in the regression model independently.

4. Results

4.1 Neighbourhood cohesion & personal characteristics

Table 3 presents the results of the first binary regression model. Personal characteristics are added as control variables in estimating the relation between neighbourhood cohesion and the desire to move from the neighbourhood. The first model includes 38,004 observations of people who desire or not desire to leave the neighbourhood, unknown cases of homeownership are not included. The model shows a significant relationship between neighbourhood cohesion and the desire to leave at a level of $p < 0.01$. This indicates there is a relation between neighbourhood cohesion and the desire to leave the neighbourhood when adding only personal characteristics. Every control variable is significant, since there is at least one category of every control variable which is significant. Although, the relation between the desire to leave the neighbourhood and

education level seems to be less correlative as only higher education increases the desire to move compared to the reference category, which is an unknown education level.

The Nagelkerke R^2 is preferred over the Cox & Snell's R^2 since Nagelkerke is adjusted to a range of 0-1, where Cox & Snell's R^2 is not able to reach 1. Therefore, we will only interpret the R^2 with the Nagelkerke R^2 (Allison, 2014). The model has a R^2 of 0.223, which means that this model declares 22.3% of the desire to leave the neighbourhood by adding personal characteristics as control group.

The finding that there is a significant relation between desire to leave the neighbourhood and neighbourhood cohesion is in line with literature of Ham & Feijten, 2008 and Clark & Coulter, 2015. The writers claim that deprived neighbourhoods affect the residential satisfaction and residential satisfaction affects the desire to move (Nowok, et al., 2018). Further, older people are less eager to move, which is in line with literature of Hunter (2007), who claimed that younger people are more likely to leave neighbourhoods. Moreover, Kemp (2011) claimed that house-owners are less likely to move than people who live in rental houses. This also seems in line with the finding on the first regression model. Finally, the predictor for education has a weak correlation with the desire to leave the neighbourhood, which is not in line with research of Schachter (2001), who found a significant correlation on education and the desire to leave a neighbourhood.

Table 3. Binary regression model of neighbourhood cohesion and personal characteristics on the desire to leave the neighbourhood.

Variable	Coefficient	Std. Error	Sig.	Exp(B)
Dependent variable: desire to leave the neighbourhood (0 = does not want to move, 1 = wants to move)				
Independent variables				
Neighbourhood Cohesion	-1.255***	.028	.000	.285
Personal characteristics				
Age 17 - 24	1.158***	.105	.000	3.183
Age 25 - 34	1.532***	.079	.000	4.629
Age 35 - 44	1.572***	.079	.000	4.815
Age 45 - 54	1.230***	.078	.000	3.420
Age 55 - 64	.870***	.078	.000	2.387
Age 65 - 74	.518***	.080	.000	1.678
Non-western immigrant	.437***	.061	.000	1.549
Western immigrant	.177***	.059	.003	1.194
Homeowner	-.525***	.044	.000	.592
Low education level	.007	.101	.943	1.007
Medium education level	-.104	.103	.311	.901
Higher education	.346***	.080	.000	1.413
Below average income	.274***	.077	.000	1.316
1.5 × average income	.182**	.078	.020	1.199
2 × average income	.046	.078	.550	1.048

3 × average income	1.158***	.105	.000	3.183
Constant	1.208***	.163	.000	3.347
Observations	38 004			
Cox & Snell R^2	0.112			
Nagelkerke R^2	0.223			

*, **, ***indicate significance at <0.10, <0.05 and <0.01 levels respectively.

4.2 Neighbourhood cohesion & neighbourhood characteristics

The results presented in *table 4*, show the second binary regression model where the control group 'neighbourhood characteristics' is used to predict the desire to leave the neighbourhood. The second model includes 43,247 observations of people who desire or not desire to leave the neighbourhood. The model shows a significant relationship between neighbourhood cohesion and the desire to move from the neighbourhood at a level of $p < 0.01$. This indicates there is a relation between neighbourhood cohesion and the desire to move from the neighbourhood when adding neighbourhood characteristics. Every control variable is significant, since there is at least one category of every control variable which is significant. Although, the relation between the desire to move from the neighbourhood and type of living area of the respondent seems to be less correlative. Only the living area city centre decreases the desire to move from the neighbourhood significantly.

Table 4. binary regression model of neighbourhood cohesion and neighbourhood characteristics on the desire to leave the neighbourhood.

Variable	Coefficient	Std. Error	Sig.	Exp(B)
Dependent variable: desire to leave the neighbourhood (0 = does not want to move, 1 = wants to move)				
Independent variables				
Neighbourhood Cohesion	-1.040***	.026	.000	.354
Neighbourhood characteristics				
City centre	-.326***	.080	.000	.722
City	.010	.055	.861	1.010
Green-urban	-.112*	.066	.091	.894
Centre-village	-.033	.054	.544	.968
Neighbourhood appearance	-1.411***	.044	.000	.244
Neighbourhood is well maintained	-.696***	.049	.000	.499
Constant	3.506***	.102	.000	33,309
Observations	43 247			
Cox & Snell R^2	0.131			
Nagelkerke R^2	0.261			

*, **, ***indicate significance at 0.10, 0.05 and 0.01 levels respectively

The model has a Nagelkerke R^2 of 0.261, which means that this model is able to predict 26.1% of the variance of the desire to move from the neighbourhood by adding personal

characteristics as control group. When comparing *table 3* with *table 4*, the R^2 has slightly increased. Therefore, control variables found in the literature for neighbourhood characteristics, seem to declare more than the personal characteristics which were found in literature.

When comparing the results of the 2nd regression model with academic literature, the findings for neighbourhood cohesion remain the same as for the 1st regression model. Neighbourhood appearance and neighbourhood maintenance both have a significant effect on the desire to move from the neighbourhood. This is in line with research by Land & Doff (2010); Permentier, et al. (2007) and Andersen (2008). Further, the predictor for type of living area has a weak correlation with the desire to move from the neighbourhood, while Hunter (2007) claimed that type of living area does affect the desire to move. Although, the findings in regard to different area types differ per age group in his research. Young people are more eager to move to the city, old people are more eager to move to rural areas. In our regression models, age groups and type of living area are not combined, therefore the results might not be in line with the paper of Hunter (2007).

4.3 Neighbourhood cohesion & all control groups

In *table 5*, the third and final logistic regression model is presented. Within this model, all groups of control variables are added to the equation to estimate the effects of the explanatory- and predictive variables on the desire to move from the neighbourhood. The final model includes 38,004 observations of people who desire or not desire to move from the neighbourhood, unknown cases for homeownership are not included. The model shows a significant relationship between neighbourhood cohesion and the desire to move from the neighbourhood at a level of $p < 0.01$. This indicates there is a relation between neighbourhood cohesion and desire to leave the neighbourhood when adding personal- and neighbourhood characteristics as predictors for the model. Neighbourhood cohesion decreases the desire to move from the neighbourhood significantly. All independent variables are significant, except for education level.

The Nagelkerke R^2 of the model is 0.289, which means that this model explains 28.9% of the variance of the desire to move from the neighbourhood by adding personal- and neighbourhood characteristics as predictors for the desire to move from the neighbourhood.

Table 5. Multivariate regression model of neighbourhood cohesion, personal- and neighbourhood characteristics on the desire to leave the neighbourhood.

Variable	Coefficient	Std. Error	Sig.	Exp(B)
Dependent variable: desire to leave the neighbourhood (0 = does not want to move, 1 = wants to move)				
Independent variables				
Neighbourhood Cohesion	-.949***	.030	.000	.387
Personal characteristics				
Age 17 - 24	.912***	.112	.000	2.489
Age 25 - 34	1.304***	.082	.000	3.684
Age 35 - 44	1.307***	.083	.000	3.694
Age 45 - 54	1.035***	.080	.000	2.814
Age 55 - 64	.736***	.081	.000	2.088
Age 65 - 74	.461***	.082	.000	1.586
Non-western immigrant	.373***	.065	.000	1.452
Western immigrant	.166***	.062	.007	1.181
Homeowner	-.438***	.047	.000	.645
Low education level	-.055	.104	.599	.947
Medium education level	.060	.105	.566	1.062
Higher education	-.081	.106	.448	.922
Below average income	.250***	.083	.003	1.283
1.5 × average income	.166**	.080	.038	1.181
2 × average income	.106	.081	.189	1.112
3 × average income	.001	.080	.986	1.001
Neighbourhood characteristics				
City centre	-.394***	.096	.000	.674
City	.003	.069	.963	1.003
Green-urban	-.068	.082	.405	.934
Centre-village	-.010	.068	.881	.990
Neighbourhood appearance	-1.387***	.050	.000	.250
Neighbourhood is well maintained	-.613***	.055	.000	.542
Constant	2.106***	.185	.000	8.213
Observations	38 004			
Cox & Snell R^2	0.146			
Nagelkerke R^2	0.289			

*, **, ***indicate significance at <0.10, <0.05 and <0.01 levels respectively.

The model shows that when there is more cohesion, people are less eager to move ($p < 0.001$). This finding is in line with Ham & Feijten, (2008) and Clark & Coulter, (2015), who found a relationship between neighbourhood cohesion and residential satisfaction, which is related to residential relocation desires (Nowok, et al., 2018). When analysing the estimated effects of the personal characteristics, it seems that young people have a larger desire to move ($p < 0.001$) as being younger increases the variable desire to move. House owners have a smaller desire to move than renters ($p < 0.001$). These findings are in line with previous research (Schachter, 2001; Permentier, et al., 2009; Groot, et al., 2011). The independent

variable education is not significant in the last model, which is not in line with research by Schachter (2001), who showed a difference in moving behaviour on behalf of education level. Further, the correlation between income level and the desire to move from the neighbourhood is weak, just as the type of respondent's living area, which is already covered in chapter 4.1 and 4.2. When analysing and comparing the results in the final model, the estimated effect of neighbourhood cohesion is predicted to be one of the biggest considerations to move from the neighbourhood, together with age and neighbourhood appearance.

To check the results of the final logistic regression model a confusion table is added to see for how many cases in the dataset the model was right. With this we mean that people with the desire to move are predicted by the model as such, and that people who do not desire to move are also predicted by the model not to desire to move. The confusion table is found in *table 7* in appendix A. The tabel shows that with a cut-value of 0.5, 90.6% of the cases are correctly identified by the logistic regression model. However, the people who do not want to move have been correctly identified as such 98.5%, whereas the smaller part of the sample that does want to move is only correctly identified 27.7% of the time. Adjusting the cut value did not lead to better results.

4.4 In-depth exploration

To explore cohesion in more depth, 8 logistic regression models are conducted, with the explanatory variables being the different proxies which were used to compose one variable of cohesion. The followinging model numbers and explanatory variables have been used in *table 6* on the next page:

Model number	Explanatory variable
Model 1	Having contact with neighbours
Model 2	Contact with other residents in neighbourhood
Model 3	Responsible for quality of life
Model 4	Residents treat neighbours in a nice way
Model 5	Residents help other neighbours
Model 6	People barely know their neighbours here (flipped)
Model 7	Satisfied with the demographic mixture
Model 8	afraid of being harassed or robbed (flipped)

Table 6. logistic regression models for different proxies of neighbourhood cohesion

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Dependent variable: desire to leave the neighbourhood (0 = does not want to move, 1 = wants to move)								
Cohesion related variables								
Good contact with neighbours	-.335***							
Good contact with neighbourhood		-.322***						
Responsible for QOL			-.284***					
Treating neighbours nice				-.671***				
Help others in neighbourhood					-.483***			
Know other residents						-.377***		
Satisfied with mixture							-.522***	
Feeling safe								-.343***
Personal characteristics								
Age 17 - 24	.953***	.956***	.986***	1.161***	1.107***	1.075***	1.217***	1.240***
Age 25 - 34	1.294***	1.315***	1.348***	1.459***	1.408***	1.411***	1.443***	1.530***
Age 35 - 44	1.247***	1.278***	1.299***	1.340***	1.333***	1.339***	1.288***	1.391***
Age 45 - 54	.993***	1.029***	1.061***	1.046***	1.044***	1.097***	1.027***	1.119***
Age 55 - 64	.718***	.751***	.802***	.741***	.753***	.801***	.759***	.838***
Age 65 - 74	.440***	.453***	.478***	.431***	.451***	.466***	.415***	.478***
Non-western immigrant	.306***	.308***	.334***	.317***	.329***	.288***	.332***	.243***
Western immigrant	.150**	.148**	.165***	.140**	.168***	.150**	.150**	.133**
Homeowner	-.536***	-.549***	-.576***	-.534***	-.534***	-.524***	-.541***	-.585***
Low education level	-.078	-.094	-.094	-.053	-.089	-.063	-.103	-.092
Medium education level	.046	.023	.069	.082	.018	.057	.020	.061
Higher education	-.077	-.104	.004	.007	-.092	-.056	-.073	.019
Below average income	.269***	.308***	.287***	.227***	.292***	.291***	.269***	.258***
1.5 × average income	.184**	.211***	.199**	.152*	.202*	.195**	.180**	.186**
2 × average income	.108	.141**	.116	.090	.123	.123	.107	.117
3 × average income	-.010	.018	.009	-.016	.015	.007	-.013	.000
Neighbourhood characteristics								
City centre	-.200**	-.229**	-.148	-.237**	-.321***	-.366***	-.120	-.179*
City	.158**	.130*	.185***	.110	.063	.015	.148**	.135**
Green-urban	.067	.042	.074	.015	-.030	-.075	.066	.040
Centre-village	.058	.052	.066	.048	-.009	-.001	.077	.065
Neighbourhood appearance	-1.621**	-1.614**	-1.638**	-1.484**	-1.505**	-1.604**	-1.494***	-1.639***
Neighbourhood is well maintained	-.784***	-.780***	-.761***	-.575***	-.660***	-.714***	-.608***	-.674***
Constant	.291**	.130	.102	1.367***	.561***	.392**	.815***	.409**
Observations	38 004	38 004	38 004	38 004	38 004	38 004	38 004	38 004
Cox & Snell R^2	0.131	0.130	0.127	0.140	0.137	0.132	0.136	0.129
Nagelkerke R^2	0.261	0.258	0.252	0.278	0.273	0.262	0.270	0.255

*, **, ***indicate significance at <0.10, <0.05 and <0.01 levels respectively.

As can be seen in *table 6*, every proxy related to cohesion has a positive significant effect on the desire to move from the neighbourhood. As can be seen, treeting neighbours in a nice way and satisfaction with the demographic mixture are estimated to have the biggest effect on the desire to move from the neighbourhood.

5. Conclusion and implications

This thesis examined the relation between neighbourhood cohesion and the desire to move from the neighbourhood. To analyse this relation, other reasons to leave the neighbourhood were identified, a variable for neighbourhood cohesion was created, the relation between all independent and dependent variables are found to be significant through chi-square tests and finally three logistic regression models are conducted. Moreover, 8 logistic regression models as a more in-depth exploration of the effect of neighbourhood cohesion on the desire to leave the neighbourhood.

The main results of this thesis are as follows: it is found there is a correlation between neighbourhood cohesion and the desire to leave the neighbourhood. If neighbourhood cohesion increases, the desire to leave the neighbourhood will decrease. Secondly, the results of this study show that the effect of neighbourhood cohesion is one of the most relevant for the desire to leave a neighbourhood, besides the neighbourhood appearance and age of the respondents. Therefore, the research question "To what extent does neighbourhood cohesion affect the desire to leave a neighbourhood?" is answered. We can successfully reject the null-hypothesis "neighbourhood cohesion does not affect the desire to move from a neighbourhood".

Through logistic regression models, 28.9% of the desire to move is explained by adding cohesion, personal- and neighbourhood characteristics as predicting variables. Thus, yet other factors influence the desire to move from the neighbourhood. However, when using our regression output for the cases within the dataset, the model still correctly identifies 90.6% of the cases as desiring to move or not desiring to move.

Although a significant correlation between neighbourhood cohesion and the desire to move from a neighbourhood was found, the models explain just 28.9% of the variance of the desire to move from the neighbourhood. There are a lot of reasons for desiring to leave, some reasons are objective or local, such as living near a factory. It is impossible to cover all reasons to leave a neighbourhood. Also, the data availability does not cover all the reasons for people wanting to move from the neighbourhood. The accessibility of neighbourhoods or factors as the smell in a neighbourhood are not covered and is hard to apply in semi-anonymous datasets.

Further, the social relevance for this research was to introduce policies for municipalities and governments to fix social cohesion on various places. Although, municipalities in the Netherlands are already doing projects in deprived areas. Currently the WoON data does not cover measures which are already taken to improve social cohesion. Therefore, current policies or the benefits of these policies could not be taken into account. However, the in-depth analysis

of the effect of neighbourhood cohesion on the desire to move from the neighbourhood indicated that treating neighbours in a nice way and satisfaction with the demographic mixture have the largest influence on the desire to move. Under the assumption that the desire to move reflects unhappiness with the neighbourhood, government interventions to improve happiness in the neighbourhood could focus on improving the demographic mixture. For example, when allocating social renters to government owned rental housing, demographic mixture could be taken into account. Moreover, policies such as more playgrounds, public fitness areas, community centres and parks could improve contact with neighbours and the neighbourhood, lowering the desire to move from the neighbourhood. A suggestion for follow-up research would be to analyse how measures, or policies from governmental bodies, improve neighbourhood cohesion. The effect of governmental bodies and policies on desire to leave a neighbourhood or moving behaviour could also be analysed.

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Appendix A: Figures and graphs

Classification Table[a]

Observed			Predicted dep13.5 .00	1.00	Percentage Correct
Step 1	dep13.5	.00	33261	496	98.5
		1.00	3070	1177	27.7
	Overall Percentage				90.6

a. The cut value is .500

Table 7. Confusion table 3rd logistic regression model

Appendix B: SPSS Syntax

```
* Encoding: UTF-8.
* ================================================================================
   1) DEPENDENT VARIABLE
   using 1 question 13.5 as dependent variable 1 (wants to move) - 5 (does not want to move)

* Making dependent binary
   - First creating alias
   - Remove values 3
   - value 1 and 2 => 0 (disagree)
   - value 4 and 5 => 1 (agree)

COMPUTE dep13.5=brtvhmog.
SELECT IF NOT (dep13.5 = 3).
RECODE dep13.5 (1=1) (2=1) (4=0) (5=0).
EXECUTE.

*
================================================================================
=========
   2) INDEPENDENT VARIABLES (COHESION)
   using all questions related to neighborhood cohesion (question 13.9 to 13.16) as independent
variables
   and combining them to a continuous scale

* creating aliasses
```

```
COMPUTE coh13.9=conbuur1.
COMPUTE coh13.10=conbuur2.
COMPUTE coh13.11=leefbarh.
COMPUTE coh13.12=brtpret.
COMPUTE coh13.13=gezelbuurt.
COMPUTE coh13.14=mensken.
COMPUTE coh13.15=tbevsams.
COMPUTE coh13.16=brtveilig.
EXECUTE.

* Flipping negative asked questions (all except 13.14, 13.16), such that all cohesion related questions scale from bad (1) to good (5)

RECODE coh13.9 coh13.10 coh13.11 coh13.12 coh13.13 coh13.15 (5=1) (4=2) (3=3) (2=4) (1=5).
EXECUTE.

* Reliability analysis on the cohesion related variables. To test if we can combine these 8 questions to one scale
   We can accept the scale if Cronbach's alpha is greater than 0.7 and all items in the inter-item correlation matrix are positive
   Cronbach's alpha turns out to be 0.810, but 0.824 if we remove question 13.16

RELIABILITY
 /VARIABLES=coh13.9 coh13.10 coh13.11 coh13.12 coh13.13 coh13.14 coh13.15 coh13.16
 /SCALE('ALL VARIABLES') ALL
 /MODEL=ALPHA
 /STATISTICS=CORR
 /SUMMARY=TOTAL.

LOGISTIC REGRESSION VARIABLES dep13.5
 /METHOD=ENTER coh*coh_LN
 /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

* Cronbachs alpha becomes higher if we remove 13.16 from the scale, so lets create the scale without 13.16

COMPUTE coh=MEAN(coh13.9, coh13.10, coh13.11, coh13.12, coh13.13, coh13.14, coh13.15).
EXECUTE.

variable labels
coh  'Cohesion'.

* Normalize cohesion for better interpretability of the finla model
* COMPUTE coh=(coh-1)/(5-1).
* EXECUTE.
```

```
* TESTING ASSUMPTIONS LOGIT REGRESSION WITH BOX_TIDWELL TEST
   - Test dependent against coh*Ln(coh)
   - If this is not significant then the assumption is met

COMPUTE coh_LN=Ln(coh).
EXECUTE.


*
================================================================================
=======
   3) CONTROL VARIABLES

* ============================================
   3.1) Personal Characteristics
   - Age (leeftijd or lfthh7),
   - Immigrant
   - bought/rental home (question 1.1) (huko)
   - education (vltoplop3)
   - income,

* Age
   Create dummy variables for Age (lfthh7), (One hot encoding)
   Reference variable: lfthh7=7 (75 and older)
   Chi-square test P-value = 0.000 (Significant)

compute conAge_1 = (lfthh7 = 1).
compute conAge_2 = (lfthh7 = 2).
compute conAge_3 = (lfthh7 = 3).
compute conAge_4 = (lfthh7 = 4).
compute conAge_5 = (lfthh7 = 5).
compute conAge_6 = (lfthh7 = 6).

variable labels
conAge_1  'Age 17-24'
conAge_2  'Age 25-34'
conAge_3  'Age 35-44'
conAge_4  'Age 45-54'
conAge_5  'Age 55-64'
conAge_6  'Age 65-74'.

LOGISTIC REGRESSION VARIABLES dep13.5
  /METHOD=ENTER conAge_1 conAge_2 conAge_3 conAge_4 conAge_5 conAge_6
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

* Immigrant status
```

```
   Create dummy variables
   Reference variable: etniop3=1 (Dutch)
   0 (Dutch) - 1 (non-western) - 2 (western)
   Chi-square test P-value = 0.000 (Significant)

compute conImmigrant_1 = (etniop3 = 2).
compute conImmigrant_2 = (etniop3 = 3).

variable labels
conImmigrant_1  'Non-western immigrant'
conImmigrant_2  'Western immigrant'.

LOGISTIC REGRESSION VARIABLES dep13.5
  /METHOD=ENTER conImmigrant_1 conImmigrant_2
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

* Home owner
   Rescale owner to 0 (rental) - 1 (bought)
   Chi-square test P-value = 0.000 (Significant)

RECODE huko (1=1) (2=0).
EXECUTE.

COMPUTE
   conOwner = huko.
EXECUTE.

variable labels
conOwner  'Home owner'.

LOGISTIC REGRESSION VARIABLES dep13.5
  /METHOD=ENTER conOwner
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

* Education
   Create dummy variables for each category
   Reference variable: vltoplop3=9 (don't know / unknown)
   Chi-square test P-value = 0.000 (Significant)

compute conEdu_1 = (vltoplop3 = 1).
compute conEdu_2 = (vltoplop3 = 2).
compute conEdu_3 = (vltoplop3 = 3).

variable labels
conEdu_1  'Low education level'
conEdu_2  'Medium education level'
conEdu_3  'High education level'.
```

```
LOGISTIC REGRESSION VARIABLES dep13.5
  /METHOD=ENTER conEdu_1 conEdu_2 conEdu_3
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

* Income
    Create dummy variables for each category
    Reference variable: inkmod5_r = 5 (More than 3x modal)
    Chi-square test P-value = < 0.001b (Significant)

compute conIncome_1 = (inkmod5_r = 1).
compute conIncome_2 = (inkmod5_r = 2).
compute conIncome_3 = (inkmod5_r = 3).
compute conIncome_4 = (inkmod5_r = 4).

variable labels
conIncome_1 'Below modal income'
conIncome_2 'Up to 1.5 times modal income'
conIncome_3 'Up to 2 times modal income'
conIncome_4 'Up to 3 times modal income'.

LOGISTIC REGRESSION VARIABLES dep13.5
  /METHOD=ENTER conIncome_1 conIncome_2 conIncome_3 conIncome_4
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).


* ============================================
    3.2) Neighborhood Characteristics
    - Rural/Urban
    - Aantrekkelijke bebouwing  (tbebouw)
    - Onderhouden (tonderhbrt)

* Rural/Urban (hwmbrt)
    Create dummy variables for each category
    Reference variable: hwmbrt = 5 (rural)
    Test correlation P-value =  0.000 (Significant)

compute conArea_1 = (hwmbrt = 1).
compute conArea_2 = (hwmbrt = 2).
compute conArea_3 = (hwmbrt = 3).
compute conArea_4 = (hwmbrt = 4).

variable labels
conArea_1 'City center'
conArea_2 'Outside center'
conArea_3 'Green-urban'
conArea_4 'Center-village'.
```

```
LOGISTIC REGRESSION VARIABLES dep13.5
  /METHOD=ENTER conArea_1 conArea_2 conArea_3 conArea_4
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

* Attractive neighborhood (tbebouw)
   Made binary 0 (no) 1 (yes)
   Wald chi-square P-value =  0.000 (Significant)

RECODE tbebouw tonderhbrt (8=0) (1=1) (2=2) (3=3) (4=4) (5=5) INTO conAttractive
conMaintained.
VARIABLE LABELS  conAttractive '13.2) De bebouwing in deze buurt is aantrekkelijk'
   /conMaintained '13.3) Woningen in de buurt zijn goed onderhouden'.
EXECUTE.

SELECT IF NOT (conAttractive = 3 OR conAttractive = 8 OR conMaintained=3 OR
conMaintained=8).
RECODE conAttractive conMaintained (1=1) (2=1) (4=0) (5=0).
EXECUTE.

variable labels
conAttractive  'Neighborhood is attractive'
conMaintained  'Neighborhood is well maintained'.

LOGISTIC REGRESSION VARIABLES dep13.5
  /METHOD=ENTER conAttractive
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

* Well maintained neighborhood (tonderhbrt)
   Made binary 0 (no) 1 (yes)
   Test correlation P-value =  0.000 (Significant)

LOGISTIC REGRESSION VARIABLES dep13.5
  /METHOD=ENTER conMaintained
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

*
================================================================================
========
   4) CREATE THE MODEL
   dependent: Desire to move - 1 (wants to leave) to 5 (does not want to leave))
   Independent: Neighborhood cohesion - 1 (bad) to 5 (good))

* 4.1) Model only Dependent against Independent

LOGISTIC REGRESSION VARIABLES dep13.5
  /METHOD=ENTER coh
```

```
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

* 4.2) Model with Personal characteristics as control variables

LOGISTIC REGRESSION VARIABLES dep13.5
  /METHOD=ENTER coh conAge_1, conAge_2, conAge_3, conAge_4, conAge_5, conAge_6
conImmigrant_1 conImmigrant_2 conOwner conEdu_1 conEdu_2 conEdu_3 conIncome_1
conIncome_2 conIncome_3 conIncome_4
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

* 4.3) Model with Neighborhood characteristics as control variables

LOGISTIC REGRESSION VARIABLES dep13.5
  /METHOD=ENTER coh conArea_1 conArea_2 conArea_3 conArea_4 conAttractive
conMaintained
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

* 4.4) Model with both Personal characteristics and Neighborhood characteristics as control
Variables

LOGISTIC REGRESSION VARIABLES dep13.5
  /METHOD=ENTER coh conAge_1, conAge_2, conAge_3, conAge_4, conAge_5, conAge_6
conImmigrant_1 conImmigrant_2 conOwner conEdu_1 conEdu_2 conEdu_3 conIncome_1
conIncome_2 conIncome_3 conIncome_4
  conArea_1 conArea_2 conArea_3 conArea_4 conAttractive conMaintained
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).


* Analyse Frequencies

DATASET ACTIVATE DataSet3.
FREQUENCIES VARIABLES=lfthh7 hwmbrt inkmod5_r vltoplop3 etniop3 dep13.5 coh conAge_1
conAge_2 conAge_3 conAge_4 conAge_5 conAge_6
    conImmigrant_1 conImmigrant_2 conOwner conEdu_1 conEdu_2 conEdu_3 conIncome_1
conIncome_2
    conIncome_3 conIncome_4 conArea_1 conArea_2 conArea_3 conArea_4 conAttractive
conMaintained
  /ORDER=ANALYSIS.

* Robustness check: run regression models for every individual part of cohesion.

  LOGISTIC REGRESSION VARIABLES dep13.5
  /METHOD=ENTER coh13.9 conAge_1, conAge_2, conAge_3, conAge_4, conAge_5, conAge_6
conImmigrant_1 conImmigrant_2 conOwner conEdu_1 conEdu_2 conEdu_3 conIncome_1
conIncome_2 conIncome_3 conIncome_4
  conArea_1 conArea_2 conArea_3 conArea_4 conAttractive conMaintained
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
```

```
 LOGISTIC REGRESSION VARIABLES dep13.5
  /METHOD=ENTER coh13.10 conAge_1, conAge_2, conAge_3, conAge_4, conAge_5, conAge_6
conImmigrant_1 conImmigrant_2 conOwner conEdu_1 conEdu_2 conEdu_3 conIncome_1
conIncome_2 conIncome_3 conIncome_4
  conArea_1 conArea_2 conArea_3 conArea_4 conAttractive conMaintained
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

 LOGISTIC REGRESSION VARIABLES dep13.5
  /METHOD=ENTER coh13.11 conAge_1, conAge_2, conAge_3, conAge_4, conAge_5, conAge_6
conImmigrant_1 conImmigrant_2 conOwner conEdu_1 conEdu_2 conEdu_3 conIncome_1
conIncome_2 conIncome_3 conIncome_4
  conArea_1 conArea_2 conArea_3 conArea_4 conAttractive conMaintained
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

 LOGISTIC REGRESSION VARIABLES dep13.5
  /METHOD=ENTER coh13.12 conAge_1, conAge_2, conAge_3, conAge_4, conAge_5, conAge_6
conImmigrant_1 conImmigrant_2 conOwner conEdu_1 conEdu_2 conEdu_3 conIncome_1
conIncome_2 conIncome_3 conIncome_4
  conArea_1 conArea_2 conArea_3 conArea_4 conAttractive conMaintained
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

 LOGISTIC REGRESSION VARIABLES dep13.5
  /METHOD=ENTER coh13.13 conAge_1, conAge_2, conAge_3, conAge_4, conAge_5, conAge_6
conImmigrant_1 conImmigrant_2 conOwner conEdu_1 conEdu_2 conEdu_3 conIncome_1
conIncome_2 conIncome_3 conIncome_4
  conArea_1 conArea_2 conArea_3 conArea_4 conAttractive conMaintained
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

 LOGISTIC REGRESSION VARIABLES dep13.5
  /METHOD=ENTER coh13.14 conAge_1, conAge_2, conAge_3, conAge_4, conAge_5, conAge_6
conImmigrant_1 conImmigrant_2 conOwner conEdu_1 conEdu_2 conEdu_3 conIncome_1
conIncome_2 conIncome_3 conIncome_4
  conArea_1 conArea_2 conArea_3 conArea_4 conAttractive conMaintained
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

 LOGISTIC REGRESSION VARIABLES dep13.5
  /METHOD=ENTER coh13.15 conAge_1, conAge_2, conAge_3, conAge_4, conAge_5, conAge_6
conImmigrant_1 conImmigrant_2 conOwner conEdu_1 conEdu_2 conEdu_3 conIncome_1
conIncome_2 conIncome_3 conIncome_4
  conArea_1 conArea_2 conArea_3 conArea_4 conAttractive conMaintained
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

 LOGISTIC REGRESSION VARIABLES dep13.5
  /METHOD=ENTER coh13.16 conAge_1, conAge_2, conAge_3, conAge_4, conAge_5, conAge_6
conImmigrant_1 conImmigrant_2 conOwner conEdu_1 conEdu_2 conEdu_3 conIncome_1
conIncome_2 conIncome_3 conIncome_4
```

conArea_1 conArea_2 conArea_3 conArea_4 conAttractive conMaintained
/CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).