

**Ethnic Diversity and Social Cohesion across Ethnic Groups in Rotterdam**

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### **Abstract**

This study examines the effects of neighbourhood ethnic diversity on the experiences of social cohesion for the different ethnic groups living in Rotterdam. While previous literature has demonstrated that higher levels of ethnic diversity generally lead to lower levels of social cohesion, this relationship had rarely been studied across different ethnic groups. This theoretical caveat was studied by applying linear regression analyses to the Neighbourhood Profile survey data (N=11739). It was found that native Rotterdam citizens and ethnic groups who arrived in the city relatively recently experienced equally strong, negative effects of ethnic diversity on their perceived levels of social cohesion. In contrast, traditional ethnic groups were generally found to only experience small negative effects, with certain ethnicities even seeing positive effects of ethnic diversity on their experience of social cohesion. This thesis thus demonstrates that while ethnic diversity often leads to more negative experiences of social cohesion, this is not a given. Future research should explore the ways in which ethnic diversity may positively contribute to inter-group interactions within neighbourhoods and cities.

*Keywords:* ethnic diversity; ethnic background; social cohesion; Rotterdam neighbourhoods

## Introduction

Over the past few decades, globalisation of movement has increased massively, making international migration more voluminous than ever (De Haas et al., 2019). This has led to a rapid diversification of national and urban communities, wherein new residents find themselves in a constant endeavour to fit themselves into their new cities and neighbourhoods of residence. The immigration of former colonial subjects after decolonisation, the attraction of guestworkers in the sixties and seventies, and more recently the introduction of the Schengen agreement and arrival of refugees have led to big changes in the ethnic composition of the Netherlands, and Rotterdam in particular. In 2015, Rotterdam officially became a majority-minority city, meaning that people of Dutch descent are now a numerical minority (Crul et al., 2019). The diversification of the city has long been the source of controversy and has led to policy designed to “control” this development, such as the Rotterdam Act of 2006 (Van Gent et al., 2018; Ouweland & Doff, 2013, p. 124). While the main goal of the act was argued to be to improve neighbourhoods’ liveability by “prohibiting jobless newcomers from moving into rental dwellings in areas considered particularly vulnerable” (p. 2338), in practice the act excluded deprived and non-native households from moving into certain designated neighbourhoods (Van Gent et al., 2018; Ouweland & Doff, 2013). This is just one example of how the city’s ethnic diversity has been at the centre of the public eye, as well as in the mind of the municipality’s governing bodies.

Academic research on the effects of ethnic diversity, conducted mostly in the United States and Western Europe, has pointed to both positive and negative effects of ethnic diversity at all levels of scale within these societies. On the one hand are authors such as Allport et al. (1954), who proposed their famed contact theory, arguing that more inter-ethnic interaction erodes differences between groups, thus increasing tolerance and solidarity (Laurence, 2011). On the other hand, conflict theory argues that the presence of ethnic out-

groups leads to higher feelings of perceived threat, resulting in higher levels of prejudice towards those groups (Blumer, 1958).

Besides these two main theories, the literature on the effects of increasing heterogeneity in societies and communities has led political scientists and sociologists to draw a myriad of both positive and negative conclusions. One of the main studied relationships within the field is that of ethnic diversity and social cohesion. Social cohesion is a highly debated concept, but one definition argues it is the “community’s capacity for collective action in pursuit of public goods, and the attitudes and expectations of trust that undergird this capacity” (Koopmans et al., 2014, p. 2; Schieffer & Van der Noll, 2016). Putnam (2007) was one of the first, and certainly the most well-known, to demonstrate how social cohesion within neighbourhoods may be affected by the local level of ethnic diversity. His constrict theorem, which argues that diversity leads to lower interaction both across and within ethnic groups in the United States, became widely discussed and researched. Most of the studies inspired by Putnam aimed to find out whether this relationship held across a variety of contexts, most notably within Western European countries and cities. In these contexts, varying levels of evidence were found, depending on one’s conceptualisation of cohesion and theoretical expectations regarding neighbourhood diversity effects on social cohesion. Studies like Koopmans and Schaeffer (2015) and Glas et al. (2021) attempted to find out how ethnic diversity affects levels of social cohesion amongst general populations. Some authors went further and demonstrated that diversity may have differing effects on the experience of cohesion across groups, particularly across ethnic groups (Koopmans et al., 2014; Putnam, 2007; Tolsma et al., 2009). These latter studies each found evidence showing that native groups respond more negatively to ethnic diversity than non-native ones. Gijsberts et al. (2012) separately analysed Dutch, Turkish, Moroccan, Surinamese and Antillean ethnic groups in the Netherlands, finding no significantly differing effects between these groups. As

will be argued in the theoretical framework, varying strands of theory would expect ethnic diversity to differently affect these ethnic groups. This surprising finding, thus, provided the main inspiration behind this thesis. Additionally, this thesis set out to include a wider variety of ethnic groups than have previously been studied. Rotterdam is home to a variety of more recent immigrant groups, such as recent labour migrants (for example, Poles) and asylum-seekers (for example, Syrians), who have become notable groups in the city (Engbersen et al., 2019). This thesis recognises that migration is and always has been part of Rotterdam's history, and thus believes that these groups are here to stay (De Haas et al., 2019). For this reason, it is important to study how these newer migrant groups settle into the city and experience life and social cohesion within their new neighbourhoods. These considerations led to the following research question:

*To what extent do differing levels of ethnic diversity in neighbourhoods in Rotterdam affect the perception of social cohesion for members of different ethnic groups?*

To answer the research question and test hypotheses, the paper will draw from Tajfel's (1981) social identity theory, which is largely based on the principles of Lazarsfeld and Merton's (1954) homophily proposition, as well as superdiversity theory as proposed by Vertovec (2007). Using this framework, it will be hypothesised that the variety of ethnic groups present in Rotterdam may react to neighbourhood diversity in different ways. Specifically, Dutch natives are expected to experience the largest drop in perceived social cohesion, followed by non-native ethnic groups who arrived relatively recently in the Netherlands, and lastly those non-native groups who have been in the Netherlands for several decades (Glas et al., 2019; McPherson et al., 2001). This argument will be elaborated on more thoroughly in the theoretical framework.

Building on the theory shortly outlined above, this thesis aims to contribute to currently existing knowledge in the following ways. Most importantly, it will study how

ethnic diversity affects perceptions of social cohesion for natives, as well as both older and newer migrant populations, within Rotterdam neighbourhoods. This knowledge could subsequently be used in other studies analysing social cohesion in different localities, and possibly even on a national level in the Netherlands and elsewhere. In addition, learning if and why certain groups experience lower or higher levels of cohesion may assist the development of local policymaking and governance in new ways. Findings could help municipal governments and local NGOs in their efforts to improve inter-group interaction within cities, and even housing corporations, which likely benefit off good relations in neighbourhoods.

The following sections will present, in order: a more in-depth exploration of the existing literature on neighbourhood diversity and social cohesion, after which this latter concept is conceptualised. Hereafter, ethnicity in Rotterdam will be discussed, after which hypotheses are formed. Methodology and data will be discussed, followed by the results and conclusion.

## **Theory**

### **Locating the Gap**

Over the past decade and a half, scholars in the social sciences have extensively researched the relationship between ethnic diversity and social cohesion. This interest was sparked by Putnam's (2007) seminal study, which found that in ethnically diverse neighbourhoods, both intra- and inter-ethnic social cohesion were reduced. The author claimed that people, in the presence of higher levels of ethnic diversity within their neighbourhoods, tend to "hunker down", meaning they spend less time interacting with neighbours, leading to lower levels of social capital and social cohesion (Putnam, 2007, p. 149). This argument, which became known as the constrict theorem, sparked widespread public and academic debates and led to the publication of a multitude of follow-up papers and

further research. These predominantly studied how the theorem holds in different contexts and localities outside of the United States, as well as which mechanisms are at the basis of the hypothesised relationship between neighbourhood diversity and social cohesion (Schaeffer, 2013; Schaeffer, 2016). The following section will discuss the main findings of this body of literature and will subsequently locate the gap within this knowledge that has led to the specific research question studied in this thesis.

Different authors have found varying levels of proof regarding neighbourhood diversity effects in the European and Dutch settings. Gijsberts et al. (2012) tested whether Putnam's (2007) 'hunkering down' hypothesis holds in the case of the Netherlands, studying the effect of neighbourhood diversity on social cohesion in the 50 largest cities of the country. For their study, they operationalise social cohesion through four different dimensions, finding only one of them to have a significant effect: "Putnam's hypothesis is thus not supported for trust, volunteering, and informal help. An important exception is the influence of ethnic diversity on neighbourhood contacts, which remain even after controlling for all manner of other characteristics" (Gijsberts et al, 2012, p. 7). Similarly, Koopmans and Schaeffer (2015), in their study of 55 German localities, test two different theories of diversity effects on social cohesion: traditional theories of in-group favouritism and out-group threat against theories of coordination problems and out-group fractionalisation. The authors find that the share of one's in-group is both significantly and positively related to neighbourhood cohesion, a conclusion which was expected by both sets of theories. In addition, Koopmans and Schaeffer (2015) find that it is not the size of out-groups but their diversity that is a strong negative predictor of neighbourhood cohesion, thus supporting the second set of theories on out-group fractionalisation.

Contrasting evidence was presented by Glas et al. (2021), in their multilevel study on the effects of ethnic diversity and out-group size on neighbourhood cohesion and fear of

crime in the Netherlands. They find that “both the level of diversity and the size of the out-group in a neighborhood are associated with lower cohesion levels” (Glas et al., 2021, p. 17). The studies presented thus far provide evidence of neighbourhood ethnic diversity effects on social cohesion. However, it does seem to matter in which way one operationalises social cohesion (Gijsberts et al., 2012), as well as which theoretical expectations one sets out to test (Glas et al., 2021; Koopmans and Schaeffer, 2015).

Not all authors find these negative diversity effects. Tolsma et al. (2009) claim that economic heterogeneity is a strong predictor for lower cohesion, but do not find a “consistent negative impact of ethnic heterogeneity on social cohesion” (p. 286) The same holds for Glas et al. (2019), who research the effects of neighbourhood diversity on cohesion and fear of crime. The authors conclude that “increases in diversity are unable to explain differences in neighbourhood cohesion” (p. 737).

Koopmans et al. (2014), in the German context, find that both natives and non-natives who moved to a more diverse area became more concerned about immigration. While they expected this effect for natives, they did not do so for non-native movers. The authors thus notice that “tensions between minority groups have thus far hardly been considered as a potential source of negative diversity effects” (p. 7). Putnam (2007), Glas et al. (2019), Tolsma et al. (2009) all to a certain degree analyse the differentiated effect of diversity across ethnic groups, but each compare a “native” or “white” category to a “non-native” or “non-white” category and fail to distinguish between different types of non-native ethnic groups. To my knowledge, Gijsberts et al. (2012) is one of the only studies to have done this, separately analysing Dutch, Turkish, Moroccan, Surinamese and Antillean groups. However, this study still did not include newer ethnic groups such as recent labour migrants and asylum-seekers. Indeed, the absence of studies which analyse these effects for a more



representative collection of ethnic groups remains pronounced, something this thesis means to address.

### **Conceptualising Social Cohesion**

As demonstrated above by authors such as Koopmans and Schaeffer (2015) and Gijsberts et al. (2012), it is important that the concept of social cohesion is conceptualised in a concise, practical manner. However, this is no easy task. Indeed, Schiefer and Van der Noll (2016) summarise the debate surrounding the concept and argue that “there is little agreement on what social cohesion precisely entails” (p. 580). Similarly, others have described social cohesion as a “quasi-concept”, while arguing that the vagueness of the concept is what makes it both adaptable and hard to pin down (Bernard, 1999, p. 2). Markus and Kitpitchenko (2007), writing their chapter on different conceptualisations of social cohesion, show that divergent definitions have been provided by a variety of publications, in both academic and policy-related fields. In their review, the authors argue that these different definitions have three main factors in common. First, most definitions include a kind of shared vision and universal values, perhaps even a shared identity amongst people. Second, membership of a group or community is deemed essential to social cohesion. Finally, communities and its members are ever-changing human beings, which means their relationships, and as a consequence, the social cohesion between them, is “a continuous and seemingly never-ending process of achieving social harmony” (Markus & Kitpitchenko, 2007, p. 25).

While the authors’ attempt at creating a more coherent and unified conceptualisation of social cohesion is commendable, they do fall into Bernard (1999) abovementioned trap of ending up with a vague and relatively hard to pin down concept. Further, it is relatively difficult to measure, as indicators for factors such as “shared identity” are not always widely available. As a working definition will be necessary for the purposes of this thesis, I have thus chosen to adopt the one proposed by Schiefer and Van der Noll (2016), who, in their

review of the literature, identify three essential dimensions of social cohesion: social relations, identification with the geographical unit, and orientation towards a common good. Three additional elements proposed in the literature, shared values, inequality and quality of life, are “rather determinants or consequences of social cohesion, but not constituting elements” (Schiefer & Van der Noll, 2016, p. 579). One of the reasons this conceptualization was selected for this thesis is because it was specifically created for the straight-forward measuring of the phenomenon, as data on social relations, identification with a geographical space and orientation towards a common goal is often available through city- or neighbourhood-level surveys. This allows the conceptualization to be used by both researchers and policymakers and thus makes it exceptionally suitable for systematic, cross-national and cross-communal comparisons. The authors sum up their definition as “a descriptive, multifaceted and gradual phenomenon attributed to a collective, indicating the quality of collective togetherness” (2016, p. 795).

## **Theoretical Framework**

### ***Ethnicity in Rotterdam***

As a port town, Rotterdam has historically been a city of high ethnic diversity. After the Second World War, however, this process accelerated quickly as a result of both decolonisation and labour migration (Van de Laar & Van der Schoor, 2019). The independence of Indonesia in the late forties led to the arrival of large numbers of both former Dutch settlers and Indonesians in the following decades (Jansen, 2006). The same is true for the Surinamese, most of whom settled in the Netherlands just prior to its independence in 1975 (Jennissen, 2013). Besides this post-colonial migration, the Netherlands started actively recruiting labour migrants from Turkey and Morocco in the fifties and sixties, whose stay would turn out to be more permanent than previously expected and hoped by the Dutch authorities (Van der Star et al., 2021). Further labour migration

occurred after the expansion of the EU in the early 2000's, with Eastern European migrants arriving from predominantly Poland, Romania and Bulgaria (Engbersen et al., 2019). Finally, asylum migration to Rotterdam increased sharply over the past years, following civil wars and political instability in the Middle East and parts of Africa, with the largest groups coming from Syria, Afghanistan, Somalia and Iran (Engbersen et al., 2019).

In its 2021 report on the patterns of settlement for recent immigrants in the Netherlands, the Netherlands Environmental Assessment Agency (PBL) makes a distinction between the “classic” immigration countries Morocco, Turkey, Suriname, Indonesia, Cape Verde and the Dutch Antilles, and “newer” immigration countries (or areas), like Middle and Eastern Europe and migrants with an asylum background (Van der Star et al., 2021). To build its hypotheses, this thesis will draw from this distinction.

### *Native versus non-native groups*

To answer the research question, a theoretical framework that accounts for differences between natives and non-natives, as well as between the “traditional” and “newer” non-native ethnic groups will have to be established. First, to distinguish between natives and the two migrant groups, the homophily principle and Social Identity Theory (SIT) will be used (Lazarsfeld & Merton, 1954; Tajfel, 1978). SIT is based on the homophily principle, defined by McPherson et al. (2001) as “the principle that a contact between similar people occurs at a higher rate than among dissimilar people” (p. 416). According to this principle, individuals may be similar in one or more characteristics or features. For the purpose of this study, the most relevant of these characteristics is ethnic homophily. The implication of this principle becomes clear when it is extrapolated from interaction between just two people to inter-group interaction, with similar people grouping together into larger communities. People find themselves connecting and identifying more with these resembling others, forming distinct social in-groups, with whom members come to strongly identify (McPherson et al., 2001).

This forms the basis of Tajfel's (1978) SIT. Tajfel defines one's social identity as "that part of an individual's self-concept which derives from his knowledge of his membership of a social group (or groups), together with the value and emotional significance attached to that membership" (p. 63). As a result, those not part of one's in-group belong to an out-group. For native Dutch citizens, both the traditional and newer migrant groups thus form out-groups in relation to their autochthonous in-group (Sniderman et al., 2004).

Glas et al. (2019) find it "reasonable to expect that diversity effects are contingent on ethnic background: for the native majority, more diversity translates to living with fewer co-ethnics. For minorities, the reverse holds true" (p. 738). The authors thus believe that ethnic diversity may differently affect natives and non-natives. This is echoed by Tolsma et al. (2009), whose argument is more specific, as they claim that differing diversity effects across ethnic groups may affect their experience of social cohesion. They base this expectation on changing in- and out-group sizes. Evidence that out-group size has an effect on people's perception of social cohesion within Dutch neighbourhoods is found by Glas et al. (2021), who state that "both the level of diversity and the size of the out-group in a neighborhood are associated with lower cohesion levels" (p. 17). Drawing from these findings, higher levels of ethnic diversity are expected to lead to lower perceived levels of social cohesion for native Rotterdam citizens than for either of the migrant groups.

*H1:* Higher levels of neighbourhood ethnic diversity are expected to lead to stronger negative effects on the experience of social cohesion for Rotterdam natives than for both non-native groups.

### ***Non-native versus non-native groups***

To predict the way classic and newer migrant groups compare with regards to their feelings of social cohesion in diverse settings, I will draw from two strains of literature: superdiversity theory and the previously discussed SIT. The first of these, superdiversity

theory, argues that people who have grown up or lived in highly diverse neighbourhoods for a long time are less likely to attribute strong meanings to ethnicity and other distinctive characteristics of diversity (Vertovec, 2007). The normalisation of diversity in such neighbourhoods is dubbed “commonplace diversity” (Wessendorf, 2014, p. 1). Many classic migrant groups have lived in such highly diverse neighbourhoods since their arrival in Rotterdam, between the 50s and the 80s (Entzinger, 2019). As a result of this fact, superdiversity theory would argue that traditional migrant groups are well-adapted to diverse environments and that their experience of social cohesion is unlikely to be strongly affected by diversity (Vertovec, 2007). While Albeda et al. (2018) do find that even in superdiverse neighbourhoods, boundaries are sometimes drawn along ethnic, class and religious lines, they show that these boundaries are often largely symbolic in nature and do not usually lead to polarised or segregated relationships between groups. As Wessendorf (2014) has shown, the daily interaction in superdiverse contexts blurs and constantly recreates boundaries. In other words, even if social identities and boundary-forming may still exist across ethnic lines, even within superdiverse neighbourhoods, such characteristics are less important to these older migrant groups (Vertovec, 2007; Wessendorf, 2014). Contrastingly, newer migrant groups, by definition, are moving into a city which they do not know and have not previously lived in, making them unlikely to be familiar with the different ethnic groups who now form their neighbours. Even in the case that members of these newer groups have previously lived in highly diverse settings before their arrival in Rotterdam, they still move into a city and neighbourhood which they are unfamiliar with, and which they have not adopted their social identities to (Tajfel, 1978). This makes it likely they are less comfortable with the diversity of their new setting than the traditional migrant groups living in these neighbourhoods. Following a combination of superdiversity theory and social identity theory, it can thus be expected that newer migrant groups are likely to experience larger diversity effects than

classic migrant groups when it comes to their perceived social cohesion. Based on this argument, *H2* is as follows:

*H2*: Higher levels of neighbourhood ethnic diversity are expected to lead to stronger negative effects on the experience of social cohesion for newer migrant groups than for classic migrant groups.

## **Methods and Data**

### **Description of data**

For the purpose of testing the hypotheses and thus finding an answer to the posed research question, this thesis will utilise quantitative methods, preferring such a strategy over more in-depth, qualitative data such as interviews or observations because of its higher generalising potential as well as the ability to conduct large-scale studies on a level of analysis like the city of Rotterdam. The data stems from the 2015 wave of the Rotterdam Neighbourhood Profile, or Wijkprofiel (Municipality of Rotterdam, 2016). In order to measure the neighbourhoods' social and physical state, the municipality conducts a biannual survey, the Wijkprofiel, across all 71 neighbourhoods of Rotterdam. The survey averages around 15,000 respondents per wave, which are collected through cluster sampling. People with migration backgrounds are deliberately oversampled to ensure representative outcomes for each ethnic group. The 2015 wave's response rate was 21,5%. This thesis will draw its dependent variable on perceived social cohesion from this survey's questions. In addition, administrative data, containing anonymised demographic information for each neighbourhood, was collected by the municipality's research department, and will be merged with the Wijkprofiel data. This demographic data will be used to draw the analysis' independent variables from, specifically respondents' ethnic backgrounds and neighbourhood diversity levels for both the individual-level independent variable *ethnicity* and the

neighbourhood-level independent variable *neighbourhood diversity*.

The dataset contains respondents of 20 different ethnicities. This study's theoretical framework proposes hypotheses for 10 of these groups. Natives were present as the reference group, while Middle and Eastern Europeans, Arabs and Sub-Saharan Africans represented the newer ethnic groups. Lastly, the Surinamese, Indonesian, Moroccan, Turkish, Cape Verdean and Antillean groups formed the traditional ethnic groups. The remaining groups were left out of the analysis, which corresponded to 1641 (11.3%) of the 14579 respondents, leaving N=12938. Of this number, 539 respondents (4.2%) had no recorded answers on any questions and eliminated as well. Further descriptive statistics can be found in Table 1.

**Table 1**

*Descriptive statistics*

	Frequency	Mean	SD.	Minimum	Maximum
Quality of social relations		3.35	.72	1	5
Geographical identification		3.60	.93	1	5
Neighbourhood diversity		.65	.17	0.195	0.860
Ethnicity					
Native	7369	.63			
Middle and East	393	.03			
European					
Arab	85	.01			
Sub-Saharan	183	.02			
African					
Surinamese	1145	.10			
Indonesian	467	.04			
Moroccan	456	.04			
Turkish	806	.07			
Cape Verdean	354	.03			
Antillean	481	.04			
Neighbourhood income (per thousand)		22.33	6.24	13.10	40.70

Sex					
Male	5406	.46			
Female	6334	.54			
Level of education		2.08	0.80	1	3
Age (years)		50.82	16.69	18	98
Length of residency (in months)		146.00	126.14	0	940

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Source: Wijkprofiel 2015 & municipal basic administration 2015. N = 11739.

### Individual-level variables

The operationalisation of the dependent variable on perceived social cohesion will draw from its conceptualisation based on Schiefer and Van der Noll's (2016) definition. Only the first two dimensions of their definition, 1) *quality of social relations*, and 2) *geographical identification*, were considered. The third dimension, orientation towards a common goal, was left out of the analysis for feasibility's sake, as well as the unavailability of questions which properly measure the concept.

To measure the first dimension, the following three Wijkprofiel questions were used:

1) The people in the neighbourhood barely know each other, 2) In this neighbourhood, different ethnic groups get along well, and 3) I feel at home with the people living in this neighbourhood. Respondents were asked to what extent they agreed with these three statements using a Likert scale, with the answers "Fully agree" "Agree" "Neither agree nor disagree", "Disagree" and "Fully disagree". These were coded in descending scale for the latter two questions. By contrast, the reverse was done for the first question, to account for its negative framing. For all three questions, a higher score thus refers to higher feelings of social cohesion. To assess whether or not these three variables could be combined into a single scale, an explorative factor analysis was conducted. One factor was found (Eigenvalue > 1), with all three variables presenting satisfactory communality values, as well as factor loadings, of above 0.2 and 0.4 respectively (Osborne et al., 2008). To measure the reliability



of the factor, its Cronbach's alpha was calculated and found to be 0.627. While acceptable, as any value under 0.6 is poor, the factor's Cronbach's alpha is not terribly high (Tavakol & Dennick, 2011). After the reliability check, the three questions were combined into a single variable, *quality of social relations*, which included respondents who had answered at least two of the three questions. This procedure led to 835 (6.7%) missing cases.

The second dimension, *geographical identification*, will be measured using the following question: Could you report how connected you feel with your neighbourhood? The answers for this question were "Very connected", "Connected", "A little connected", "Not connected" and "Not at all connected" and were also coded on a descending scale. The variable had 389 (3.1%) missing cases.

The individual-level independent variable, *ethnic background*, will be drawn from the administrative data provided by the Rotterdam municipality. The "classic" migrant groups as discussed in the PBL publication were included as distinct categories within this data, making them easy to measure: Surinamese, Indonesian, Moroccan, Turkish, Cape Verdean and Antillean. In contrast, not all newer migrant groups were individually and separately included within the dataset. However, these were often represented by a larger group within the data. The category "Middle and Eastern European" was taken to measure newer labour migrants, as it includes many Eastern European countries such as Poland, Romania, and Bulgaria. To capture refugee migration from the Middle East and Sub-Saharan Africa, "Arab" and "Sub-Saharan African" were used, respectively. Both the classic and newer migrant groups categories will be compared to the "native", white Rotterdam residents, present in the dataset as "Autochthonous".

Individual-level control variables, naturally, will have to be considered as well. First, *length of residency* will be controlled for, as Laurence and Bentley (2016) find that diversity effects would be larger for those who had remained living in a diversifying neighbourhood. A

single missing case was present for this variable.

Next, *age* will be controlled for. This variable is measured on a scale. The control for age seems especially important, as Sturgis et al. (2014) find that diversity effects on one's perception of social cohesion are "strongly moderated by the age of individual residents" (p. 1286). Age is expected to be a stronger predictor for the second dependent variable, *geographical identification*, than for the first. As with length of residency, age was recorded for all participants of the survey.

*Sex* will be measured using self-reported answers in the Wijkprofiel data. The two available answers for this question are "man" and "woman". Females were taken as the reference category. 23 respondents had to be eliminated from the sample (0.18%).

One's *level of education* will be taken into account and measured using the question: What is the highest level of education for which you gained a diploma? Here, answers range from "no diploma" to "university education". Cases were coded as "low education" if their highest level of education was pre-vocational secondary education or lower, "middle education" for those who finished higher levels of high school or vocational training, and "high education" for those with a degree in higher vocational education or university. Again, options are available for those who wish not to share this information, with 630 respondents eliminated from the analysis (4.9%).

Household income levels were considered as a control variable, but were left out of the analysis, as its inclusion would have led to a very large number of missing cases (2992, or 24.2%). The elimination of all aforementioned missing cases led to a final N of 11739.

### **Neighbourhood-level variables**

Regarding its neighbourhood-level variables, the main independent variable in this study is *neighbourhood diversity*. This variable was measured for each neighbourhood using the Herfindahl-Hirschman Index (HHI), a model which measures "the probability that two

individuals who are randomly chosen from a closed population belong to the same group” (Abascal & Baldassarri, 2015, p. 730). In this dataset, this figure was reversed, meaning that the higher the score in a certain neighbourhood, the larger its level of ethnic diversity. In addition, *neighbourhood income* will be used as a control variable, as authors such as Tolsma et al. (2009) have found that economic deprivation at the neighbourhood level may play a role in one’s perception of social cohesion. *Neighbourhood income* was measured by taking the average annual per capita income per neighbourhood and subsequently coded into four quartiles. The range of average neighbourhood incomes within the dataset spans from 13100 to 40700 per year, making for the following four groups: 13100-20000, 20001-26900, 26901-33800 and finally 33801-40700. Information for both neighbourhood-level variables was taken from Rotterdam’s administrative registry and were available for each respondent.

### **Analytical strategy**

To test the three proposed hypotheses, a multi-model multiple regression analysis was conducted using IBM SPSS, version 28. All three models were run twice, once each for both dependent variables, *quality of social relations* and *geographical identification*. The first model functions as a baseline, and simply analyses the effects of ethnic diversity on social cohesion within the neighbourhood, thus including the independent variable *neighbourhood diversity*. Additionally, the effects of one’s *ethnicity* were included in this model as well, leaving natives out as a reference group.

Model two adds all neighbourhood and individual-level control variables into its analysis: *neighbourhood income*, *length of residency*, *age*, *sex*, and *level of education*. This model was added to observe to what extent the control variables influence the effect the main independent variable, *neighbourhood diversity*, has on each of the two dependent variables.

Finally, model three consists of all previously mentioned independent and control variables, as well as the interaction effect of the independent variable *neighbourhood*

*diversity* and the different ethnic groups of interest. This final model thus tests the extent to which differentiated diversity effects exist for the three different hypothesized groups, testing *H1* and *H2*.

## Results

The results of the regression analysis for each of the three models will be discussed in this section, starting with the first dependent variable, *quality of social relations*. The results of for this variable are visible below in Table 2.

The first model had an  $R^2$ , or explained variance, of 0.059. Its main predictor variable *neighbourhood diversity* had a strong, negative effect, which was statistically significant ( $\beta = -1.052$ ;  $p. < 0.001$ ). Since the dependent variable's range lies from 1 to 5, an effect of this size is rather large. It means that in a situation of perfect heterogeneity, native Rotterdam citizens experience a 1.052 decrease in their quality of social relations compared to a situation of perfect homogeneity, on a scale of 1 to 5. Amongst the newer ethnic groups, only Middle and Eastern Europeans showed a significant effect, which was relatively weak, and negative ( $\beta = -0.168$ ;  $p. < 0.001$ ). This effect means that a Middle or Eastern European person in Rotterdam will experience a decrease in their quality of social relations of 0.168 in comparison to a native Rotterdam citizen. Lastly, all traditional migrant groups, besides Indonesians, were significant in their effects. The Surinamese ( $\beta = 0.094$ ), Moroccan ( $\beta = 0.137$ ), Cape Verdean ( $\beta = 0.146$ ) and Antillean ( $\beta = 0.135$ ) groups all had a  $p.$  smaller than 0.001, with Turks ( $\beta = 0.083$ ;  $p. < 0.01$ ) being just slightly less significant. Each of these groups had rather low, positive scores, meaning that members of these groups are expected to experience a higher quality of social relations than natives, albeit by a small amount.

In the second model, controls were added, which caused the  $R^2$  to rise slightly to 0.063. Again, *neighbourhood diversity* had a strong, significant negative effect on *quality of*

*social relations* ( $\beta = -0.893$ ;  $p. < 0.001$ ). However, this negative effect decreased somewhat after controlling for different individual and neighbourhood-based characteristics, which suggests that the effect *neighbourhood diversity* might be smaller than it appeared to be in the first model. Those ethnic groups that showed statistical significance in the first model, did so again in the second. Of the newer migrant groups, the effect for Middle and Eastern Europeans virtually stayed the same compared to the previous model ( $\beta = -0.165$ ;  $p. < 0.001$ ). All of the traditional groups, except for Indonesians, were statistically significant at the  $p. < 0.001$  level. Their coefficients generally increased, but only very slightly: Surinamese ( $\beta = 0.101$ ), Moroccan ( $\beta = 0.154$ ), Turkish ( $\beta = 0.105$ ), Cape Verdean ( $\beta = 0.156$ ) and Antillean ( $\beta = 0.145$ ). Of the control variables, only *neighbourhood income* ( $\beta = 0.052$ ;  $p. < 0.001$ ) and *sex* ( $\beta = -0.036$ ;  $p. < 0.01$ ) showed statistical significance. One's experience of the quality of their social relations thus increases slightly when living in higher income neighbourhoods and is generally marginally lower for males than for females.

The third and final model had an  $R^2$  of 0.066, which again rose slightly. For this model, the interaction effects between *neighbourhood diversity* and *ethnicity* are of primary interest. As a result of the inclusion of this interaction effect, the interpretation of the main independent variable, *neighbourhood diversity*, has changed somewhat. Instead of representing the effect of ethnic diversity on the dependent variable for the entire sample, this number now refers to the interaction effect of diversity and the native group of Rotterdam citizens. Its effect of  $\beta = -0.981$  ( $p. < 0.001$ ) means that the native group will experience a 0.981 drop in their quality of social relations (on a 1 to 5 scale) when the *neighbourhood diversity* variable shows a one-unit increase. Naturally, such a drastic change, from a perfectly homogenous to a perfectly heterogeneous world, is only possible in theory. However, this result does demonstrate that increased levels of ethnic diversity within

neighbourhoods strongly and negatively affect native Rotterdammers. Of the newer migrant groups, neither Arabs nor Middle and Eastern Europeans have a statistically significant result, meaning the effect of *neighbourhood diversity* on their experience of social relations does not differ from the native group. Sub-Saharan Africans, on the other hand, show a very strong, positive result ( $\beta = 1.059$ ;  $p. < 0.05$ ) indicating that in contexts of high diversity, their experience of social relations is 1.059 higher than that of natives, on a scale of 1 to 5. Amongst the classic migrant groups, the effects of *neighbourhood diversity* on Indonesians, Moroccans and Antilleans do not statistically differ from natives. In contrast, a significant difference was found for Surinamese, Turkish and Cape Verdean respondents. For the Surinamese, this difference was rather low, but positive ( $\beta = 0.356$ ;  $p. < 0.05$ ). Both Cape Verdeans ( $\beta = 1.064$ ;  $p. < 0.001$ ). and Turks ( $\beta = 0.979$ ;  $p. < 0.001$ ) show strongly positive results, meaning that when ethnic diversity is high, the quality of their social relations was a lot higher than that of natives. Finally, the control variables stayed essentially the same in comparison to the second model. The implications of these results will be discussed after the next section, which details the second dependent variable's results.

**Table 2**

*Regression analyses: Effect of Ethnic Diversity on Quality of Social Relations per Ethnic group in Rotterdam*

	Model 1	Model 2	Model 3
(Constant)	4.010*** (0.027)	3.772*** (0.056)	3.819*** (0.057)
Neighbourhood diversity	-1.052*** (0.042)	-0.893*** (0.050)	-0.981*** (0.055)
Ethnicity (ref. = native)			
Middle and Eastern Europe	-0.168*** (0.038)	-0.165*** (0.039)	-0.280 (0.188)

Arab	0.020 (0.082)	0.036 (0.082)	-0.254 (0.347)
Sub-Saharan	0.094 (0.024)	0.099 (0.056)	-0.676 (0.347)
Surinamese	0.094*** (0.024)	0.101*** (0.024)	-0.145 (0.123)
Indonesian	-0.021 (0.034)	-0.038 (0.034)	0.148 (0.136)
Moroccan	0.137*** (0.035)	0.154*** (0.036)	-0.285 (0.243)
Turkish	0.083** (0.027)	0.105*** (0.028)	-0.628*** (0.187)
Cape Verdean	0.146*** (0.041)	0.156*** (0.042)	-0.633 (0.265)
Antillean	0.135*** (0.035)	0.145*** (0.35)	-0.141 (0.192)
Neighbourhood income		0.052*** (0.010)	0.054*** (0.010)
Age		0.000 (0.000)	0.000 (0.000)
Sex (ref. = female)		-0.036** (0.013)	-0.035** (0.013)
Length of residency		0.000 (0.000)	0.000 (0.000)
Level of education		0.013 (0.009)	0.015 (0.009)
<u>Interactions (ref. = native)</u>			
HHI*Middle & Eastern			0.174 (0.262)
Europe			
HHI*Arab			0.439 (0.504)
HHI*Sub-Saharan African			1.059* (0.462)

HHI*Surinamese			0.356*
			(0.169)
HHI*Indonesian			-0.290
			(0.208)
HHI*Moroccan			0.595
			(0.316)
HHI*Turkish			0.979***
			(0.245)
HHI*Cape Verdean			1.064**
			(0.348)
HHI*Antillean			0.412
			(0.264)
<hr/>			
R <sup>2</sup>	0.059	0.063	0.066
N	11034	11034	11034
<hr/>			

Note: Standard Errors in Parentheses. \*\*\*p < 0.001, \*\*p < 0.01, \*p < 0.05

Turning to the second variable, *geographical identification*, Table 3 shows that the first model had an R<sup>2</sup> of 0.048. As was the case for the first dependent variable, *neighbourhood diversity* had a strong, negative effect ( $\beta = -0.795$ ;  $p. < 0.001$ ). Of the newer migrant groups, both the Arab ( $\beta = -0.260$ ;  $p. < 0.05$ ) and Middle and Eastern European ( $\beta = -0.225$ ;  $p. < 0.001$ ) groups showed a significant effect of *geographical identification* compared to natives, both of which were rather low and negative. Moroccans ( $\beta = 0.128$ ;  $p. < 0.01$ ) and Turks ( $\beta = -0.484$ ;  $p. < 0.001$ ) were the only groups to have statistically significant results amongst the traditional migrant groups. The Turkish here stand out, as their experience of *geographical identification* is by far the most negative out of all ethnic groups.

After the inclusion of the control variables with the second model, the R<sup>2</sup> had a relatively large increase to 0.066, meaning the controls were able to explain *geographical identification* rather well. The negative effect of *neighbourhood diversity* decreased



considerably ( $\beta = -0.421$ ;  $p. < 0.001$ ). The inclusion of control variables also meant that the Arab group no longer showed any significant difference from natives in their *geographical identification*. In this model, of the newer migrant groups, only the Middle and Eastern Europeans showed a significant effect, which was negative but rather low ( $\beta = -0.164$ ;  $p. < 0.001$ ). The traditional migrant groups were divided, with Moroccan ( $\beta = 0.226$ ;  $p. < 0.001$ ) and Surinamese ( $\beta = 0.077$ ;  $p. < 0.01$ ) respondents showing a low, positive effect of *geographical identification*. On the other hand, Turkish respondents experienced a negative effect ( $\beta = -0.367$ ;  $p. < 0.001$ ). The other groups did not differ significantly from the native respondents. As expected after observing the large increase in  $R^2$ , all control variables, except *length of residency*, had a significant effect. Males showed slightly less geographical identification than women ( $\beta = -0.038$ ;  $p. < 0.05$ ). In addition, with age, people tend to identify closer to their neighbourhood ( $\beta = 0.006$ ;  $p. < 0.001$ ). This effect seems small, but the age of respondents in the dataset ranges from 18 to 98. Elderly people are thus, on average, close to half a point more attached to their neighbourhood than teenagers, which, on a scale of 1 to 5, is a rather large effect. Further, *level of education* ( $\beta = 0.051$ ;  $p. < 0.001$ ) and *neighbourhood income* ( $\beta = 0.113$ ;  $p. < 0.001$ ) seem to have a low, but positive effects. Both highly educated respondents and those living in high-income neighbourhoods, thus generally identify more closely with their neighbourhood than respondents who do not have these characteristics.

The final model again had a slightly higher explained variance, with an  $R^2$  of 0.068. With the inclusion of interaction effects, the coefficient for *neighbourhood diversity* should be interpreted as the interaction effect of diversity and the native group ( $\beta = -0.501$ ;  $p. < 0.001$ ). This outcome thus shows that native respondents, in contexts of high diversity,

generally experience lower levels of *geographical identification* than in contexts which are more homogenous. Finally, the interaction effects of *neighbourhood diversity* and *ethnicity* were insignificant for each of the three new migrant groups, which signifies that ethnic diversity affects the experienced levels of *geographical identification* of these groups in similar ways to natives. The same is true for most of the traditional migrant groups. Only the Turkish ( $\beta = 0.757$ ;  $p. < 0.05$ ) and Cape Verdean ( $\beta = 1.1221$ ;  $p. < 0.01$ ) respondents showed a significant difference from natives, which, in both cases, was highly positive. In more ethnically diverse neighbourhoods, these groups thus experienced much greater geographical identification than autochthonous Rotterdam citizens. Lastly, the control variables showed virtually no change compared to the second model.

The first hypothesis expected that the native population experiences lower levels of social cohesion in contexts of high diversity than both non-native ethnic groups. Regarding the traditional ethnic groups, this hypothesis mostly found support, as they reacted more positively to diversity than natives in roughly half of the cases. However, no support was found for the other half of this hypothesis, as natives and newer ethnic groups in Rotterdam experienced largely similar diversity effects regarding their perceived levels of social cohesion. Overall, the first hypothesis was thus only partially supported.

The described similarity between natives and newer ethnic groups did mean that the second hypothesis, which predicted that in highly diverse neighbourhoods, newer migrant groups will experience lower levels of social cohesion than traditional migrant groups, was more strongly supported. As traditional migrant groups experienced higher social cohesion than both natives and newer migrant groups, this hypothesis thus was largely found to be true.

**Table 3**

*Regression analyses: Effect of Ethnic Diversity on Geographical Identification per Ethnic group in Rotterdam*

	Model 1	Model 2	Model 3
(Constant)	4.155*** (0.034)	3.275*** (0.071)	3.318*** (0.073)
Neighbourhood diversity	-0.795*** (0.054)	-0.421*** (0.064)	-0.501*** (0.070)
Ethnicity (ref. = native)			
Middle and Eastern Europe	-0.225*** (0.049)	-0.164*** (0.049)	-0.224 (0.238)
Arab	-0.260* (0.102)	-0.189 (0.101)	-0.916* (0.459)
Sub-Saharan	-0.072 (0.072)	0.027 (0.072)	-0.641 (0.431)
Surinamese	0.031 (0.030)	0.077** (0.030)	-0.168 (0.155)
Indonesian	-0.051 (0.044)	-0.082 (0.043)	-0.040 (0.173)
Moroccan	0.128** (0.045)	0.226*** (0.046)	-0.041 (0.314)
Turkish	-0.484*** (0.035)	-0.367*** (0.036)	-0.931*** (0.238)
Cape Verdean	0.008 (0.052)	0.081 (0.052)	-0.830* (0.341)
Antillean	-0.070 (0.044)	0.009 (0.044)	-0.003 (0.239)
Neighbourhood income		0.113*** (0.012)	0.115*** (0.012)
Age		0.006*** (0.001)	0.006*** (0.001)
Sex (ref. = female)		-0.038*	-0.039*

		(0.017)	(0.017)
Length of residency	0.000		0.000
		(0.000)	(0.000)
Level of education	0.051***		0.053***
		(0.012)	(0.012)
<u>Interactions (ref. = native)</u>			
HHI*Middle & Eastern			0.097
Europe			(0.332)
HHI*Arab			1.069
			(0.654)
HHI*Sub-Saharan African			0.916
			(0.575)
HHI*Surinamese			0.353
			(0.214)
HHI*Indonesian			-0.065
			(0.264)
HHI*Moroccan			0.368
			(0.408)
HHI*Turkish			0.757*
			(0.312)
HHI*Cape Verdean			1.221**
			(0.446)
HHI*Antillean			0.030
			(0.328)
<hr/>			
R <sup>2</sup>	0.048	0.066	0.068
N	11445	11445	11445

Note: Standard Errors in Parentheses. \*\*\*p < 0.001, \*\*p < 0.01, \*p < 0.05

### Conclusion

The research question studied in this thesis was the following: *To what extent do differing levels of ethnic diversity in neighbourhoods in Rotterdam affect the perception of social cohesion for members of different ethnic groups?* Ten different ethnic groups were

considered, divided up into three main categories. The first category was the native one, with Rotterdam citizens of Dutch descent. The remaining two categories were non-native migrant groups, as divided by the PBL (Van der Star et al., 2021): the “traditional” migrant group consisted of people of Indonesian, Surinamese, Antillean, Turkish, Moroccan and Cape Verdean descent, while Arabs, Eastern Europeans and Sub-Saharan Africans together formed the “newer” ethnic group. To devise expectations, superdiversity theory and social identity theory were used. Specifically, two hypotheses were formed. First, high levels of neighbourhood ethnic diversity was expected to influence the experience of social cohesion more negatively for natives than for both non-native ethnic groups. Second, ethnic diversity effects were expected to affect social cohesion more negatively for newer ethnic groups than for traditional ones. The conducted linear regression analyses showed that the first hypothesis was only partially supported, as very little difference was found between the native and newer ethnic groups. Traditional ethnic groups, however, were not as negatively affected by diversity as either of these groups. This shows strong support for the second hypothesis.

The results were surprising in several ways. First, newer ethnic groups were equally as likely to experience diversity in a negative way as native Rotterdam citizens. One possible explanation for this finding is that, while many of these groups are part of ethnic minorities within Rotterdam and even live in highly diverse neighbourhoods, they are not necessarily well-adapted to life in such contexts. This may be because they have not experienced high levels of diversity while growing up, but may also simply be a result of newer groups considering themselves outsiders within their new home societies.

Second, looking more closely at the results of the analyses reveals that the Turkish and Cape Verdean ethnic groups seemed to respond highly positively to life in ethnically diverse neighbourhoods. With regards to the Turkish, this could be because they are less likely to identify as Dutch than, for example, Moroccans, and are also more likely to identify

with their country of origin (Huijnk et al., 2015). Turks may thus prefer living amongst non-Dutch ethnic groups, and as neighbourhoods of high ethnic diversity often house relatively few native Dutch citizens, they might feel more comfortable in these contexts. In addition, Turks, as well as Cape Verdeans, are particularly well-organised compared to other migrant groups in the Netherlands (Huijnk et al., 2015; Slingerland & Saptari, 2012). This strong internal organisation may have provided Turkish and Cape Verdean people with stronger safety nets and more confident social identities than other traditional migrant groups.

According to social identity theory, which argues that group members are more likely to focus on the positive attributes of their in-group than the negative attributes of surrounding out-groups, this may explain why Turks and Cape Verdeans are positively by higher ethnic diversity, in contrast to all other ethnic groups in the analysis (Tajfel, 1978).

The current thesis, like all academic work, has a few limitations. First, the ethnic categories as present in the Wijkprofiel data often do not accurately measure certain nationalities. For example, Middle and Eastern European people are grouped together into one category, as are Arabs. It can be argued that nationalities which were grouped together are in close geographical and cultural proximity to one another and may thus very possibly resemble each other. However, this does not necessarily mean that these different national groups would respond to diversity the same way.

Second, this thesis' selection of ethnic groups, while more representative of Rotterdam's diverse society than previous studies, is not comprehensive by any means. For example, many European and Asian nationalities were left out of the analysis. This was done for feasibility's sake, but also because these groups are rarely problematised by political and societal actors within Rotterdam and the Netherlands (Hoekstra, 2015). For example, even if considerable Southern European populations live in Rotterdam, their relative success makes that they remain largely overlooked (Lindo, 2000). Future research may thus benefit from

including a wider variety of ethnic groups into its analysis.

In addition, research has shown that relative changes in ethnic diversity may have larger effects on experiences of social cohesion than absolute numbers (Laurence & Bentley, 2016). For this reason, this thesis may have benefitted from a more longitudinal approach.

Finally, this study used quantitative methods, which allowed for greater generalisability and the ability to process a lot of information with relative ease. However, this chosen method also has its disadvantages. Most importantly, while general trends can be discerned per ethnic group, it does not offer any further information regarding the reasons certain ethnic groups feel one way or another. In other words, this thesis shows how people feel, but not why they do so. The explanations provided above are merely speculative, and while theoretically informed, it is certainly possible they have missed something, or even were entirely wrong.

Several of these shortcomings can rather easily be avoided or solved by conducting additional research. First, future authors may aim to include a wider variety of ethnic groups into their analyses of Rotterdam, to gain an even more representative image. In addition, the usage of longitudinal data would likely provide more detailed answers. Finally, my main recommendation for future research is for authors to go more in-depth by adopting qualitative research approaches, such as interviews, observations, and focus groups. This thesis points to two main groups of interest, which particularly stood out as a result of their largely positive reaction to diversity: Turks and Cape Verdeans. Indeed, large bodies of literature describe reasons why ethnic diversity negatively affects inter-group interactions. It may thus be incredibly valuable to learn more about these two groups, and the ways in which ethnic diversity can be a source of positivity.

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## 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](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: Ethnic Diversity and Social Cohesion across Ethnic Groups in Rotterdam

Name, email of student: Beer van Duuren, 626369bd@eur.nl

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

Start date and duration: January – June

Is the research study conducted within DPAS

YES

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

*If 'NO': skip to part V.*

- If 'YES': does the study involve medical or physical research? 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. NO

*If 'YES': skip to part IV.*

3. Research involving completely anonymous data files (secondary data that has been anonymized by someone else). YES

*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.

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

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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.

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*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?

The Wijkprofieldata, as well as the administrative demographic data, was previously collected by the municipality of Rotterdam and provided to me by my thesis supervisor, Dr. Gijs Custers.

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*Note: indicate for separate data sources.*

What is the (anticipated) size of your sample?

14579 respondents for the Wijkprofiel, and administrative data for each of the participants

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*Note: indicate for separate data sources.*

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

The sample was drawn from the population of Rotterdam, so around 600.000 people.

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*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?

On my personal laptop and external hard disk.

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*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?

Me.

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

After every use, ensuring it remains safely stored on my laptop or hard drive.

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

I will not collect personal data.

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*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: Beer van Duuren

Name (EUR) supervisor: Dr. Custers

Date: 19 June 2022

Date:

A handwritten signature in black ink, appearing to read 'Beer van Duuren', written in a cursive style.