



Master thesis Sociology – Governance of Migration and Diversity

The impact of gentrification on belongingness to the neighbourhood in Rotterdam

Differences between various ethnic groups

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Abstract

In this research paper, the relationship between gentrification in Rotterdam neighbourhoods and feelings of belongingness is investigated. Belongingness to the neighbourhood is divided in two predictors: attachment to the neighbourhood and connectedness to the neighbourhood. It was expected that gentrification has a negative influence on belongingness to the neighbourhood because of the (fear of) displacement of original residents and the disruption of social cohesion. Apart from the direct relationships, a moderation by the ethnic background was tested as well. It was hypothesized that longer established ethnic groups in Rotterdam experience the strongest effect of gentrification on feelings of belongingness, then less established ethnic groups, and last the Dutch native group. The feelings of belongingness to the neighbourhood of long established groups were namely expected to be largely related to their ethnic/racial identity, and when gentrification happens this could disrupt their feelings of belongingness the most. Analysing data from the Wijkprofiel (Neighbourhood Profile) 2015, this paper found that gentrification generally does not influence the level of belongingness to the neighbourhood. Only native Dutch residents experience a higher level of connectedness when the level of gentrification in their neighbourhood rises. As for the differences between different ethnic groups in Rotterdam, only people with a Cape Verdean background experience a weaker relationship between gentrification and connectedness to the neighbourhood compared to people with a Dutch ethnic background. The results of this paper thus nuance the discussion about the often-proclaimed negative effects of gentrification in the city.

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1. Introduction

The areas where people reside can have major influences on their life opportunities. One of the main recent debates about residential areas in cities is about whether people from different social, economic or cultural backgrounds should be mixed more in residential areas to prevent segregation (Phillips, 2007; Musterd, Marcińczak, van Ham & Tammaru, 2017). This issue is especially politicized in the case of ethnic minority groups within cities. Several European states fear that, because of ethnic clustering in certain neighbourhoods, ethnic minorities would not integrate as well as expected, which can have polarising effects on society. Ethnic clustering is also seen as leading to disadvantages like diminishing the amount of social contact, the social solidarity, and the civic and political involvement in the neighbourhood (Phillips, 2007; Kaplan & Douzet, 2011; Van der Laan Bouma-Doff, 2007). The sense of social connection in the neighbourhood is important since it can result in more trust and willingness to work together locally with neighbours, more care for each other's health, less local crime, and less feelings of discrimination (Klinenberg, 2015; Hunt et al., 2007; Sampson, 2012; Sharkey, 2018). An aspect that appears to be the base of a socially cohesive neighbourhood is the sense of belonging to the neighbourhood. When people feel at home, like they belong, at ease and emotionally safe in an environment, they are more likely to trust other people within their environment and to communicate better, which can eventually lead to more social cohesion within the neighbourhood (McMillan & Chavis, 1986; Sampson, 2012). This research paper will therefore focus on what aspects might influence various levels of feelings of belongingness to one's neighbourhood.

Even though evidence of negative effects of ethnic segregation and clustering in the city has been contested (Neal & Neal, 2016; Wang & Ramsden, 2018), many cities have tried to diminish the level of ethnic clustering by for example the governmental strategy of gentrification (Atkinson, 2004; Lees & Lay, 2008; Hochstenbach & van Gent, 2015; Uitermark, Duyvendak & Kleinhans, 2007). Gentrification is often defined as the process where middle- to higher socio-economic class move into neighbourhoods of the working class, upgrade the houses they started living in, and therefore make the neighbourhood more attractive to more middle- and higher-class people (Atkinson, 2004). The local governments can then feel pressured to invest in and upgrade these neighbourhoods, which eventually will attract even more middle- and higher-class residents (Billig & Churchman, 2002).

(Local) governments have often tried to actively stimulate gentrification processes by for example urban restructuring. This entails state-induced investment in construction of owner-

occupied and middle-class housing in urban neighbourhoods that have many low-cost, social (rental) housing and social disadvantages (Uitermark & Bosker, 2014; Uitermark, Duyvendak & Kleinhans, 2007). The goal of this undertaking is to reduce concentrations of certain disadvantaged groups of people in neighbourhoods, which may create problems for authorities (Uitermark, Duyvendak & Kleinhans, 2007). This strategy of gentrification has been contested since it can result in displacement of original inhabitants and undermining social cohesion between the original inhabitants that stay in the neighbourhoods, and new inhabitants that stem from higher socio-economic backgrounds (Uitermark, Duyvendak & Kleinhans, 2007; Ghaffari, Klein, & Angulo Baudin, 2018; Lees, 2008).

In the United States, some research has already been done on the relationship between gentrification and ethnicity (Murdie & Teixeira, 2011; Nyden, Edlynn & Davis, 2006). These studies mostly showed that gentrifying processes in neighbourhoods can result in physical displacement, but also in different forms of social exclusion of long-term ethnic minority residents and changes in social cohesion in the neighbourhood (Zukin, 1995, 2008, 2009). This relationship between gentrification and ethnicity has however been understudied in Western Europe, which is why this research paper tries to contribute to increase the understanding as to how gentrification processes influence the lives of ethnic minorities in Western Europe (Polat, 2020).

This paper will specifically contribute to clarifying the relationship between gentrification and feelings of belongingness to one's neighbourhood since the literature on this topic appears to be divided. Whilst one strand of research seems to show positive effects of gentrification for the social cohesion, feeling at home and belonging to the neighbourhood (Sampson, 2012; Sullivan, 2007), another strand indicates there are negative effects (Freeman, 2006; Zukin, 2016). This paper will also investigate how this relationship might be different for native residents and ethnic minority group residents, as for different kinds of ethnic groups. In general, research acknowledges that different ethnic groups can have different experiences in neighbourhood attachment, and feelings of belongingness to the neighbourhood. Wang and Ramsden (2018) for example showed that the native White residents report different levels of neighbourhood attachment than Pakistanis, Bangladeshis and Indians when the local share of ethnic residents in a neighbourhood increases. However, it is still unclear how people from different ethnic backgrounds might react differently to changes in the neighbourhood because of gentrification. Different ethnic groups have various migration histories and differ in their length of stay in their countries of destination, it is therefore theoretically interesting to see if these factors might influence their different experiences.

To contribute to this discussion, this paper will specifically zoom in on an ethnically diverse city where city policies have tried to combat ethnic clustering for a long period of time already; the city of Rotterdam in the Netherlands (Scholten, Krul & Van de Laar, 2019; van Eijk, 2010; van Gent, Hochstenbach & Uitermark, 2017). The city for example introduced the very contested ‘Rotterdam-Law,’ that tries to combat ethnic segregation by not allowing people receiving social welfare benefits to settle in certain deprived neighbourhoods. Investigating the effects of gentrification on belongingness to the neighbourhood could contribute to the ongoing discussion in the city on the effects of gentrification policy. And by looking at possible differences of the relationship between ethnic groups, the city council could gain more information about what different groups are experiencing in terms of belongingness. By zooming in on this specific city as a case study of an ethnically diverse city, this paper tries to contribute on gaining in depth information on feelings of belongingness to the neighbourhood for different ethnic groups. Even though this research focuses on just one city, it’s in-depth analysis can also contribute to create an image of how this relationship could work in other (Western) cities, or at least other cities within the Netherlands. This paper will eventually try to answer the following research question: *‘To what extent are feelings of belongingness to the neighbourhood influenced by gentrification in neighbourhoods in the city of Rotterdam over time?’*, and the following sub question: *‘To what extent does the possible relationship between gentrification and belongingness in Rotterdam neighbourhoods differ for different ethnic resident groups?’*.

2. Theory

2.1 Expected effects of gentrification

The effect of gentrification on community connection and feelings of belongingness has been contested. One strand of literature argues that gentrification processes can result in an increasing number of wealthy residents in disadvantaged neighbourhoods, which can put pressure on the local government to invest more in these neighbourhoods which can help further upgrade them (Atkinson, 2004; Billig & Churchman, 2002; Freeman, 2011). Research showed that the rise of the level of income in neighbourhoods, because of gentrification processes, increased the satisfaction about the neighbourhood of original residents of the neighbourhood (Brown-Saracino, 2009). The research of Sullivan (2007) in Portland, Oregon, even showed that this is the case for different sorts of residents, long-time residents and newcomers, home renters and owners, and Whites and minorities. According to Sampson (2012), social cohesion in the

neighbourhood can increase when improvements by gentrification processes in the formerly disadvantaged neighbourhoods happen. All residents would then namely feel safer and are more likely to engage in social contact with their neighbours which increases the general social cohesion in the neighbourhood (Sampson, 2012).

However, another strand of research articles showed more negative results of gentrification to the neighbourhood (Ghaffari, Klein, & Angulo Baudin, 2018; Uitermark, Duyvendak & Kleinhans, 2007). Research of Williams (2016) for example showed that gentrification can potentially result in an increase in prices of property in formerly disadvantaged neighbourhoods, which can result in displacement of original residents who have been living in their neighbourhoods for a long period of time. Even though actual displacements of these original residents might not actually happen, the fear of displacement alone can result in distress for the original residents (Freeman, 2006; Zukin, 2016). This could cause residents to no longer be willing to invest in new social contacts with the new residents with higher socio-economic statuses, which could lead to a lesser sense of connection and belonging to the neighbourhoods (McMillan & Chavis, 1986).

Next to the distress gentrification can cause to original residents of disadvantaged neighbourhoods where gentrification processes take place, gentrification also directly leads to alteration of the composition of residents in the neighbourhood, which can lead to original resident's communities to be disrupted (Sullivan, 2007; Zukin, 2016). Social connections within residential communities in general take a long time to be established, since residents first have to feel at ease with each other (Sampson, 2012). When new residents make their entrance in a certain neighbourhood in a relatively brief period of time, the original residents might struggle with the amount of time they have to feel at ease with them. This could lead to a decline in community cohesion and sense of belonging to the community/neighbourhood.

As illustrated above, scientific literature showed that gentrification can influence the social connections, attachment to the neighbourhood and feelings of belongingness of neighbourhood's residents in both a negative, and a positive way. However, the most recent empirical evidence in cities seems to support the positive direction in which gentrification can influence the feelings of belongingness in the neighbourhood (Williams, 2016; Zukin, 2016; Sampson, 2012). For this reason, the following hypothesis is formulated: *H.1: Residents living in neighbourhoods that have been experiencing gentrification to a larger extent from 2004 until 2015 in Rotterdam will have lower feelings of belonging to their neighbourhood than residents in neighbourhoods in Rotterdam that experienced less gentrification.*

2.2 The city of Rotterdam

Rotterdam, the second largest city of the Netherlands, has been an ethnically diverse city for a long period of time already. Rotterdam has experienced large scale-immigration since the end of the nineteenth century when it emerged as a port- and industrial city that attracted immigrants in large numbers (Entzinger, 2019). These groups of immigrants were mostly placed and attracted to certain neighbourhoods in the city with lower rental dwellings. This started the history of ethnic segregation in the city that is still strongly visible nowadays (Entzinger, 2019). The city of Rotterdam has tried to decrease this phenomenon of ethnic segregation for a long time. The city for example introduced quota systems that entailed that people from an ethnic minority group could not move to neighbourhoods where a certain maximum quota of ethnic minorities was already reached (Bolt, 2009; van Eijk, 2010). Rotterdam also introduced the so-called 'Rotterdam-law', that tries to combat ethnic segregation by not allowing people receiving social welfare benefits to settle in certain deprived neighbourhoods (Bolt, 2009; van Gent et al., 2017). Even though this proposal caused much resistance, the government paid little to no attention to this and the new 'Rotterdam-law' was implemented in January 2005 (van Eijk, 2010). After this implementation, researchers have tried to examine the effects this active way of trying to combat ethnic segregation in Rotterdam neighbourhoods has had. Van Gent, Hochstenbach and Uitermark (2018) for example showed that the 'Rotterdam-Law' does not show clear improvements in the livability or safety in neighbourhoods, but that people from excluded groups are very much restricted by it.

2.3 Differences for different ethnic groups

2.3.1 Native vs non-native residents

Next to examining whether there is an expected negative relationship between gentrification and the level of feelings of belongingness to Rotterdam neighbourhoods, this paper will also look at the different experiences residents from different ethnic groups might have with gentrification processes. Previous research already found multiple times that common ground and overlapping values seem to play a very important role in whether residents feel at home and feel like they belong in their neighbourhood (McMillan & Chavis, 1986; McPherson, Smith-Lovin & Cook, 2001). The principle of homophily is at the root of this phenomenon. This principle assumes that people will have stronger social connections with people that have similar characteristics as themselves (McPherson, Smith-Lovin & Cook, 2001). When a residential turnover of people with a higher socio-economic status to disadvantaged neighbourhoods takes place, the original residents of the disadvantaged neighbourhoods might

not experience this common ground with their neighbours anymore (McPherson, Smith-Lovin & Cook, 2001). Various research also showed that gentrification could lead to ‘whitening’ in neighbourhoods, next to a socio-economic turnover of people (Freeman, 2006; Sullivan & Shaw, 2011; Zukin, 2016). Very generally speaking, gentrifiers tend to be white, middle-class people. In the areas of research of these studies, this ‘whitening’ resulted in less feelings of belongingness in the neighbourhoods of original residents of colour (Freeman, 2006; Sullivan & Shaw, 2011).

Some studies also argued that these changes in feelings of belongingness of residents of colour did not only occur because of ethnic differences, but also because of socio-economic differences (Maly, 2005; Pattillo, 2007). Ethnicity and socio-economic class therefore are converging when it comes to areas of gentrification and the effect of feelings of belongingness. According to these theories, it can be expected that native people will mostly only experience differences based on socio-economic status with white people that move into their neighbourhood because of gentrification. People with different ethnic backgrounds residing in the neighbourhood could however experience more differences because culturally speaking, they might have even less in common with their new neighbours with higher socio-economic statuses. It can thus be expected that native residents could experience a less strong effect of gentrification on their feelings of belonging to the neighbourhood than people with different ethnic backgrounds.

2.3.2 Different ethnic groups

Next to differences between natives and non-natives, differences between different ethnic groups in the relationship between gentrification and feelings of belongingness could be expected. The article of Nyden, Edlynn & Davis (2006) for example explains that ethnic groups in neighbourhoods in Chicago where gentrification takes place can experience a loss of their ethnic/racial identity. This identity especially is important for long established ethnic groups in the neighbourhoods, like in the Latino neighbourhoods in Chicago as shown by Nyden, Edlynn & Davis (2006). It thus seems to be the case that, if an ethnic community has been established in a neighbourhood for a long period of time, their feelings of belongingness to that neighbourhood are largely related to their ethnic/racial identity. When an ethnic community group however has just entered the country or the neighbourhood, their identity and feeling of belongingness to the neighbourhood can be less determined by their ethnic/racial identity. When gentrification results in changes in the neighbourhood, these ‘newer’ ethnic groups could

therefore possibly experience less detachment from the neighbourhood, and therefore a lesser loss of feelings of belongingness to that neighbourhood.

In Rotterdam, five migrant groups have been present in the city for a relatively longer period and come from the so-called ‘classic’ migration countries: Turkey, Morocco, Surinam and Indonesia (Van der Star, de Jong & Manting, 2021). People from Turkey and Morocco made an entrance in the Netherlands in large numbers since the 1960’s, when they entered as migrant workers (Van der Star et al., 2021). People from Indonesia mostly arrived and settled in the Netherlands from 1949 until the first half of 1960 (Jansen, 2006). The migration of many Surinamese people to the Netherlands lastly mainly happened around 1975, since in this year, Surinam was declared to be independent from the Netherlands (Jennissen, 2013). Groups that settled in the Netherlands and in the city of Rotterdam more recently are mostly groups from Eastern-Europa and so-called ‘asylum’ countries: countries in the Middle East and Africa (except for Morocco) (Van der Star, de Jong & Manting, 2021). People from these ‘asylum’ countries mostly migrated to the Netherlands in large numbers around 2015 because of persistent chaos and civil wars in for example Syria, and bad living conditions because of totalitarian regimes in for example Eritrea (Vluchtelingenwerk, 2021). This division of ‘classic’ migration countries and ‘asylum’ migration countries is based on the division by a report of the Dutch planning office for the living environment (PBL) (Van der Star, de Jong & Manting, 2021). This paper will follow this division, and will therefore distinguish the people originating from the ‘classic’ countries as the more established group in Rotterdam, and people originating from the ‘asylum’ countries as the group that has not yet had the chance to become an established group in the city, since they only relatively recently started to settle down. According to the aforementioned theories and expectations, the following hypothesis is composed: *H.2: People originating from ‘classic’ countries’ in Rotterdam are experiencing the strongest effect of gentrification on feelings of belongingness to the neighbourhood, then people originating from ‘asylum’ countries and people from the native group are experiencing the least strong effect of gentrification on feelings of belongingness to the neighbourhood.*

3. Methods

3.1 Data

This research paper uses data from the 2015 wave of the Wijkprofiel (Neighbourhood Profile) of Rotterdam (Municipality of Rotterdam, 2020). The Neighbourhood Profile is the monitoring

instrument of the municipality of Rotterdam that is conducted every two years since 2008 to measure the social, and physical state of neighbourhoods in Rotterdam. In this neighbourhood profile, results of survey answers of around 15.000 people each year living in Rotterdam are combined with administrative data from the city. The survey covers all 71 neighbourhoods in the city per wave where a clustered sample was drawn to get a representative sample. Next to that, ethnic minority groups were oversampled to create more representative response rates. The response rate of the survey was 21.5% for 2015. The number of respondents of the dataset was 14579. Next to using the Wijkprofiel data of 2015, this paper also uses the Rotterdam municipal administration data of 2004 and 2015 to measure gentrification processes in the neighbourhoods.

To make sure the dataset covers respondents that actually could have experienced some changes in their neighbourhood between, a selection has been made according to how many years the residents have been living in the neighbourhood at the moment the survey took place in 2015. When respondents were living in the neighbourhood for less than 5 years, they were deleted from the dataset. Because of this selection, 4398 (30.2%) respondents were deleted which resulted in a final sample size of 10181 respondents.

3.2 Operationalisation

3.2.1 Dependent variables

To operationalise the feelings of belongingness to the neighbourhood, four survey questions were used as measurements. First, three statement questions with the same response categories were used and examined with a factor analysis whether they form a latent scale variable. This statement question was: ‘Please indicate to what extent you agree or disagree with the following statements:

- (1) I feel at home with the people who live in this neighbourhood.
- (2) If I can, I'll move out of this neighbourhood.
- (3) It is not nice to live in this neighbourhood.

The responses to the first statement were turned around in order to fit the scale that gets higher when people feel more attachment to the neighbourhood. The response categories for these statements were coded as follows: Totally agree (5), Agree (4), Neither agree nor disagree (3), Disagree (2), Totally disagree (1). The people that answered ‘‘Do not know/no opinion’’ were defined as missing.

In order to see whether these variables could be combined to one scale, a factor analysis was executed. From the explorative factor analysis, it appeared that only 1 factor had an Eigenvalue of bigger than 1 (1,948). On the base of the communality values of the items, no items have to be deleted because all communality values were higher than 0.20. Also, no further items need to be removed based on the factor loadings because all items have a factor loading higher than 0.4. After the factor analysis, a reliability analysis was conducted for the 3 items. The Cronbach's alpha is 0.726. De found alpha value of 0.726 comes closer to a 'good' reliability, which allows the creation of a combined scale of the three items for attachment to the neighbourhood. The scale was created by taking the mean score on the three questions. When respondents had a missing value on 2 or 3 questions, they were deleted from the dataset. Because of this, in total 296 (2.9%) respondents were deleted from the dataset. The scale builds up from score 1 to 5. The higher the score, the more people feel attached to their neighbourhood.

Next to these statement questions, the question 'Can you indicate how connected you feel to your neighbourhood' was used as another dependent variable of feelings of belongingness to the neighbourhood. The response categories were coded as: Very connected (5), Connected (4), A little connected (3), Not connected (2), Totally not connected (1). The category 'Do not know/No opinion' was defined as a missing value and deleted according to the listwise deletion principle. This variable had 317 (3.1%) missing values.

3.2.2 *Independent variables*

Gentrification

Scientific research has measured gentrification in several ways in the past, but the most common indicators are based on the socio-economic status (SES). An indicator that is often used is the average level of income compared to the average of the city. This paper will measure the level of gentrification within a neighbourhood by calculating the changes in the level of the socio-economic status between 2004 and 2015. In order to measure these changes, it is investigated whether the following neighbourhood indicators of 2004 and 2015 could create a scale-variable of gentrification: (1) the percentage of households part of the lowest income group (40%), (2) the percentage of unemployed people, (3) the percentage of people receiving social benefits. A factor analysis is executed, and it appeared that for 2015, only 1 factor had an Eigenvalue of bigger than 1 (2,769). On the base of the communality values of the items, no items have to be deleted because all communality value were higher than 0.20. Also, no further items need to be removed based on the factor loadings because all items have a factor loading

higher than 0.4. For 2004, also only 1 factor had an Eigenvalue of bigger than 1 (1,768). On the base of the communality values of the items, the item % unemployed was the only item that had a communality value of lower than 0.20 (0.020). This item also has a factor loading lower than 0.4 (-0.142). This item therefore cannot be included in the scale of socio-economic status of 2004. The scale of Socio-economic status of 2015 therefore can also only consist out of the low-income item and the percentage of people receiving social benefits. After the factor analysis, a reliability analysis was executed for the 2 items for both years. The Cronbach's alpha is 0.758 for 2004. This value will not increase after deletion of one of the items. This alpha score comes closer than a 'good' reliability, which allows it to create a combined scale of the two items. For 2015, the Cronbach's alpha is 0.788, which can also be seen as a 'good' reliability score. The two items can therefore also be combined to a scale of socio-economic status for 2015.

In order to create a scale for socio-economic status out of these two items for both 2004 and 2015, standardized regression scores were used. After the creation of these two scales, the score of socio-economic status of 2004 was subtracted from the score of socio-economic status of 2015 and this scale was mirrored. This way, this new gentrification variable measures the change in socio-economic status in the neighbourhood between 2004 and 2015. The higher the score on this scale, the more gentrification took place in the neighbourhood. There were no missing values on this variable.

Socio-economic status in the neighbourhood 2015

Next to the changes in the socio-economic status in the neighbourhood between 2004 and 2015, the socio-economic status of the neighbourhoods in 2015 was also considered as an independent variable in the analysis. This variable is constructed in the same way as described above in the part about gentrification, but then only for 2015.

Ethnicity

The information about the ethnic background of people in Rotterdam is adopted from the administrative data from the municipality. Ethnic background is specified as: Dutch ethnicity, Surinamese, The Dutch Antilles, Turkey, Morocco, Cape Verdean Islands, Other Non-Western and other European Union. As explained before, this research paper will focus on the differences between the Dutch ethnicity group, the 'classic' migration countries (Surinam, Turkey, The Dutch Antilles, and Morocco), and the more recent 'asylum' countries. For these recent 'asylum' countries, this research will consider the category other non-western countries,

since it can be expected that people from these countries largely come from the ‘asylum’ countries, like for example Syria. In order to include the categories of ethnic background in the analysis, dummies were made for all eight categories to see if there also might be differences between people from the different countries of origin. There were no missing values on the variable of ethnic background.

3.2.3 Control variables

The following control variables will be used to see whether the possible relationship could be influenced by other variables: Work status, age, gender, highest achieved educational level and ethnic diversity in the neighbourhood based on the Herfindahl index (see Abascal & Baldassari, 2015). Work status is defined based on the question: ‘Do you perform paid work?’. The answer ‘No’ was coded as 0 and ‘yes’ was coded as 1. There were 515 (5.1%) missing values on this variable. Since this percentage of missing values is relatively high, the missing values were considered as a separate dummy variable. Age is based on the question ‘what is your age?’. There were 33 (0.3%) missing values on this variable that were deleted. For gender, men were coded as 0 and women as 1, for which there were no missing values. The variable educational level is based on the answer that was given to the question ‘what is your highest achieved educational level?’. The answers ‘No education, lower education, lower vocational education, Vmbo, havo, vwo and mulo’ were coded as lower education. The mbo level was coded as middle level of education, and the higher vocational and scientific education were coded as high level of education. People that did not answer the question or gave multiple answers were defined as missing, which were 572 (5.6%) in total. These missing values were put into a separate dummy variable next to the three dummies for educational level. The variable ethnic diversity is based on the Herfindahl index score based on the municipal administration data that was calculated in every neighbourhood in Rotterdam. There were no missing values on this variable.

After deletion of all the missing values on the variables as described above, there were still 9651 (94,8%) respondents left in the dataset. In the following table, the descriptive statistics can be found for all the variables involved in this research paper.

Table 1. Descriptive statistics.

	Mean	St. Dev.	Minimum	Maximum
Attachment to the neighbourhood	3.689	0.823	1	5
Connectedness to the neighbourhood	3.637	0.925	1	5
Ethnic background				
Dutch	0.57		0	1
Surinamese	0.09		0	1
The Dutch Antilles	0.03		0	1
Turkish	0.07		0	1
Moroccan	0.04		0	1
Cape Verdean	0.03		0	1
Other non-Western	0.05		0	1
Other Western	0.05		0	1
Other European Union	0.06		0	1
SES neighbourhood 2015	1.926	1.000	0	4.41
Change Socio-Economic status neighbourhood 2004-2015	1.628	0.548	0	4.21
Work status				
Missings	0.039			
Paid work	0.502			
No paid work	0.459			
Gender				
Male	0.459			
Female	0.541			
Educational level				
Low	0.446			
Middle	0.197			
High	0.310			
Missings	0.046			
Age	53.35	16.518	15	100
Ethnic diversity in the neighbourhood 2015	0.654	0.167	0.195	0.860

Source: Wijkprofiel 2015 & municipal basic administration 2004 and 2015. N=9275

3.3 Analytical strategy

To research the associations between the different variables, multiple linear regressions are performed. The dependent variables in these analyses are attachment to the neighbourhood and connectedness to the neighbourhood. In the first model, the variables gentrification, and the neighbourhood socio-economic status in 2015 are the independent variables. In the second model, the Herfindahl score control variable was added. In the third model, the ethnic background dummies were added to these independent variables. In the fourth model, the

individual level control variables were added, and in the fourth model the interaction variables of ethnic background and gentrification were added.

Before the analysis was executed, it has been investigated whether there is multicollinearity between the independent variables of gentrification and neighbourhood socio-economic status of 2015. Both Variance Inflation Factors (VIF) were smaller than 3 (both 1.089). This means that these two predictors do not correlate strongly concerning the dependent variables. The multicollinearity between the ethnic diversity in the neighbourhood (Herfindahl index) and the neighbourhood socio-economic status of 2015 has also been investigated. Both VIF scores were smaller than 3 (2.809 and 2.811). These two predictors therefore also do not strongly correlate concerning the dependent variables.

4. Analysis

4.1 Attachment to the neighbourhood

The effect of gentrification on attachment to the neighbourhood has been researched with linear regression analysis. The results of this analysis are visible in the first model of table 2. The variable Socio-Economic status of the neighbourhood of 2015 is added to this model as well. The effect of gentrification on attachment to the neighbourhood is -0.032, which is a significant effect ($p < 0.05$). People that live in a neighbourhood that scores higher on the gentrification index appear to score 0.032 lower on the scale of attachment to the neighbourhood. However, the attachment scale is based on scores between 1 and 5 (5 meaning most attachment to the neighbourhood), -0.032 is therefore not a very strong effect. The effect of the socio-economic status of the neighbourhood in 2015 has a positive effect on attachment to the neighbourhood with a significant score of 0.253 ($p < 0.001$). This means that, when a neighbourhood has a higher socio-economic status, people in that neighbourhood feel more attached to their neighbourhood.

After addition of the control variable ethnic diversity in the neighbourhood in 2015 (based on the Herfindahl-index) in model 2, the effect of gentrification on attachment to the neighbourhood was not significant anymore with a score of -0.025 ($p > 0.05$). The effect of socio-economic status on attachment to the neighbourhood was however still significant with a score of 0.165 ($p < 0.001$). The Herfindahl score itself has a negative significant effect on attachment to the neighbourhood of -0.656 ($p < 0.001$) which shows that the more ethnically diverse a neighbourhood is, the less attachment to the neighbourhood there is.

In model 3 of table 2, the effects of ethnic background on attachment to the neighbourhood can be found. The effect is significant negative for six of the eight different

ethnic background groups. The effect is the strongest for the Moroccan background -0.238 ($p < 0.001$), then Other non-Western (-0.195 ; $p < 0.001$), followed by Turkish (-0.164 ; $p < 0.001$), then Cape Verdean (-0.155 ; $p < 0.05$), after that the Surinamese (-0.104 ; $p < 0.001$), and finally other Western (-0.078 ; $p < 0.05$). People from the Dutch Antilles and the other European Union group did not have a significantly different score on attachment to the neighbourhood than people with a Dutch ethnic background.

When the individual control variables were added to the previous model, only the following ethnic groups had a significant and negative effect on attachment to the neighbourhood compared to the Dutch reference group: Moroccan (-0.141 ; $p < 0.01$), Other non-Western (-0.123 ; $p < 0.001$) and other Western (-0.081 ; $p < 0.05$). Interesting significant effects of the individual control variables on attachment to the neighbourhood are: people that do paid work compared to people that do not do paid work feel more attached to their neighbourhood (0.056 ; $p < 0.01$), women feel more attached to their neighbourhood than men (0.039 ; $p < 0.05$), higher educated people feel more attached than lower educated (0.150 ; $p < 0.001$) and older people feel more attached than younger people (0.005 ; $p < 0.001$).

After addition of the interaction terms of ethnic background and gentrification to the fourth model, no interaction terms are significant. The effect of gentrification on attachment to the neighbourhood therefore does not differ for different ethnic groups

Table 2: Regression effects attachment to the neighbourhood

	Model 1	SE	Model 2	SE	Model 3	SE	Model 4	SE	Model 5	SE
Intercept	3.252***	0.027	3.839***	0.076	3.814***	0.075	3.497***	0.085	3.466***	0.091
Gentrification	-0.032*	0.016	-0.025	0.016	-0.015	0.016	-0.003	0.015	-0.003	0.015
SES neighbourhood 2015	0.253***	0.008	0.165***	0.013	0.157***	0.013	0.137***	0.014	0.139***	0.014
Ethnic diversity neighbourhood 2015			-0.656***	0.079	-0.540***	0.080	-0.579***	0.080	-0.559***	0.081
Ethnic background (Ref = Dutch)										
Surinamese					-0.104***	0.029	-0.050	0.029	0.034	0.087
The Dutch Antilles					-0.020	0.048	0.042	0.048	0.124	0.148
Turkish					-0.164***	0.034	-0.061	0.035	0.048	0.116
Moroccan					-0.238***	0.043	-0.141**	0.044	-0.021	0.123
Cape Verdean					-0.155*	0.049	-0.066	0.049	0.135	0.143
Other non-Western					-0.195***	0.036	-0.123**	0.036	-0.296**	0.109
Other Western					-0.078*	0.035	-0.081*	0.035	-0.132	0.110
Other European Union					0.007	0.033	0.013	0.033	-0.011	0.106
Work status (Ref. = Not working)										
Paid work							0.056**	0.019	0.056**	0.019
Missings							-0.189***	0.042	-0.190***	0.042
Gender (Ref. = Male)										
Female							0.039*	0.016	0.039*	0.016
Educational level (Ref. = Low).										
Middle							-0.038	0.022	-0.038	0.022
High							0.150***	0.020	0.150***	0.020
Missings							-0.071	0.039	-0.070	0.039
Age							0.005***	0.001	0.005***	0.001
Gentr. *Surinamese									-0.015	0.015
Gentr. *Dutch Antilles									-0.009	0.015
Gentr. *Turkish									-0.017	0.017
Gentr. *Moroccan									-0.015	0.014
Gentr. *Cape Verdean									-0.021	0.014
Gentr. *Other Non-Western									0.024	0.014
Gentr. *Other Western									0.007	0.015
Gentr. *Other European Union									0.004	0.015
R2	0.093		0.099		0.106		0.125		0.126	

Note: N= 9275. * $p < \alpha 0,05$; ** $p < 0,01$; *** $p < 0,001$; one-sided testing

4.2 Connectedness to the neighbourhood

The results of the regression analysis of the effect of gentrification on connectedness to the neighbourhood show that gentrification does not have a significant effect on connectedness to the neighbourhood with an effect of 0.010 ($p > 0.05$). People that live in a more gentrified neighbourhood do thus not differ in their feelings of connectedness to the neighbourhood from people that live in a less gentrified neighbourhood. The level of socio-economic status of the neighbourhood in 2015 however does have a significant effect on the level of connectedness to the neighbourhood with a score of 0.141 ($P < 0.001$). This means that the higher the socio-economic status of the neighbourhood is, the more people feel connected to their neighbourhood.

After addition of the control variable ethnic diversity in the neighbourhood in 2015 (based on the Herfindahl-index) in model 2, the effect of gentrification on connectedness to the neighbourhood was not significant with a score of 0.017 ($p > 0.05$). The effect of socio-economic status on connectedness to the neighbourhood was however still significant with a score of 0.051 ($p < 0.01$).

In model 3 of table 3, the effects of ethnic background on attachment to the neighbourhood can be found. The effect is significant and negative for four of the eight different ethnic background groups. The Turkish ethnic background has the strongest negative score (-0.449; $p < 0.001$), then the other non-Western group (-0.158; $p < 0.001$), and lastly the Other Western group (-0.094; $p < 0.05$). Surprisingly, Moroccan people have a significant positive coefficient score (0.102; $p < 0.05$). This means that Moroccan people have a higher score on connectedness to the neighbourhood than Dutch people.

When the individual level control variables were added to the previous model, only the following ethnic groups still had a significant (negative) effect on attachment to the neighbourhood compared to the Dutch reference group: the Turkish group (-0.374; $p < 0.001$), the other non-Western group (-0.158, $p < 0.001$), the Moroccan group (0.384; $p < 0.05$), and the other Western group (-0.094; $p < 0.05$). Interesting significant effects of the control variables on connectedness to the neighbourhood are: women feel more connected to their neighbourhood than men (0.044; $p < 0.05$), higher educated people feel more connected than lower educated (0.107; $p < 0.001$) and older people feel more connected than younger people (0.004; $p < 0.001$). The most interesting result after addition of the control variables however is the fact that gentrification now has a significant positive effect on connectedness to the neighbourhood (0.037; $p < 0.05$). People that live in more gentrified neighbourhoods thus seem to experience a slightly higher level of connectedness to their neighbourhood when controlled for work status,

gender, age, and educational level. This finding points at a suppression effect. This means that the relationship between gentrification and connectedness to the neighbourhood in the original models 1, 2 and 3 is cancelled out because of the influence of the individual level control variables. However, the effect of 0.037 on a scale of 1 to 5 can be seen as a rather small effect.

For the effect of the interaction terms on connectedness to the neighbourhood, only the added interaction term of people with a Cape Verdean background appeared to significantly differ from the Dutch group. This interaction term is -0.035 ($p < 0.05$), which means that the relationship between gentrification and connectedness to the neighbourhood is slightly less strong for people with a Cape Verdean background compared to people with a Dutch ethnic background. However, after addition of the interaction terms, the effect of gentrification on connectedness to the neighbourhood is significant positive for the native Dutch group (0.041; $p < 0.05$). This means that the level of connectedness to the neighbourhood for native Dutch people is higher for those that live in a more gentrified neighbourhood.

Table 3: Regression effects connectedness to the neighbourhood

	Model 1	SE	Model 2	SE	Model 3	SE	Model 4	SE	Model 5	SE
Intercept	3.350***	0.031	3.946***	0.088	3.940***	0.088	3.677***		3.648***	0.106
Gentrification	0.010	0.018	0.017	0.018	0.029	0.018	0.037*	0.018	0.041*	0.018
SES neighbourhood 2015	0.141***	0.010	0.051**	0.016	0.039*	0.016	0.026	0.016	0.027	0.016
Ethnic diversity in the neighbourhood 2015			-0.665***	0.092	-0.589***	0.093	-0.609***	0.093	-0.599***	0.094
Ethnic background (Ref = Dutch)										
Surinamese					0.036	0.033	0.072*	0.034	0.194	0.101
The Dutch Antilles					-0.056	0.055	-0.017	0.056	0.012	0.173
Turkish					-0.449***	0.039	-0.374***	0.041	-0.566***	0.135
Moroccan					0.102*	0.050	0.173**	0.051	0.164	0.144
Cape Verdean					-0.018	0.057	0.041	0.057	0.384*	0.167
Other non-Western					-0.158***	0.042	-0.105*	0.042	-0.102*	0.127
Other Western					-0.094*	0.041	-0.095*	0.041	-0.153	0.129
Other European Union					-0.019	0.039	-0.015	0.039	0.061	0.124
Work status (Ref. = Not working)										
Paid work							0.042	0.022	0.043*	0.022
Missings							-0.171**	0.050	-0.172**	0.050
Gender (Ref. = Male)										
Female							0.044*	0.019	0.044*	0.019
Educational level (Ref. = Low).										
Middle							0.008	0.025	0.008	0.025
High							0.107***	0.023	0.107***	0.023
Missings							-0.028	0.046	-0.028	0.050
Age							0.004***	0.001	0.004***	0.001
Gentr. *Surinamese									-0.022	0.017
Gentr. * Dutch Antilles									-0.003	0.017
Gentr. *Turkish									0.029	0.020
Gentr. *Moroccan									0.001	0.016
Gentr. *Cape Verdean									-0.035*	0.016
Gentr. *Other Non-Western									0.000	0.017
Gentr. *Other Western									0.008	0.018
Gentr. *Other European Union									-0.011	0.018
R2	0.024		0.029		0.045		0.053		0.054	

Note: N= 9275. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; one-sided testing

4.3 Conclusions concerning the hypotheses

With the results of this paragraph and the previous, the first hypothesis must be largely rejected since gentrification only has a significant negative effect on attachment to the neighbourhood, when not controlled for individual factors. As for connectedness to the neighbourhood, gentrification has no significant effect. *H.1: Residents living in neighbourhoods that have been experiencing gentrification to a larger extent from 2005 until 2015 in Rotterdam will have lower feelings of belonging to their neighbourhood than residents in neighbourhoods in Rotterdam that experienced less gentrification.*

When looking at the expected interaction effects, only people with a Cape Verdean background appear to feel less connected (but not less attached) to the neighbourhood compared to native Dutch people. No other differences between ethnic groups were found. The following hypothesis must therefore be rejected: *H.2: People originating from 'classic' countries in Rotterdam are experiencing the strongest effect of gentrification on feelings of belongingness to the neighbourhood then people originating from 'asylum' countries and people from the native group are experiencing the least strong effect of gentrification on feelings of belongingness to the neighbourhood.*

5. Conclusion, discussion, and policy implications

This paper tries to contribute to the current discussion on what effects gentrification processes in cities can have on the residents of the city, with the specific focus on the ethnically diverse city of Rotterdam. This discussion is especially present and politicized in the case of the effects on ethnic minority groups. The goal of this paper was to clarify if gentrification influences feelings of belongingness to one's neighbourhood, and how different ethnic groups might react differently to gentrification processes in their neighbourhood. The research question that was formulated to investigate these factors is: *'To what extent are feelings of belongingness to the neighbourhood influenced by gentrification in neighbourhoods in the city of Rotterdam over time?'*, and the following sub question: *'To what extent does the possible relationship between gentrification and belongingness in Rotterdam neighbourhoods differ for different ethnic resident groups?'*

The expectation was that gentrification in neighbourhoods could result in displacement, fear of displacement and alteration of the composition of residents in the neighbourhood. This could all contribute to original resident's communities and social connections to be disrupted, which can result in less feelings of belongingness to the neighbourhood (Williams, 2016; Zukin,

2016; Sampson, 2012). The results of this paper however show that most people that live in neighbourhoods that have experienced more gentrification during 2004 and 2015 did not experience less belongingness to their neighbourhood compared to people that live in less gentrified neighbourhoods. However, the results do show that native Dutch people feel more connected (but not attached) to their neighbourhood when the level of gentrification is higher. These findings are therefore in general not in line with the theory that gentrification would lead to less feelings of belongingness to the neighbourhood because of (threat) of displacement and alteration of the composition of residents. The fact that gentrification does not seem to result in more or less feelings of belongingness to the neighbourhood could be caused by the two possible effects of gentrification as discussed in the theory chapter. Next to the strand of literature that mostly found negative effects of gentrification, there is also a strand of literature that found some positive effects. According to this last strand of literature, gentrification could result in an increased number of wealthy residents in (disadvantaged) neighbourhoods. This could put pressure on the local government to invest more in these neighbourhoods which can help upgrading them and could result in increased satisfaction about the neighbourhood of original residents of the neighbourhood. This could eventually lead to more social cohesion which also influences feelings of belongingness to one's neighbourhood (Brown-Saracino, 2009, Sampson, 2012). Both negative and positive effects of gentrification on neighbourhoods have thus been found in previous research. The reason that this paper did not find an effect of gentrification on feelings of belongingness could therefore be a result of two opposite and therefore neutralizing effects of gentrification. It could be interesting for future research to investigate how these opposite mechanisms might actually work in practice and if certain groups experience positive effects, like the native Dutch group, while other groups experience the negative effects of gentrification.

The socio-economic status of 2015 however does influence feelings of belongingness to the neighbourhood; the higher the socio-economic status of one's neighbourhood, the more people feel like they belong to their neighbourhood. This is in line with results previous research found on the topic (Small & Newman, 2001; Tolsma, Van der Meer & Gesthuizen, 2009). For further research it would be especially interesting to see whether the influence of the socio-economic status in neighbourhoods on belongingness could differ for different ethnic groups, since this could help to differentiate policy that tries to improve feelings of belongingness and integration in neighbourhoods.

Next to the main effect of gentrification on belongingness to the neighbourhood, it was expected that ethnic groups that have been established in the Netherlands for a relatively longer

period of time would relate their feelings of belongingness to their neighbourhood largely to their ethnic identity, and therefore would feel more loss of belongingness to the neighbourhood when gentrification occurs (Maly, 2005; Nyden, Edlynn & Davis, 2006; Pattillo, 2007). The results of the paper however show that the effect of gentrification on belongingness to the neighbourhood does not differ for different ethnic groups. Only people with a Cape Verdean background appeared to experience less feelings of connectedness to the neighbourhood compared to Dutch people when the level of gentrification increases. This finding is therefore not in line with the theory that the (negative) influence of gentrification on belongingness to the neighbourhood would be the strongest for ethnic groups that have been more established in Rotterdam compared to the relatively new ethnic group and the native group. A possible reason why almost no differences between the ethnic groups were found could be the fact that the described ethnic groups might not hold on to their ethnic identity as much as assumed. It is unclear in this paper how long people from the ethnic groups in this dataset have been living in the Netherlands, and particularly in Rotterdam. Therefore, erosion of the ethnic identity could have already happened among most people from all ethnic groups, which could have influenced the fact that no real differences between ethnic groups were found. Further research should therefore also consider the length of residency in the country/city is also taken into consideration when investigating this topic.

The following limitations of the research could be the reason why no effect of gentrification on belongingness, and no differences of this effect between different ethnic groups have been found. Firstly, this paper used a relatively limited measurement of gentrification. Because datasets of both 2004 and 2015 were used, variables that could measure the socio-economic status of the neighbourhood were hard to compare with each other because they were sometimes measured in diverse ways. This resulted in a scale that only consisted of the percentage of households within the lowest income group and the percentage of people receiving social benefits. This relatively limited measurement of gentrification could have influenced the fact that no results were found. Future research on the topic of gentrification should therefore try to use more elaborate data which could incorporate multiple factors of gentrification.

Secondly, another aspect influencing the results of this paper could be the relatively broad definition of the data on neighbourhoods by the Central Bureau of Statistics of the Netherlands (CBS). The distinction between neighbourhoods in the city is based on administrative data and not so much on underlying social processes in neighbourhoods. This could have affected the results because people living in these neighbourhoods might not have

that much in common as expected. These neighbourhoods namely might be larger than the social space where people actually have their social ties (Petrović, Manley & van Ham, 2020).

Finally, this paper used cross-sectional data on the neighbourhoods. Even though this does give some information about the changing attitudes of residents of the neighbourhoods, it does not measure the actual changes in feelings of belongingness of residents that have experienced gentrification between 2004 and 2015. Therefore, future research could benefit from using panel data to investigate actual changes of feelings of residents.

To conclude, this research mainly showed that gentrification does not influence the level of belongingness to the neighbourhood for people in Rotterdam and that there are no real differences between different ethnic groups in the way gentrification influences feelings of belongingness. This result can contribute to more understanding about the effects of gentrification and gentrification policy on feelings of belongingness. In the case of Rotterdam, there has been much discussion about the effects of gentrification processes. However, this paper shows that this discussion can be nuanced because gentrification does not seem to have the often-proclaimed negative effect concerning belongingness. Gentrification policy can thus not necessarily be discouraged according to these results. A policy program of the municipality of Rotterdam that tries to stimulate gentrification in certain neighbourhoods nowadays is the 'Strong shoulders' Program (Erasmus University, 2018). With this program, the municipality tries to attract people from higher socio-economic classes to promising neighbourhoods to improve these neighbourhoods. This program received quite some critique, especially on the fact that new residents from the higher socio-economic class tend to cluster together after moving to one of these 'promising' neighbourhoods. There appears to be little transcending contact and effort to improve the neighbourhood as a whole, which influences peoples living experiences in their neighbourhood (Erasmus University, 2018). This paper however does not confirm negative consequences on feeling of belongingness to the neighbourhood and thus does not discourage policy programs such as the 'Strong shoulders' program.

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7. Appendix: Ethics and privacy statement



CHECKLIST ETHICAL AND PRIVACY ASPECTS OF RESEARCH

INSTRUCTION

This checklist should be completed for every research study that is conducted at the Department of Public Administration and Sociology (DPAS). This checklist should be completed *before* commencing with data collection or approaching participants. Students can complete this checklist with help of their supervisor.

This checklist is a mandatory part of the empirical master's thesis and has to be uploaded along with the research proposal.

The guideline for ethical aspects of research of the Dutch Sociological Association (NSV) can be found on their website (http://www.nsv-sociologie.nl/?page_id=17). If you have doubts about ethical or privacy aspects of your research study, discuss and resolve the matter with your EUR supervisor. If needed and if advised to do so by your supervisor, you can also consult Dr. Jennifer A. Holland, coordinator of the Sociology Master's Thesis program.

PART I: GENERAL INFORMATION

Project title: The effect of gentrification on the feelings of belongingness to neighbourhoods in Rotterdam: Are there differences between different ethnic groups

Name, email of student: Mo Zijlmans, 626582mz@eur.nl

Name, email of supervisor: Gijs Custers, custers@essb.eur.nl

Start date and duration: 01-12-2022 until 06-19-2022

Is the research study conducted within DPAS YES - NO

If 'NO': at or for what institute or organization will the study be conducted?
(e.g. internship organization)

PART II: HUMAN SUBJECTS

1. Does your research involve human participants. YES - NO

If 'NO': skip to part V.

If 'YES': does the study involve medical or physical research? YES - NO
Research that falls under the Medical Research Involving Human Subjects Act (WMO) must first be submitted to an accredited medical research ethics committee or the Central Committee on Research Involving Human Subjects (CCMO).

2. Does your research involve field observations without manipulations that will not involve identification of participants. YES - NO

If 'YES': skip to part IV.

3. Research involving completely anonymous data files (secondary data that has been anonymized by someone else). YES - NO

If 'YES': skip to part IV.

PART III: PARTICIPANTS

- 1. Will information about the nature of the study and about what participants can expect during the study be withheld from them? YES - NO
- 2. Will any of the participants not be asked for verbal or written 'informed consent,' whereby they agree to participate in the study? YES - NO
- 3. Will information about the possibility to discontinue the participation at any time be withheld from participants? YES - NO
- 4. Will the study involve actively deceiving the participants? YES - NO
Note: almost all research studies involve some kind of deception of participants. Try to think about what types of deception are ethical or non-ethical (e.g. purpose of the study is not told, coercion is exerted on participants, giving participants the feeling that they harm other people by making certain decisions, etc.).
- 5. Does the study involve the risk of causing psychological stress or negative emotions beyond those normally encountered by participants? YES - NO
- 6. Will information be collected about special categories of data, as defined by the GDPR (e.g. racial or ethnic origin, political opinions, religious or philosophical beliefs, trade union membership, genetic data, biometric data for the purpose of uniquely identifying a person, data concerning mental or physical health, data concerning a person's sex life or sexual orientation)? YES - NO
- 7. Will the study involve the participation of minors (<18 years old) or other groups that cannot give consent? YES - NO
- 8. Is the health and/or safety of participants at risk during the study? YES - NO
- 9. Can participants be identified by the study results or can the confidentiality of the participants' identity not be ensured? YES - NO
- 10. Are there any other possible ethical issues with regard to this study? YES - NO

If you have answered 'YES' to any of the previous questions, please indicate below why this issue is unavoidable in this study.

What safeguards are taken to relieve possible adverse consequences of these issues (e.g., informing participants about the study afterwards, extra safety regulations, etc.).

Are there any unintended circumstances in the study that can cause harm or have negative (emotional) consequences to the participants? Indicate what possible circumstances this could be.

Please attach your informed consent form in Appendix I, if applicable.

Continue to part IV.

PART IV: SAMPLE

Where will you collect or obtain your data?

From the Wijkprofiel Dataset from the municipality of Rotterdam.

Note: indicate for separate data sources.

What is the (anticipated) size of your sample?

14 662

Note: indicate for separate data sources.

What is the size of the population from which you will sample?

644.618

Note: indicate for separate data sources.

Continue to part V.

Part V: Data storage and backup

Where and when will you store your data in the short term, after acquisition?

I will store them on my own personal laptop.

Note: indicate for separate data sources, for instance for paper-and pencil test data, and for digital data files.

Who is responsible for the immediate day-to-day management, storage and backup of the data arising from your research?

I am the only one responsible for this.

How (frequently) will you back-up your research data for short-term data security?

I will back it up every time i worked on the Dataset.
So around two times a week.

In case of collecting personal data how will you anonymize the data?

my data is already anonymized by the municipality.

Note: It is advisable to keep directly identifying personal details separated from the rest of the data. Personal details are then replaced by a key/ code. Only the code is part of the database with data and the list of respondents/research subjects is kept separate.

PART VI: SIGNATURE

Please note that it is your responsibility to follow the ethical guidelines in the conduct of your study. This includes providing information to participants about the study and ensuring confidentiality in storage and use of personal data. Treat participants respectfully, be on time at appointments, call participants when they have signed up for your study and fulfil promises made to participants.

Furthermore, it is your responsibility that data are authentic, of high quality and properly stored. The principle is always that the supervisor (or strictly speaking the Erasmus University Rotterdam) remains owner of the data, and that the student should therefore hand over all data to the supervisor.

Hereby I declare that the study will be conducted in accordance with the ethical guidelines of the Department of Public Administration and Sociology at Erasmus University Rotterdam. I have answered the questions truthfully.

Name student: Mo Zijlmans

Name (EUR) supervisor: Gijs Custers

Date: 20-03-2022

Date:



