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Conditional neighbourhood effects on residents' socio-economic status

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INTRODUCTION

Location, location, location. The real estate motto conveys the idea that place matters: neighbourhoods vary widely in what they offer their residents in everyday life. In choosing a place to live, people consider a wide range of these varying features: proximity to work, the quality of schools, easy access to freeways and public transport, affordability of homes, nearby parks, and the people already living in that neighbourhood. The neighbourhoods that individuals reside in thus often say quite a lot about their lives but even more about their financial possibilities and constraints: some people can afford to buy a house in upscale neighbourhoods while others are dependent on social housing in less affluent areas.

Governments are generally concerned with these disparities in individual neighbourhood contexts. While it is evident that preferences, resources and needs draw individuals to certain neighbourhoods, policymakers also believe that more affluent places offer more opportunities and, vice versa, that living in neighbourhoods with concentrated disadvantage reduces residents' chances in life. This concern is reflected in policies aimed at socio-economic mixing of neighbourhoods in European cities (Atkinson and Kintrea, 2001) and in housing mobility programmes such as Moving to Opportunity in the United States (Goetz, 2002). In the former, the focal point is to maintain and attract middle and higher income classes in neighbourhoods as they are expected to be beneficial for the labour prospects of less advantaged residents. In the latter, poor residents could move out of deprived neighbourhoods into a better-off area which is assumed to improve their economic prospects.

These beliefs are backed up by an ever-growing field in academia: the premise that the neighbourhood of residence is an important indicator of an individual's socio-economic status has been thoroughly investigated by scholars in both Europe and the United States. Two strands of work coexist in this tradition. In the first, there are scholars who focus on the drivers of residential segregation. The sorting of individuals by socio-economic status across neighbourhoods, depen-

dent on the affordability and availability of desired dwellings, leads to spatial patterns of concentrated affluence and poverty.

In the other research tradition, scholars examine neighbourhood effects, which deal with the effects of these spatial patterns of segregation on individual outcomes. Socio-economic segregation and the accumulation of disadvantage in certain neighbourhoods can result in a reproduction and concentration of socio-economic inequalities that have an impact on socio-economic outcomes of residents over and above the effect of individual characteristics. In sum, the place of residence both *reflects* and *affects* an individual's socio-economic position in society (Lee et al., 2015).

This dissertation falls under the second tradition: it studies whether residents are affected by their neighbourhood of residence over and above their individual characteristics. In particular, this study goes beyond the long-standing common practice in the neighbourhood effects field of assessing unconditional neighbourhood effects under the implicit assumption that neighbourhood effects are homogeneous across subpopulations (Small and Feldman, 2012). Most social scientists would dismiss these homogeneous effects as theoretically implausible; neighbourhood effects are likely to be contingent on several individual features (Winship and Elwert, 2010). It is more realistic to acknowledge variation in the impact of the neighbourhood on its residents' socio-economic status and to explicitly conceptualise and empirically model this underlying heterogeneity in assessing neighbourhood effects.

Yet this is hardly taken up in the literature. There is a lack of studies that develop both a theoretical and methodological framework to model and test the conditionality of neighbourhood effects. This dissertation aims to better understand, identify and accommodate the heterogeneity of neighbourhood effects. Individuals differ in their characteristics (e.g. social embeddedness in the neighbourhood, their residential history, their household configuration, and relocation destination choices) and consequently, they have differential responses to residing in certain neighbourhoods. Integrating this heterogeneity of exposure is key to understanding the scope and persistence of neighbourhood effects over an individual's life course. Furthermore, taking into account that neighbourhood effects may not apply to all strata of the population sheds new light on the mechanisms through which the neighbourhood is assumed to affect individual life opportunities.

In sum, this study will contribute to a better explanation of the economic mobility of residents in a neighbourhood setting by integrating a variety of crucial pathways which are hypothesised to condition the impact of the neighbourhood. This responds to the increasing call for incorporating conditional effects in the literature (e.g Small and Feldman, 2012; Sharkey and Faber, 2014).

The relevance of such a framework goes beyond the academic debate: knowledge and evidence on differential impacts are an essential building block for policymakers who aim to implement neighbourhood interventions most beneficial to its residents. Assuming substantial and equal impacts on labour market outcomes for all residents is problematic and more fine-grained strategies that acknowledge the variation in the impact of residential neighbourhoods and policy interventions are needed. Place-based urban renewal strategies and anti-poverty dispersal programmes are particularly costly programmes that impact the lives of many residents, for instance when they need to move out or experience a considerable change in the neighbourhood's composition. Not all individuals are likely to be affected to the same extent by their neighbourhood and more knowledge on the patterns of effect heterogeneity — and identification of the individual characteristics behind this variation — can result in more effective policy measures (Xie et al., 2012). In other words, knowing the source of neighbourhood effect heterogeneity enables policymakers to make better-informed decisions in allocating their interventions and to augment the effectiveness for targeted populations.

THE FIELD STUDYING NEIGHBOURHOOD EFFECTS

Neighbourhood effect studies on residents' socio-economic outcomes adopt a structural explanation of poverty, locating the origin of individual disadvantages in societal structures rather than within individuals. In his classic book *The Truly Disadvantaged* (1987), William J. Wilson — seen by many as the most influential pioneer in the neighbourhood effects research field — introduces his structural explanation by arguing that the situation of disadvantaged residents in impoverished neighbourhoods in the United States stems from the restructurings of the American economy in the 1970s and 1980s. This macro-structural societal change resulted in middle-class and skilled

working-class residents — who potentially functioned as role models for the underclass — moving out of the inner cities, leaving the disadvantaged residents behind in social isolation.

Consequently, these disadvantaged residents were set even further apart from the occupational structure, resulting in a lack of access to mainstream societal attitudes and conventional role models which in turn restricted their potential for upward socio-economic mobility. The local concentration of people without economic prospects reinforced the residents' disadvantaged position in society (Wilson, 1987, 1996).

This perspective on social isolation and concentration effects on social and occupational mobility has brought forth a stream of literature on neighbourhood effects which has a broader scope of conditions and outcomes. Alongside studies on how residents are socio-economically affected by their neighbourhood of residence, effects of the residential neighbourhood on educational achievement, sexual activity and teenage pregnancy, deviant behaviour, school dropout rates, crime rates and health outcomes have also been identified (for an overview, see Ellen and Turner, 1997). The present study is confined to the socio-economic consequences of residing in certain neighbourhoods.

In the neighbourhood effects literature, the socio-economic mobility of residents therefore has an important spatial and structural dimension. Residents' poor employment perspectives can be explained by the fact that residents of deprived areas do not easily have access to local opportunity structures (Maxwell, 1993). This encompasses more than the local labour market and the accompanying spatial mismatch theories: the interrelationships within the neighbourhoods, local social networks and social interactions are bound to influence the behaviours and motivations of individual residents (Wilson, 1987; Galster and Killen, 1995).

This spatial and structural approach acknowledges that individual life transitions and decisions are embedded in different structures over time (Huinink and Feldhaus, 2009). The constraints, opportunities and resources that individuals encounter are thus not only explained by the societal context (institutions and political and economic conditions) and the individual level (individual resources and internal conditions), but also by the meso-level: the social context and social networks, in which neighbourhoods and families play an im-

portant role, can alter the motivations and opportunity structure for individuals. Residence in an affluent neighbourhood is hypothesised to be positively associated with better economic prospects than residing in impoverished areas with concentrations of disadvantage; the prospects of neighbours are presumed to be interdependent ('linked lives', Elder 1994).

MECHANISMS TO EXPLAIN NEIGHBOURHOOD EFFECTS

In the aforementioned processes of social isolation and local opportunity structures, the impact of the residential area transpires, to a great extent, through social interaction in the area. Here one can recognise social network and socialisation mechanisms. While the social network mechanism relates to the support, information and resources available from social contacts in the neighbourhood (the opportunity structures) (Coleman, 1988; Granovetter, 1995; Lin, 1999; Lin et al., 2001), the socialisation mechanism refers to a social learning process in which individuals conform to work ethics disseminated by potential role models in the neighbourhood (de Souza Briggs, 1997; Galster et al., 1999; Andersson, 2001). Both pathways fall under the banner of the social-interactive mechanism, which also includes processes such as social cohesion, social control, competition, and relative deprivation (Galster, 2012). Other proposed mechanisms behind neighbourhood effects are environmental mechanisms (exposure to violence, physical conditions of surroundings and buildings, and levels of pollutants), geographical mechanisms (spatial mismatch, proximity to jobs and public services) and institutional mechanisms (local public institutions, stigmatisation, and local markets) (Galster, 2012).

Although the mechanisms through which neighbourhood effects on socio-economic outcomes are transmitted often remain a black box in empirical models, the social-interactive mechanisms are coined as the "core of the neighbourhood effects argument" (van Ham et al., 2012, p. 9). Drawing upon the seminal work of William J. Wilson (1987) and his notions of social isolation and concentrations of disadvantage, the vast majority of neighbourhood effects studies on socio-economic outcomes has predominantly proposed social networks and socialisation as the main mechanisms (e.g. Andersson, 2001; Friedrichs et al., 2003; Leventhal and Brooks-Gunn, 2000; Andersson and Mus-

terd, 2005). Yet, despite the dominance of the social-interactive mechanism, the influence of environmental, geographical, and institutional mechanisms cannot be ruled out. Residing in neighbourhoods with a greater incidence of crime, a lack of available jobs, and insufficient public services and institutions might also have a detrimental impact on work aspirations (Hedman et al., 2015).

It should be noted, however, that place-based urban renewal strategies and anti-poverty dispersal programmes are predominantly about preventing concentrations of disadvantage. The logic of socialisation and social networks is at the core of these policies. While residents in a more upscale neighbourhood are assumed to be exposed to a more resourceful, work-oriented climate, that enhances its residents' economic well-being (de Souza Briggs, 1997, p. 217), a relative absence of job information and prevalence of deviant work ethics of residents in neighbourhoods with concentrations of poverty is hypothesised to hamper the socio-economic opportunities of its residents (Galster et al., 1999). This suggests that even outside the academic debate neighbourhood-specific social interactions are seen as the primary causal pathway behind neighbourhood effects. Both European and American neighbourhood interventions aim to change the spatial distribution of disadvantaged residents to avoid negative socialisation and to enhance the quality of neighbour networks. In Europe, the implicit belief among policymakers is that diversification of the neighbourhood population results in the influx of adequate role models and network resources, which is often established through area-based urban restructuring programmes. In the United States, moving poor people out to low-poverty neighbourhoods is believed to improve the social networks and role models for those residents (Andersson and Musterd, 2005).

In sum, policymakers often justify neighbourhood interventions by pointing at the benefits for disadvantaged residents, either by an inflow of more affluent new neighbours (positive role models and potential job information) or by the opportunity to move to a more affluent neighbourhood. Social interaction could thus induce neighbourhood effects and either limit or enhance economic opportunities. In that sense, it is important to note that neighbourhood effects "are not restricted to poor neighbourhoods but can be expected to be a more general social phenomenon." (Andersson and Musterd, 2005, p. 381) While the premise that the neighbourhood can influence its residents'

work aspirations and enhance employment opportunities originates from the United States — and has been topic of many American scholarly studies for many decades — this has also crossed the Atlantic. Although this stream of literature commenced later, by now, many European studies aim to confirm empirically that the neighbourhood influences individual socio-economic outcomes (e.g. Andersson et al., 2007; van Ham and Manley, 2010). In the Netherlands, however, only very modest neighbourhood effects on residents' economic chances in life have been found (Musterd et al., 2003; van der Klaauw and van Ours, 2003).

A DIFFERENT PLACE TO DIFFERENT PEOPLE

Most scholars seem to agree on the wide range of potential mechanisms behind neighbourhood effects as outlined above (Galster, 2012). It is, however, unlikely that these mechanisms pertain to all residents of a neighbourhood to the same extent (Tienda, 1990; Ellen and Turner, 1997). Many neighbourhood effect studies have followed a strict interpretation of early literature on disadvantaged communities in the United States, where the neighbourhood effects were seen as homogeneous across residents and neighbourhoods (Small and Feldman, 2012). This has resulted in a dominance of a "dichotomous perspective" in the neighbourhood effects field: either neighbourhoods matter or they don't (Sharkey and Faber, 2014, p. 560).

Increasingly, scholars are starting to dispute this dominant one-size-fits-all discourse in neighbourhood effects studies and are proposing the idea of effect heterogeneity - namely, that the residential area is likely to affect the socio-economic status of some people more than others (Tienda, 1990; Ellen and Turner, 1997; de Souza Briggs, 1997; Buck, 2001; Lupton, 2003; Galster, 2008; Small and Feldman, 2012; Sharkey and Faber, 2014). Nevertheless, most quantitative neighbourhood effect studies have completely overlooked the complexity of the social processes and events in residents' lives and restricted themselves to assessing average main effects. This is striking, especially given the fact that the neighbourhood effects found in European studies are often small. It could well be that these studies have misspecified and underestimated the scope and continual exposure of neighbourhood effects for certain substrata in the population.

As this conditional question is neglected in most empirical studies, Small and Feldman (2012, p. 64) herald a “call for models in which researchers better theorize and then test explicitly the presence of heterogeneity in the effects of neighbourhood conditions across sub-populations.” The incorporation of neighbourhood effect heterogeneity could reveal hidden pathways and assist scholars by building and strengthening their theories and models.

Considering the dominance of the socialisation and social networks mechanisms in the neighbourhood effects field, one should acknowledge the fact that the relevance of the neighbourhood as a social context differs for different types of residents, who engage differently in formal and informal social structures in the neighbourhood (Musterd and Pinkster, 2009, p. 56). Neighbourhood effects are thus likely to be contingent on several individual features related to social interaction in the neighbourhood. The core of this dissertation is to conceptualise and assess this underlying heterogeneity based on a resident’s neighbourhood involvement in order to estimate neighbourhood effects. Essentially, residents’ social embeddedness in a neighbourhood conditions the way they are affected by it. Residents are more strongly embedded in their neighbourhood — and more likely to be affected by it — when their social life takes place primarily within that neighbourhood, when they have lived there for a longer period of time, and when they do not move.

In this dissertation I test four crucial pathways that are hypothesised to condition the impact of the neighbourhood on its residents’ socio-economic outcomes in light of the social-interactive mechanisms: residents’ social contacts and interactions in the current neighbourhood of residence (*chapter 2*), individuals’ residential histories (number of moves, time elapsed since moving out, length of residence) (*chapter 3*), residents’ different household configurations over the life course (*chapter 4*) and residents’ relocation destinations after urban renewal interventions (*chapter 5*). The goal is to scrutinise how the conventional unconditional models testing neighbourhood effects bias the estimation of neighbourhood effects. From a scholarly perspective, evidence pointing to effect heterogeneity might explain why neighbourhood effects studies are inconclusive, as aggregated, direct measures instead of conditional ones might, in the words of Galster et al. (2010, p.2936) “obscure and minimise the true effects.”

This dissertation disputes this one-size-fits-all-approach that has been dominating the field and puts to the test the idea of neighbourhood effect heterogeneity with regard to neighbourhood involvement. This results in the following overarching research question:

RESEARCH QUESTION

To what extent is the impact of the level of deprivation in the neighbourhood of residence on residents' socio-economic outcomes conditional upon:

- (a) neighbourhood-specific social contacts and interactions,
- (b) residential histories (number of moves, time elapsed since moving out, length of residence),
- (c) household configurations, and
- (d) relocation destinations after urban renewal?

RESEARCH APPROACH

The four conditions under study are theoretically and methodologically complementary. Theoretically, they follow from the same premise: a resident's neighbourhood involvement affects the strength of the association between neighbourhood characteristics and socio-economic outcomes. Additionally, a resident's social contacts and interactions in the current neighbourhood of residence, residential histories, different household configurations over the life course and relocation destinations are interrelated with the level of neighbourhood involvement. This interrelatedness emphasises the theoretical need to study the four modifiers as proposed. I will control for other potential modifiers (for instance age, ethnicity) as rivalling explanations in the multivariate analyses.

Methodologically, the four aims lead to different designs to test neighbourhood effect heterogeneity and the presence of underlying mechanisms. To account for the differential social embeddedness of residents in different neighbourhoods, I apply a multi-level analysis employing cross-sectional survey data including detailed information on neighbourhood-specific interactions and contacts (*chapter 2*). To allow for the variety of individual residential histories in studying

neighbourhood effects, cross-classified multi-level models on longitudinal administrative register data (residents nested in current and former neighbourhoods) are employed (*chapter 3*). The heterogeneity of neighbourhood effects for different household configurations over their life course is studied by employing an event history analysis that captures the dynamics of labour market and life course transitions (using longitudinal administrative register data) (*chapter 4*). The impact of the neighbourhood regarding residents' different relocation destinations is studied linking housing association data on dwellings targeted for urban renewal and other social housing dwellings to the longitudinal individual-level population registry database. The differential treatment effects of forced relocation are studied by a difference-in-difference design with matching (*chapter 5*).

By focusing on modifiers rather than on direct effects this dissertation aims to open up the causal black box to disentangle the supposed mechanisms. These modifiers have never been investigated in one systematic comprehensive study.

The Netherlands offers an excellent case in which to study conditional neighbourhood effects. From a comparative perspective, the Netherlands serves as a least likely case: if conditional neighbourhood effects are to be found here, it is very likely that these mechanisms work elsewhere. Neighbourhood effects are likely to be more constrained in the Netherlands for several reasons. First, when it comes to socio-economic status, Dutch residential neighbourhoods are less strongly segregated and are rather heterogeneous, particularly compared to the United States. This difference is due to ubiquitous social housing and urban renewal strategies in disadvantaged neighbourhoods (de Vries, 2005; Musterd et al., 2006). Consequently, neighbourhood-specific social embeddedness, residential histories and household configurations that are represented within and across neighbourhoods — and potential relocation destinations — are more varied. In addition, given higher welfare state expenditure in the Netherlands and the fact that income distribution in the Netherlands is relatively egalitarian, neighbourhood effects are likely to be smaller. To the extent that this dissertation finds that the impact of the neighbourhood tends to be conditional upon individual features, this effect heterogeneity is thus likely to be smaller in the Dutch case than in less egalitarian countries.

In studying neighbourhood effects in the Netherlands, I rely on high-quality survey data and the Dutch Social Statistical Database of Statistics Netherlands. The first has detailed information on socio-economic characteristics, demographic factors, and social interactions within neighbourhoods. The latter offers unique longitudinal individual-level population data and consists of, inter alia, administrative data on the entire Dutch population on residents' income, employment status, age, gender, household configuration and the neighbourhood of residence. There has been widespread discussion on what defines a neighbourhood (e.g. Sampson et al., 2002). Recently, scholars have started to prefer egohoods (Dinesen and Sønderskov, 2015; Hipp and Boessen, 2013) over administrative units with fixed boundaries. A systematic comparison between neighbourhoods with administratively defined boundaries and egohoods in the Netherlands, however, shows that neighbourhood effect sizes are quite similar in egohoods and administrative units despite differences in boundaries (Tolsma and van der Meer, 2016).

This finding might be explained by the fact that Dutch administrative neighbourhoods are relatively small (on average about 1,500 residents) and the borders seem to be aligned with the residents' perceived delineation of their neighbourhood. The boundaries of Dutch administrative neighbourhoods are drawn by municipal officials; the borders follow natural boundaries, and have a high degree of homogeneity in the style and building period of the dwellings as well as the socio-economic status of residents. In the Netherlands, the administrative neighbourhood is thus a widely accepted and valid measure of the residential context (Gijsberts et al., 2010; Musterd et al., 2012a). The socio-economic composition of the neighbourhood is measured by a standardised deprivation index, which is composed of several measures on income and dependence on social benefits within an administrative neighbourhood (obtained from register database *Key Figures Districts and Neighbourhoods* of Statistics Netherlands).

By analysing dynamic data, and by evaluating policies using a causal design, this study uses advanced methods to assess the moderating neighbourhood effects reliably and validly for the Netherlands. The central approach is to open the black box by formulating more precise subgroups for which mechanisms are expected to be working.

Nevertheless, a few issues concerning causality remain unresolved in this dissertation. In particular, the possibility that neighbourhood

effects are due to selection into the neighbourhood based on unobservables cannot be ruled out. Furthermore, even in longitudinal designs, it is difficult to assess a causal link between the neighbourhood and individual outcomes through these social-interactive mechanisms. These mechanisms are referred to as endogenous by Manski (2000), meaning the behaviour and attitudes of neighbours are assumed to have an impact on the other residents' behaviour and attitudes in the neighbourhood. This endogenous impact makes it a challenge to identify causal neighbourhood effects: does the socio-economic behaviour within the neighbourhood in fact affect a resident's individual socio-economic behaviour, or is this neighbourhood socio-economic composition nothing more than the aggregation of individual socio-economic characteristics in the neighbourhood (referred to as the 'reflection problem', by Manski, 1993)?

While it is challenging to disentangle causal pathways, the conditionality of the relationship between the neighbourhood's level of deprivation and the socio-economic consequences for its residents can still be assessed. This association between the neighbourhood and its residents' socio-economic characteristics is a precondition for the exploration of the social-interactive mechanisms behind neighbourhood effects. The four modifiers in this dissertation are related to a resident's neighbourhood involvement and this involvement is considered to be a minimal condition for the social-interactive mechanisms to come into play. The extent to which these modifiers condition the association between neighbourhood characteristics and the resident's socio-economic status in the hypothesised ways gives us insight into the plausibility of the social-interactive mechanisms behind neighbourhood effects on residents' life chances.

The time is long overdue to identify modifiers through which the neighbourhood's socio-economic composition and individual socio-economic status are associated. A systematic test on conditional effects has been lacking from the field so far. The studies in this dissertation show that the one-size-fits-all approach does not hold, as neighbourhood effects arise under specific conditions and circumstances. Neighbourhood effects are thus less structural than otherwise conveyed and are also not always as consistent with the social-interactive mechanisms as often proposed by many scholars in the field.

FOUR EMPIRICAL STUDIES

Chapter 2: The conditionality of neighbourhood effects upon social neighbourhood embeddedness

In the first empirical study, I focus on the social contacts and interactions in the neighbourhood which are assumed to be the minimal condition for the social-interactive mechanisms behind neighbourhood effects to operate. In general, social networks are hypothesised to be directly beneficial to somebody's career (Lin, 1999). Neighbourhoods can contain potential employment information from neighbour networks and advantageous role models. Deprived, resource-poor neighbourhoods are assumed to lack the opportunities and work-oriented environment for disadvantaged neighbours to improve on their economic situation (Buck, 2001).

Social-interactive mechanisms behind neighbourhood effects are most dominant in the field. The impact of the neighbourhood is assumed to be transmitted through social interaction in the area. De Souza Briggs (1997, p. 202) emphasises that these mechanisms thus "assume a degree of meaningful contact among neighbors" but that "(...) this assumption of social contact is quite heroic and unfounded" and individuals are not equally exposed to certain neighbourhood attributes. As the degree of social interaction in neighbourhoods is essential to most models of neighbourhood effects, de Souza Briggs warns that "we should stop guessing about social interaction or imagining cohesive urban villages (...)" (1997, p. 225). Researchers should incorporate the degree of social embeddedness of the residents in the neighbourhood because the degree of social interaction in the neighbourhood influences the extent to which an individual is affected by neighbourhood characteristics (Tienda, 1990, 248-49). As residents might have sources of support that extend beyond the neighbourhood, and thus are not all predominantly locally oriented, some residents might be less sensitive to neighbourhood attributes than others (Ellen and Turner, 1997; Galster, 2008).

I take up this elementary idea and estimate how neighbourhood conditions impact differently on different residents related to their neighbourhood-specific social contacts and interactions. This leads to the following research question: *To what degree is the association between the neighbourhood's socio-economic conditions and resident's socio-economic*

status in Dutch neighbourhoods conditional upon the resident's degree of neighbourhood-specific social contacts and interactions?

This research question is answered by employing multi-level models on the first wave of the 2009 Netherlands Longitudinal Lifecourse Study (NELLS). The results find that the magnitude of neighbourhood effects is not higher for individuals with more neighbourhood-specific social contacts and interactions which challenges the presupposition of the network and socialisation mechanisms behind neighbourhood effects.

Chapter 3: Lingering and temporal neighbourhood effects

The second empirical chapter goes beyond the common practice of studying the impact of the current residential neighbourhood of residence through socialisation and resources mechanisms (as studied in the first empirical chapter). There could well be a continuing exposure to the former neighbourhoods of residence; residents who move can be exposed to different neighbourhoods at the same time, making it a challenge to allocate the neighbourhood effects to the accurate neighbourhood (Hedman, 2011). Furthermore, the intensity of exposure to neighbourhood(s) is hypothesised to influence the degree to which socialisation takes place in the neighbourhood. Consequently, the length of residence should also affect one's likelihood to be receptive to neighbourhood characteristics (Galster, 2008, p.10), as it takes time for social ties in the neighbourhood to form and for socialisation processes to commence (Boyd, 2008). Moreover, note that although residents move to another neighbourhood, they might maintain their former contacts and use their old networks in the former neighbourhood as a resource (Manley and van Ham, 2012).

Most research focuses on the effect of the current neighbourhood despite the length of residence and ignores the former neighbourhoods of residents. There is a need for a more comprehensive longitudinal approach in studying neighbourhood effects: former residential neighbourhoods are likely to have lingering effects beyond those of the current one and are dependent on exposure times and number of moves. It is hypothesised that the negligence of individuals' particular residential histories (moving behaviour, the passage of time and temporal exposure) leads to a misestimation of neighbourhood

effects. This is translated into the following research question: *To what degree are neighbourhood effects in conventional models affected by including residential neighbourhood histories?*

This is examined by applying cross-classified multi-level models (residents nested in current and former neighbourhoods) using longitudinal individual-level population data from Dutch Statistics (observation period 1995/1999-2011) that includes fine-grained measures of residential histories. Although this study is unable to isolate the mechanisms behind lingering effects — it could long-lasting socialisation, continuing social networks, or a scarring effect of poor labour market histories — the empirical evidence clearly points to a misestimation in conventional models: neighbourhood effects are lingering, long-lasting and persistent — they last even beyond the level of income residents have at the start of their current residential spell — and cannot be confined to a single point in time.

Chapter 4: Neighbourhood effects for different household configurations over the life course

The third empirical chapter continues with this dynamic approach, acknowledging that neighbourhood effects cannot be captured by a snapshot of a resident's life. In particular, it includes the dynamics of labour market and life course transitions. The large majority of neighbourhood effects studies on socio-economic outcomes focus on income development (e.g. Andersson et al., 2007; Galster et al., 2008; Brännström, 2004; Bolster et al., 2007) or change in employment status between a few points in time (e.g. Feng et al., 2015; Musterd et al., 2003; Musterd and Andersson, 2006; van Ham and Manley, 2010). These studies, however, disregard the transitory dynamics of an individual's employment trajectory, and the duration of inactivity and timing of entering the labour market are seldom studied.

Moreover, the heterogeneity of neighbourhood effects on different household configurations and their related neighbourhood involvement over the life course is neglected, even though it is likely that the neighbourhood influences its residents in heterogeneous ways. Individuals with different household configurations bear different levels of involvement in the neighbourhood which makes them more or less vulnerable to negative spillover effects of living in a deprived neigh-

bourhood. In particular, residents with children spend more time in the neighbourhood, are more likely to be subject to socialisation, and will probably have a denser network of social contacts within the neighbourhood. Furthermore, the younger the children in the household, the higher the levels of involvement in the neighbourhood and the larger the impact of the neighbourhood of residence on the socio-economic outcomes is assumed to be. This impact is hypothesised to be especially strong for single parents, who are more constrained to the neighbourhood.

So far, most neighbourhood effects scholars only controlled for static household positions, although the influence of the neighbourhoods should theoretically vary with residents' changing household composition over their life course. I aim to answer the following research question: *Does the level of deprivation in the neighbourhood of residence hamper the transition from inactivity to work and, moreover, does this neighbourhood effect differ for individuals in different household configurations?*

This question is answered by applying a discrete time event history analysis using unique Dutch individual-level population panel data covering the years 2004-2011. The models suggest that residing in a deprived neighbourhood only hampers the transition to work for women, as well as that this association hinges on their household composition: only for partnered mothers with a young child and single mothers of primary school aged children, a higher level of neighbourhood deprivation results in a statistically significant reduction in the odds of making the transition to work. This study could not confirm neighbourhood effects for residents in other household configurations which were also assumed to be more involved in the neighbourhood, implying that other explanations beyond the social interactions in the area, such as local employment opportunities, commuting times, availability of child care and welfare benefits regulations influence the resident's socio-economic outcomes in the neighbourhood.

Chapter 5: Socio-economic consequences of forced relocation

While the first three empirical chapters focus on the intertwined processes of the impact of the neighbourhood and residents' social embeddedness, their residential histories, and their household configu-

rations, there is another cross-cutting development of governmental urban renewal strategies. In the Netherlands, a national policy for urban renewal (*Nota Stedelijke Vernieuwing*, VROM, 1997) was initiated to restructure the housing stock in disadvantaged neighbourhoods through selling and selective demolition of low-rent social housing and replacing them with more upmarket dwellings. The goal was to enhance physical surroundings, the individual residents' quality of life, and the social cohesion of the community. In 2006, a report on economic mobility prospects in cities (*Stad en Stijging*, VROM, 2006) shifted its focus more towards individual deprivation and poor economic prospects of residents in disadvantaged neighbourhoods (Schuiling, 2007).

The neighbourhood interventions have triggered involuntary moves of the incumbent residents in and beyond these neighbourhoods. The effects of mixing neighbourhoods' tenure in originally deprived neighbourhoods on its incumbent residents has been thoroughly evaluated and investigated by many researchers: "[u]sually and area-based policy is aimed at making an area a better place to live, and then there is no interest in what is happening in other areas" (Bolt and van Kempen, 2010, p.451). However, these other areas accommodate the other side of this process: attracting affluent individuals means relocating poor residents, potentially towards other (affluent, middle class) areas where they have access to more diverse resources and networks (a process not unlike the American Moving to Opportunity programme).

In line with the central claim of this dissertation that neighbourhood effects are contingent, in this final chapter I focus explicitly on the different neighbourhoods that relocatees move to. The logic behind mixing policies implies that forced relocatees move to better-off neighbourhoods to prevent concentrations of disadvantage and to improve their housing situation. In addition, a move to a better-off neighbourhood is believed to improve the social networks and role models for those residents which is assumed to enhance their socio-economic chances. These forced relocatees differ, however, in their relocation destinations: some move within the origin neighbourhood while others move beyond the neighbourhood to a more affluent area. Since policymakers have adopted socio-economic mixing as the key mechanism to deal with individual deprivation and poor economic prospects, the success of the policy should also be assessed by focus-

ing on the social mobility of the displaced resident (Posthumus et al., 2013; Kleinhans et al., 2014).

This study aims to answer the following research question: *Do forced relocatees live in more affluent neighbourhoods after the forced move, can an upward socio-economic mobility (income, employment) be observed, and more specifically, can an upward socio-economic mobility be observed once there has been a considerable improvement in the neighbourhood environment after the forced move?* This is studied by establishing a quasi-experimental design by employing unique longitudinal individual-level population registry data from Statistics Netherlands. Forced relocatees are tracked in this dataset and matched to a control group consisting of similar residents that were not forced to move. A difference-in-difference design shows that forced relocatees are living in less deprived neighbourhoods after the move. However, the upgrade in housing does not in turn lead to more socio-economic opportunities: on average no improvement in economic prospects (earnings and employment) was found over time for the forced relocatees. These findings do not only challenge the neighbourhood effects literature, but also questions the justification of the widespread area-based urban renewal policies.

An overview of the empirical chapters including the sources of heterogeneity, the specific conditions on which neighbourhood effects are hypothesised to be contingent, the outcome variable, and the method and data employed are summarised in Table 1.1.

Table 1.1: Overview empirical chapters

Heterogeneity	Condition	Outcome	Method	Data
Chapter 2: Social interaction	Neighbourhood-specific contacts and interactions	Income	Multi-level analysis	NELLS
Chapter 3: Residential history	Number of moves, length of residence, time elapsed since move	Income	Cross-classified multi-level models	Social Statistical Database
Chapter 4: Life course	Household configuration and age of youngest child	Transition to employment	Discrete-time event history analysis	Social Statistical Database
Chapter 5: Relocation destinations	Improvement in neighbourhood composition after forced move	Income, employment	Difference-in-Difference with matching	Social Statistical Database