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When moving matters

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Chapter 6.

Conclusion

This dissertation aimed at unpacking diversity in childhood residential mobility patterns and consequences in the Netherlands and Sweden. There is growing scholarly and societal concern about inequalities of opportunity influenced by childhood experiences and the differential environments in which children grow up. Moving house during childhood is not only a stressful and disruptive event in itself, but also plays a crucial role in understanding the environments to which children are exposed, as moving is often accompanied by a change in family structure, school and neighbourhood context and could either improve or deteriorate conditions. Residential mobility during childhood can take many different forms. It was therefore first of all essential to gain a better understanding of the extent to which different types of mobility are experienced by different groups of children. More specifically, this dissertation focussed on variation in residential mobility by migrant background and neighbourhood context as patterns of mobility were expected to differ due to generally higher mobility of migrant populations, their spatial concentration in urban areas and deprived neighbourhoods, and a more vulnerable position in society. The first research question addressed in this dissertation was therefore: *to what extent do patterns of childhood residential and neighbourhood mobility vary by migrant background and neighbourhood composition at birth?* The variation in different types of childhood residential mobility formed the basis for the second part of this dissertation focussing on the long-term consequences of different types of mobility for educational attainment and the heterogeneity in this association for different groups of children. The second research question was: *to what extent, under which conditions and for whom does childhood residential and neighbourhood mobility affect educational attainment in young adulthood?*

In addressing these questions, this dissertation has made two main contributions to the literature. First, I integrated the residential mobility and neighbourhood effects literature within a life-course framework. While both strands of literature have been concerned with the extent to which (changes in) a child's residential context influence individual outcomes, the lack of explicit integration of the two has resulted in little consensus on the consequences of childhood residential mobility. More specifically, research is still inconclusive *under which conditions* and *for whom* moving during childhood might be detrimental or beneficial. Second, I addressed this issue by applying a multidimensional and longitudinal approach to both patterns and consequences of childhood residential mobility. Of central concern throughout this dissertation are the *multiple dimensions* of moving in terms of frequency, age, distance and changes in the residential context as well as *variation* in residential mobility patterns and

consequences for children of migrants and non-migrants and children born in different types of neighbourhoods. I used unique longitudinal individual-level full population register data for both the Netherlands and Sweden, which serve as particularly interesting contexts given the limited research on childhood residential mobility in European contexts, the relatively high rates of mobility in those countries, and large proportion of migrant populations. I combined different quantitative and spatial methodological approaches suitable for examining different dimensions of residential mobility and the neighbourhood context over time. Overall, the findings in this dissertation underline the importance of a longitudinal multidimensional assessment of childhood residential mobility to advance our understanding of inequalities and vulnerabilities in early life and how they unfold and accumulate over a child's life course.

The four empirical chapters in this dissertation have addressed different aspects of patterns (Chapters 2 and 3) and consequences (Chapters 4 and 5) of residential mobility during childhood. In this chapter, I discuss the conclusions of the dissertation by embedding my findings in the broader literature. I start with the theoretical contribution of the dissertation linking the residential mobility and neighbourhood effects literature within a life-course framework. After this, I discuss the methodological approaches of the dissertation contributing to advancements in multidimensional and longitudinal studies. I present and discuss the findings in three overarching conclusions. Finally, I discuss the limitations and directions for future research as well as the broader societal implications.

6.1. Theoretical contribution

Childhood residential mobility is intrinsically linked to children's neighbourhood context, yet literature in these fields has largely developed separately. The childhood residential mobility literature mainly views moving as stressful and disruptive for children. It conceptualises neighbourhood change as one aspect of disruption (Anderson et al., 2014c), without explicitly considering the impact of the neighbourhood contexts to which children are exposed. The neighbourhood effects literature, on the other hand, is mainly concerned with a child's exposure to the neighbourhood context. It has recently adopted a more dynamic temporal approach in which residential mobility is conceptualised as the main driver through which a child's neighbourhood context changes (Hedman, 2011), but the disruptive impact of a move itself is rarely taken into consideration. Long (1992) already pointed out the importance of integrating those literatures:

The literature on children's mobility seems to look for circumstances under which moving may not be good for children and fails to consider circumstances in which children may be harmed because limited residential choices prevent moving out of neighborhoods that impede educational and life chances of children. Just as frequent moving may harm some children's educational attainment, other children may be harmed by immobility and the long-term exposure to noxious neighborhoods. (p. 868)

In the past decades, both the residential mobility and neighbourhood effects literature have made advancements in gaining understanding on the circumstances under which moving is detrimental and the implications of duration of exposure to neighbourhood deprivation, yet the connection between both fields has remained limited. At this nexus lies the main theoretical contribution of this dissertation: integrating insights from both fields within a life-course framework. The life-course perspective incorporates temporal and spatial dimensions by viewing human lives and development as a social process unfolding over life courses embedded in broader social and spatial contexts (Elder et al., 2003). Building on this perspective, I connected four aspects of the residential mobility and neighbourhood effects literature into a multidimensional and longitudinal framework used in the empirical chapters in this dissertation.

First, I argue for the simultaneous study of multiple dimensions of childhood residential mobility. Several aspects of childhood moves, mostly studied independently from each other, have been theorised to impact the extent to which moving might be harmful including the frequency of moves, age of moving, distance moved and the accompanied contextual changes (Garboden et al., 2017). All four empirical chapters in this dissertation examine multiple dimensions of childhood residential mobility. Second, following the temporal approach in the neighbourhood effects literature (Sharkey & Faber, 2014), I argue that the extent to which positive or negative changes in the neighbourhood context accompanying a move impact children depends on the duration of exposure to a neighbourhood. In Chapters 3, 4, and 5 the childhood neighbourhood context is examined longitudinally in relation to residential mobility patterns. Third, selective mobility is recognised in both literatures to be a potential cause of bias (Garboden et al., 2017; Hedman & Van Ham, 2012). Combining insights on mobility patterns from both literatures, I argue for an understanding of differential patterns of (im)mobility across multiple dimensions including but not restricted to who moves out of and towards particular neighbourhoods. All four empirical chapters provide insight into selective mobility patterns by examining variation in moving by migrant

background (Chapter 2), neighbourhood socioeconomic composition at birth (Chapters 3 and 4) and by using a robust method to account for selective mobility in studying the association with educational attainment (Chapter 5). Finally, the impact of both residential moves and exposure to neighbourhood deprivation might vary for different groups of children. Vulnerability to effects might differ by sociodemographic groups, but has also been theorised to depend on whether or not a child's family and neighbourhood environment might compensate for the impact of moving (Perkins, 2017; Sharkey & Faber, 2014). Building on this perspective, heterogeneity in mobility effects is assessed for children born in different types of neighbourhoods (Chapter 4); and among those born in a deprived neighbourhood for children of migrant and non-migrant parents and those growing up in intact or non-intact families (Chapter 5).

In sum, taking these aspects into account, I propose a longitudinal and multidimensional framework for unpacking diversity in childhood residential mobility and neighbourhood context that is crucial for understanding accumulations of advantage and disadvantage over a child's life course. Such an approach requires longitudinal data and methodological techniques suitable for capturing diverse dimensions of childhood residential mobility over time. In the following section, I discuss the methodological contribution of this dissertation before turning to the findings of the empirical studies, which are discussed within this theoretical framework in three overarching conclusions.

6.2. Methodological contribution

The analyses in this dissertation are based on longitudinal individual-level full population register data of the Netherlands and Sweden. Both datasets include a high level of geographical detail with small-scale geocoded places of residence. These unique data in both countries allowed for a detailed construction of residential trajectories with exposure to neighbourhood deprivation throughout childhood. I followed the residential trajectories of entire birth cohorts between ages 0 and 16, and analysed their educational attainment in young adulthood. Building on these rich data sources, I combined several methodological approaches that proved fruitful to empirically integrate dimensions of residential mobility and the neighbourhood context.

First, a combination of statistical and spatial techniques was used to gain a more comprehensive understanding of the residential and neighbourhood trajectories of children. To discern types of mobility patterns, I applied clustering techniques on key dimensions of childhood residential mobility (Chapter 2) and on sequences of residential

mobility and neighbourhood socioeconomic composition (Chapter 4). In both countries, similar types of childhood mobility were discerned across multiple dimensions, validating that clustering is a useful tool to unpack diversity in mobility and reduce some of the complexities. To create a comprehensive measure of neighbourhood socioeconomic status comparable for both countries and over time, I used a combination of Principal Component Analysis on key neighbourhood indicators (Chapters 3, 4, and 5) and constructed small-scale individualised neighbourhoods using the k -nearest neighbour approach, which is arguably a more realistic measure of a child's social environment compared to neighbourhoods defined using administrative borders (Chapter 5). Additionally, spatial techniques were used to examine geographical concentrations of childhood mobility and neighbourhood deprivation, and to select regions in which these concentrations were most evident (Chapter 3).

Second, combining these techniques with multivariate regression models in all chapters, I studied determinants of different types of moves and exposure to neighbourhood deprivation (Chapters 2 and 3) as well as their association with educational attainment in young adulthood (Chapters 4 and 5). To reduce selection bias, I employed propensity-score methods in Chapter 5 to minimise differences between children experiencing different types of mobility. Although causal claims cannot be made given that unmeasured characteristics might still be underlying the found association (Garboden et al., 2017), the used propensity-score weights proved fruitful for minimizing selection bias. The combination of methodological approaches demonstrates that a one-dimensional and static perspective masks important variation in childhood residential mobility and the residential contexts to which children are exposed.

6.3. Discussion of the findings

This dissertation has shown that residential mobility during childhood is a common experience. The majority of children in both the Netherlands and Sweden move at least once during childhood. The first part of this dissertation aimed at uncovering variation in the types of moves experienced during childhood, focussing on patterns of childhood residential mobility across multiple dimensions and variation in mobility patterns by migrant background and neighbourhood context. The second part aimed at gaining understanding of the consequences of residential mobility for educational attainment, focussing on the role of diverse types of mobility, selective mobility and heterogeneity in the consequences for different groups of children.

The multidimensionality of childhood residential mobility

Throughout the different chapters of this dissertation, it has become apparent that residential mobility during childhood displays complex and diverse patterns. My findings contribute to the literature by discerning different patterns of childhood residential mobility and interrelated changes in the neighbourhood context. I conclude that a multidimensional and longitudinal perspective is essential to advance knowledge on the diversity in childhood moves and residential contexts to which children are exposed. This has important implications for how we study contextual effects and serves as a starting point to unravel inequalities in the early life course and its long-term consequences. In the following section, I discuss the different interrelated dimensions of childhood residential mobility as studied in this dissertation relating to accumulations of (in)stability and (dis)advantage, timing, and contextual change.

Accumulations of (in)stability and (dis)advantage. When perceiving individual life courses as encompassing cumulative processes of experiences and events (Elder & Shanahan, 2007), multiple moves in childhood (Coley & Kull, 2016) and long-term exposure to neighbourhood deprivation (Wodtke et al., 2011) are theorised as a particular risk factor for children. Frequent moving – defined as three or more moves in childhood - is not a rare event in the high mobility countries studied in this dissertation, and even more common in Sweden compared to the Netherlands. Among children born in intermediate and more affluent neighbourhoods, frequent moving is associated with longer exposure to neighbourhood deprivation in both countries (Chapters 3 and 4), thus adding to the accumulation of negative circumstances of multiple moving experiences and increased exposure to neighbourhood deprivation. Residential mobility might also positively alter a child's trajectory when resulting in decreased exposure to neighbourhood deprivation (Chetty et al., 2016). My results show that more distant moves are most clearly accompanied by a positive change in the neighbourhood context (Chapters 3 and 4), with distant moves towards less densely populated areas being particularly associated with a decreased exposure to neighbourhood deprivation (Chapter 3). This pattern primarily reflects suburbanisation patterns among families with living conditions being improved, in line with the residential choice literature, showing that families with children often move to more spacious housing in more child-friendly environments (Mulder, 2013). In sum, my results distinguish between patterns of childhood residential mobility that may add to an accumulation of disadvantage over a child's life course when experienced repeatedly, and patterns that might trigger accumulations of advantage when resulting in exposure to a better living environment.

Timing. My findings confirm the general age pattern of residential mobility (Bailey & Livingston, 2005; Long, 1992), showing that the majority of children move at a young age, making their first move before starting compulsory education (Chapters 2 and 4). Young children are more susceptible to changes in the family and home environment, but might benefit from a move to an improved environment in the long run (Anderson et al., 2014c). My results indicate that early childhood moves do not necessarily relate to an improved neighbourhood environment; this improvement is mainly visible with more distant pre-school moves (Chapters 3 and 4). As children grow up they become more attached to the local neighbourhood (Jack, 2008). School-aged children and adolescents might thus be more affected by a changing neighbourhood and school context accompanying a move, disrupting their peer network (Anderson et al., 2014c; Coley & Kull, 2016). I find that a substantial proportion of children make their first move during school ages with most school-aged and adolescent moves being over short distances (Chapters 2 and 4). This might imply that those moves do not entail a school change and children should be able to maintain their friendships, especially since the geographical orientation and independence of children increases as they age (Jack, 2008; Mackett et al., 2007). I show that parental union dissolution is an important determinant of school-aged moves (Chapters 2 and 4), which could possibly explain the relatively short distances of those moves as parents are increasingly living in proximity to each other after separation (Turunen et al., 2023). At first glance, these results might suggest limited disruptions to a child's environment as moves are mostly nearby during the ages at which the neighbourhood becomes more important. Nevertheless, as children are more embedded in the local environment than adults are, even short-distance moves might impact a child's daily experiences. My results furthermore show that school-aged and adolescent moves are a common experience among children moving frequently (Chapter 4), underlining the importance of considering prior moves in childhood when studying adolescent moves (Anderson & Leventhal, 2017). Taken together, my analyses show that the age of moving should be studied in relation to other dimensions of mobility such as the distance of the move, the frequency of moves and changes in the neighbourhood context to fully understand the impact of moving during different ages.

Contextual change. The extent to which a child's environment changes depends partially on the distance moved. My results show that most moves in childhood occur over relatively short distances in both countries, with a median distance of around 2.3 km in the Netherlands (Chapter 2) and around 4.7 km in the metropolitan areas of Sweden (Chapter 4). This confirms a more local mobility pattern of households with children,

probably as they are more tied to places and local networks compared to households without children (Bailey & Livingston, 2005; Clark, 2013). While short-distance moves might not entail major changes in a child's environment, they may be triggered by positive as well as negative circumstances and events (Garboden et al., 2017; Morris et al., 2018). I find that short-distance moves more often entail a downgrade in neighbourhood conditions resulting in an increased exposure to neighbourhood deprivation (Chapter 3), pointing to more negative circumstances of nearby moves. Some children do move over somewhat longer distances, although those moves are still relatively nearby and often reflect urban to suburban movement within regions rather than long-distance moves between labour-market regions. Building on social capital theory, scholars have argued that long-distance moves are more disruptive for children as they are more likely to result in school changes and break social networks and friendship ties (Garboden et al., 2017; Gillespie, 2013). On the other hand, long-distance moves are argued to be more often related to positive relocation such as moves for employment reasons (Garboden et al., 2017; Morris et al., 2018). My findings generally confirm that long-distance moves are more often upward in terms of neighbourhood conditions, resulting in a decreased exposure to neighbourhood deprivation (Chapters 3 and 4). Thus, my results point to patterns of short-distance moves relating to more negative neighbourhood changes, while long-distance moves are associated with more positive contextual changes. This has important implications for how we conceptualise distances in childhood residential mobility studies as long-distance moves may not be the main disruptive factor for a child's environment.

Types of mobility across multiple dimensions. By simultaneously studying different dimensions of childhood residential mobility, I distinguished distinct types of mobility similar in both the Netherlands (Chapter 2) and Sweden (Chapter 4). Clustering on key dimensions - frequency, timing, distance, and contextual change - has proven to be a useful tool to unpack diversity in types of residential mobility experienced in childhood that would have otherwise been masked. For example, studies focussing solely on age of moving ignore that most school-aged moves are made by children who experience multiple moves. Similarly, studies focussing only on distance moved often fail to take into account that most long-distance moves are directed towards a better environment. The extent to which childhood moves can be considered as positive or negative does not only depend on those interrelated dimensions of the move itself, but also on the broader context of a child's life.

Variation in childhood residential mobility patterns

This dissertation evidences that children with different family backgrounds experience different types of mobility. My results generally confirm selective mobility patterns by socioeconomic background and family structure in line with previous studies (Coulton et al., 2012; Gambaro et al., 2017; Long, 1992; Murphey et al., 2012). Upward, long-distance moves are more often experienced by young children in stable, high-income families with highly educated parents, while frequent moves are more often experienced by children in low-income families, single parent families and those who experienced parental union dissolution. These results indicate that family resources are essential for making a more desirable move, while frequent moving is more indicative of disadvantage and instabilities. Going beyond socioeconomic characteristics and family structure, the innovative contribution of my studies lies in evidencing variation in childhood residential mobility by migrant background (Chapter 2) and geographical variation in terms of degree of urbanisation and neighbourhood composition at birth (Chapters 3 and 4). At the intersection of those influences, I furthermore showed that types of residential mobility vary among children born in similar neighbourhoods but with different migrant and socioeconomic backgrounds (Chapters 3 and 4). I conclude that the residential mobility patterns experienced by children of different backgrounds reflect diverse processes and circumstances, which may add to variation in (dis)advantages during childhood for different groups of children.

Variation by migrant background. My results show that children of migrants are generally more mobile compared to children with non-migrant parents, but importantly I show that the type of move experienced differs between children of different migrant origins. In the Netherlands, children with Moroccan and Turkish parents more often move nearby, while children of Surinamese and Antillean descent more often move over longer distances and more frequently (Chapter 2). Furthermore, children with a migrant background generally experience longer exposure to neighbourhood deprivation compared to children with non-migrant parents, and this is especially pronounced for children of Moroccan and Turkish descent (Chapter 3). The literature suggests that demographic and socioeconomic differences between migrants and non-migrants might explain differences in mobility rates (Finney & Simpson, 2008) as well as concentrations of migrants in poverty neighbourhoods (Bolt & Van Kempen, 2010). Different migration histories (e.g. reason for migration, year of arrival, area of settlement) and sociocultural background (e.g. language, religion, family norms) of migrant origin groups in the Netherlands have contributed to differences in their socio-demographic positions

(De Valk et al., 2009). Children with Moroccan and Turkish parents, for example, more often grow up with lower educated and unemployed parents, which might be associated with their higher exposure to neighbourhood deprivation. Children with Surinamese and Antillean parents more often grow up in single parent households, which is an important determinant for frequent mobility as it often relates to changes in the family structure and limited financial resources (South et al., 1998). However, my findings indicate that socioeconomic background characteristics, family structure and geographical location only partially explain differences in childhood mobility patterns between migrant groups (Chapter 2) as well as the long-term exposure to neighbourhood deprivation of migrant children (Chapter 3) in the Netherlands. Similarly, children with a migrant background in Sweden are more likely to move and to move frequently also after accounting for socioeconomic background, family structure and region of residence at birth (Haandrikman & Kuyvenhoven, 2024; not included in this dissertation). This is found for children of all migrant origins except for children of parents from the Horn of Africa and is particularly pronounced among children of parents from the Middle East.

While it is crucial to take socioeconomic background and household characteristics into account, as differences between children of different migrant origins might otherwise be overestimated, these do not completely explain differences in residential mobility. This unexplained variation seems to indicate that at least part of the variation might be related to differences in preferences, opportunities and constraints between families of different migrant origins. This could relate to the preference of individuals to live in areas among residents with similar socioeconomic, ethnic and socio-cultural characteristics or migrant-specific structural constraints such as discriminatory practices in the housing-market or a lack of social capital and resources to navigate the systems (Hedman et al., 2011; Van Gent et al., 2019). Notwithstanding those mechanisms, I conclude that the types of mobility experienced by children of migrants point to a more unstable childhood which can potentially add to their already more vulnerable position in society.

Geographical variation. An important contribution of this dissertation lies in incorporating a spatial perspective on variation in childhood residential mobility. I have shown that children in urban areas move more often, particularly over somewhat longer distances (Chapter 2), and results of spatial analyses confirm that childhood mobility and neighbourhood deprivation concentrate in cities (Chapter 3). Zooming in on the metropolitan areas of the Netherlands (Chapter 3) and Sweden (Chapter 4), my findings show that children born in deprived neighbourhoods are more mobile. The likelihood of

moving decreases with an increase in the socioeconomic status of the neighbourhood and is lowest for children in the most affluent neighbourhoods. The literature offers two opposing explanations for this difference. High mobility of children born in deprived neighbourhoods might be driven by a desire of families to improve their living conditions, while the low mobility of children born in affluent neighbourhoods might reflect satisfaction with the current living situation (Coulton et al., 2012). The overall decreased exposure to neighbourhood deprivation among mobile children born in deprived neighbourhoods in the metropolitan areas in both countries confirms this idea of upward mobility (Chapters 3 and 4). The particularly strong decrease of neighbourhood deprivation for children moving longer distances to less densely populated areas seems to reflect urban to suburban movement, which is a typical moving pattern for families in search for improved environments to raise their children (Mulder, 2013). However, while children born in deprived neighbourhoods who move have a decreased exposure in neighbourhood deprivation compared to their peers who stay, I also find that the majority of children born in deprived neighbourhoods in the metropolitan areas of Amsterdam and Stockholm have a long-term exposure to deprivation throughout childhood, even if they move (Chapter 5).

An opposing explanation for the high mobility of children born in deprived neighbourhoods might relate to financial and housing insecurities or family instability (Coulton et al., 2012). This is reflected in the particularly high prevalence of frequent moving among children born in deprived neighbourhoods (Chapters 3 and 4), as previous studies have often linked frequent moving in childhood to instabilities in other life domains such as parental union dissolution, job loss or housing insecurities (Murphey et al., 2012). Those instabilities might, however, also be a driving force for frequent movers in less deprived neighbourhoods. My findings support this by showing that children born in more affluent neighbourhoods who move, generally experience a higher exposure to neighbourhood deprivation compared to their peers who stay, and this is especially evident among frequent movers (Chapters 3 and 4). I conclude that, among children born in deprived neighbourhoods, different types of mobility may reflect different processes of upward mobility and instability. Those processes are related to diverse levels of exposure to neighbourhood deprivation pointing to important variation in the circumstances of different moving patterns.

Variation within deprived neighbourhoods. The diversity in the circumstances of residential mobility becomes most apparent in the substantive variation found in types of mobility between children born in similar neighbourhoods but with different

backgrounds. Focussing on residential mobility of children born in deprived neighbourhoods in the metropolitan areas of Amsterdam and Stockholm (Chapter 5), my results show that in deprived areas, children with a migrant background, lower socioeconomic family situation, in single parent households and in rental housing are generally overrepresented. Moreover, those children more often stay or move to equally deprived neighbourhoods and frequent moving is more common among children in non-intact families, while children with non-migrant parents, in more socioeconomically beneficial situations and stable families more often move towards less deprived neighbourhoods. The literature indeed suggests that socioeconomic resources as well as migrant background play an important role in who leaves a deprived neighbourhood and who stays. First, moving requires financial resources resulting in desired moving patterns among resourceful families and immobility among families with limited resources and opportunities (Coulton et al., 2012). Secondly, the preference of families to live among residents with a similar background might result in the majority population moving out of deprived areas and migrant populations staying in those areas (Andersson, 2013). I conclude that moves out of deprived areas reduce exposure to neighbourhood deprivation primarily among children with non-migrant parents in a more advantageous socioeconomic situation, while children with migrant parents in more precarious socioeconomic situations are less likely to move out of deprived neighbourhoods, adding to accumulations of (dis)advantage over a child's life course.

Consequences of childhood residential mobility for educational attainment

The complexity of diverse residential mobility patterns during childhood calls for a multidimensional analysis of the consequences of moving. Education is important in shaping opportunities in life and therefore an important factor in the reproduction of inequalities. By focussing on educational attainment later in life, this dissertation extends knowledge on the role of childhood residential mobility and neighbourhood context for inequalities that can have long-lasting consequences. I show that the extent to which moving during childhood is associated with educational attainment in young adulthood (1) depends on the type of mobility experienced, (2) can partially be explained by selective mobility patterns and (3) differs by neighbourhood context and family stability (Chapters 4 and 5).

My results primarily support the cumulative detrimental impact of moving repeatedly, which is also related to instability in other domains, making frequent movers a particularly vulnerable group. The beneficial impact of upward neighbourhood mobility

is only partially supported by my findings as it seems primarily explained by a more advantaged group of children moving towards better environments. While moving in childhood is thus not per definition associated with educational attainment, my findings evidence that the frequency of moving and the neighbourhood and family context in which children are embedded play an important role.

Accumulations of instability and disadvantage. My findings support the cumulative negative implications of moving repeatedly. I have shown that moving frequently (three or more moves) is associated with a lower likelihood of completing tertiary education by age 26 in the metropolitan areas of Sweden (Chapter 4). I found similar results for the Netherlands in another study (Kuyvenhoven, 2022; not included in this dissertation), showing that frequent moving reduces the likelihood of completing secondary education by age 23. These findings are in line with previous research generally evidencing that frequent moving is associated with worse educational outcomes (Ersing et al., 2009; Haugan & Myhr, 2019; Hutchings et al., 2013; Simpson & Fowler, 1994; Tønnessen et al., 2016; Wood et al., 1993). Given that this negative association is quite consistently found, the literature suggests a cumulative effect when moving is experienced repeatedly due to multiple disruptions with limited time and resources to adjust to a new environment (Mollborn et al., 2018). Some scholars, however, suggest that the negative impact of repeated mobility can be explained by the selective mobility of children in an already more disadvantageous socioeconomic or unstable family situation moving more frequently (Tucker et al., 1998; Vidal & Baxter, 2018). My results indicate a detrimental impact of frequent moving for educational attainment regardless of family background characteristics (Chapters 4), even when applying a more robust approach to account for selection bias using propensity-weighted models (Chapter 5).

My findings do point to heterogeneity in the impact of moving repeatedly by neighbourhood context at birth (Chapter 4), exposure to neighbourhood deprivation throughout childhood (Chapter 5) and family structure (Chapter 5). While three or more nearby moves are negatively associated with completion of tertiary education among children born in all types of neighbourhoods, this negative association is also found for moving twice nearby among children born in intermediate socioeconomic neighbourhoods and for multiple distant moves among children born in affluent neighbourhoods (Chapter 4). These results not only point to a general negative impact of moving frequently, but also to variation in this association depending on the neighbourhood of origin. Focussing on children born in deprived neighbourhoods in the metropolitan areas of Amsterdam and Stockholm (Chapter 5), even more heterogeneity

in the association becomes apparent. For Amsterdam, results indicate a negative association of frequent mobility for completion of secondary education irrespective of exposure to neighbourhood deprivation. For Stockholm, frequent moving is only associated with a decreased likelihood of completing secondary education when accompanied with long-term exposure to neighbourhood deprivation. Although a comprehensive comparison between the metropolitan areas was beyond the scope of the study, this finding points to a compensatory impact of reduced exposure to neighbourhood deprivation for educational attainment in Stockholm and not in Amsterdam, which might relate to the different educational systems. Exposure to a better neighbourhood might have a lagged effect (Chetty et al., 2016; Hango, 2006) and children in the Netherlands might not have yet benefited from this exposure before being sorted into educational levels at a young age. Furthermore, in line with previous studies (Haugan & Myhr, 2019; Tucker et al., 1998), the strongest negative impact of frequent moving with long-term exposure to neighbourhood deprivation is found for children in non-intact families, particularly in Stockholm. Overall, these findings evidence a cumulative impact of multiple residential moves exacerbated by disadvantages and instabilities in the neighbourhood and family context.

Age at moving. My findings generally do not point to an age-specific impact of moving for educational attainment. While school-aged moves are associated with a lower likelihood of completing tertiary education among children born in somewhat more affluent neighbourhoods in the metropolitan areas of Sweden, this is completely explained by differences in background characteristics of school-aged movers (Chapter 4). The main indicator explaining the association is the experience of parental union dissolution, pointing to a negative impact of instability in the family domain. The literature suggests that school-aged children and adolescents are particularly vulnerable to disruptions in their social environment, but it has also been suggested that it is not moves at those ages per se that are detrimental but rather a combination of those moves and prior moves in childhood (Anderson & Leventhal, 2017). Using sequence analysis following residential mobility throughout childhood, my findings indeed point to a pattern of frequent movers starting their mobility trajectory in early childhood and experiencing moves at different developmental stages, including during school-ages and adolescence (Chapter 4). Those patterns of frequent mobility are associated with a lower likelihood of completing tertiary education. This may suggest that rather than an age-specific impact of mobility, school-aged and adolescent moves are indicative of family instability or prior residential instability.

Contextual changes: distances moved and upward neighbourhood mobility. My findings add to the seemingly mixed findings in previous research regarding the impact of moving distance on later-life outcomes. Long-distance moves are argued to result in a greater disturbance of a child's socio-spatial context and by definition imply a school change, which is theorised to be more detrimental (Garboden et al., 2017), but on the other hand distant moves are more often found to be made by more affluent families and more often accompanied by a positive change in a child's environment. My findings show that distant moves, when experienced repeatedly, are associated with a lower educational attainment, while single distant moves during pre-school ages are associated with higher educational attainment. Those single distant moves during pre-school ages are also often accompanied by upward neighbourhood mobility, confirming that distant moves are often made to improve living conditions, which may outweigh the disruptive effect. However, most of the impact of both types of distant moves are explained by background characteristics with children in more unstable family situations more often making multiple distant moves and children in more affluent families making a single distant move.

To further disentangle the potential beneficial impacts of moving to a better neighbourhood, Chapter 5 focussed on mobility and exposure to neighbourhood deprivation among children born in deprived neighbourhoods in the metropolitan areas of Amsterdam and Stockholm. I find partial support for the proposition that moving out of a deprived neighbourhood would be beneficial for educational attainment (Chetty et al., 2016; Hango, 2006). Results show that moving once or twice with a reduced exposure to neighbourhood deprivation is indeed associated with a higher likelihood of completing secondary education, but reduced exposure does not result in benefits when moving is experienced repeatedly. By employing propensity-weighted regression models, my results evidence that the beneficial impact of an upward move is completely (Amsterdam) and partially (Stockholm) explained by selective upward mobility of more affluent families. Furthermore, my findings indicate heterogeneity in the beneficial impact by family stability. Children living with both parents throughout childhood benefit in their education from moving to an improved neighbourhood, while this is not found for children in non-intact families. Thus, reduced exposure to neighbourhood deprivation does not seem to compensate for the cumulative disruptive impact of moving in co-occurrence with family instability such as parental separation or repartnering. In sum, these findings point to diverging pathways in which children in more advantageous and stable families are more likely to move out of deprivation allowing them to have a

successful educational career, while children in more disadvantageous and unstable families move more frequently within or between deprived areas limiting their educational opportunities.

6.4. Limitations and future research

My dissertation underlines the importance of adopting a multidimensional and longitudinal perspective for studying childhood residential mobility and neighbourhood context. I have provided a framework for integrating literature on residential mobility and neighbourhood effects, which could be developed further in future research to unpack diversity in childhood experiences and its long-term consequences even more. A combination of several methodological approaches proved fruitful, but studying the multidimensionality of childhood residential mobility requires some form of clustering on dimensions that also comes with limitations, as such an approach may mask variation within clusters. To further develop this field and extend this line of research, I propose several relevant avenues for future research.

Research could focus on gaining more understanding of the diversity in circumstances of different mobility patterns. My findings indicate that particularly frequent moving and upward neighbourhood mobility are associated with differential educational outcomes. Disentangling the diverse circumstances of those moving patterns is an important avenue for future research. Regarding frequent mobility in childhood, the role of the family environment such as parental separation, stress, conflict, and support should be further explored. My findings show that single parenthood and parental union dissolution are important predictors for frequent moving, with repeated mobility being most detrimental for children in non-intact families. Such instabilities might take very different forms, ranging from involuntary moves due to a hostile parental separation in which parents have little room to provide a stimulating environment, to deliberate moves due to parental repartnering which could potentially result in a more supportive environment. Literature indeed suggests that residential mobility might be affecting child outcomes through family structure and processes (Anderson et al., 2014a) and research could further explore the extent to which this applies to frequent moves. Regarding upward neighbourhood mobility, my findings indicate a beneficial impact for educational attainment that is at least partially attributable to the socioeconomic and family situation of children experiencing those moves. Besides migrant background, family socioeconomic characteristics and family structure covered in this dissertation, future research could explore the role of a supportive and stimulating family situation

that might help children cope with a residential move. Additionally, while my studies focussed on changes in the neighbourhood socioeconomic context, children experiencing upward moves might still be moving to very different neighbourhoods. An important avenue for future research lies in uncovering different indicators of improvements in a child's living environment including housing, the school and neighbourhood that may benefit children.

Measuring children's neighbourhood context is complicated due to issues regarding the geographical scale of neighbourhoods, different features of the neighbourhood context, as well as the lived experience (Sharkey & Faber, 2014). Measures of the neighbourhood context do not necessarily capture the experienced environment of children. In Chapter 5, I used individualised neighbourhoods to conceptualise neighbourhoods that might be a better representation of a child's social context, but advancement in this field is still needed. This first of all relates to how children experience their neighbourhood. We know very little about the place attachment and perception of place of children, how they perceive distances and how resilient they are in adjusting to a new environment. Second, it relates to the different dimensions of the neighbourhood that are important to children which not only relate to neighbourhood composition, but also to social cohesion, availability of institutions such as quality schools as well as the physical environment such as green spaces and playgrounds (Galster, 2012). An improvement in the socioeconomic composition of the neighbourhood does not necessarily mean a similar upgrade in the physical environment or an improvement in neighbourhood social cohesion. The extent to which an improved environment is also experienced as an improvement by children should be explored further in future research combining qualitative and spatial studies.

Another important context for children's socialization is the school. Residential mobility might entail a change of school, but a child might also change schools without moving, which might be driven by other motivations (Garboden et al., 2017). I was not able to capture school mobility in my studies. Given that research suggests an important role of school mobility for educational outcomes that might act independently from residential moves (Garboden et al., 2017), this line of research should be developed further by focussing on the separate and interrelated role of school and residential mobility. This is particularly a relevant avenue for research on upward neighbourhood mobility, given that this might also imply a move to a better-quality school, and the school context has been found to be an important mechanism through which neighbourhoods impact children's educational outcomes (Sykes & Musterd, 2011).

While several theoretical explanations for the impact of residential mobility on education were discussed, relatively few empirical studies test mechanisms that might explain the impact of moving. The role of disrupted social capital and peer relations is often assumed, but not empirically tested (exceptions are: Hagan et al., 1996; Pribesh & Downey, 1999). Similarly, upward neighbourhood mobility is assumed to relate to a better environment for child development, but little is known on the aspects of a new neighbourhood that might benefit a child. The results of this dissertation are based on register data, which has the advantage to enable the study of childhood residential mobility longitudinally as well as to analyse long-term consequences for education. An important disadvantage of register data is that it does not capture motivations, social relations and how children experience a move. Survey and qualitative research could provide insights in such experiences, which is an important step in gaining understanding of mechanisms of residential mobility effects. Of particular relevance is testing theories regarding the disruption of social capital and peer relations of children and their parents when moving and the extent to which different types of mobility relate to such disruptions. Furthermore, research should move beyond the assumption of a detrimental impact of broken peer relations of mobile children and investigate how children experience and cope with a loss of friendships as well as making new friends in a new environment.

Finally, by comparing two European countries this dissertation has provided some insights into similarities and differences in childhood residential mobility patterns and consequences in different country contexts. However, a cross-national comparison was beyond the scope of this dissertation since the data could not be linked and the countries differ among other things in their migrant population, patterns of segregation, housing market and educational system. Cross-national studies could provide insight into differences and similarities in childhood residential mobility patterns and consequences as well as the role of institutional contexts. Since I find higher mobility rates among children of migrants and differences in types of mobility between migrant origin groups in both countries, future research could study whether this pattern is also visible in countries with lower overall mobility rates and compare migrant origin groups across different country contexts. Cross-national comparison could furthermore explore the role of different educational systems for understanding residential mobility and neighbourhood effects. The sorting into different educational levels at different ages across countries could provide particularly interesting grounds for exploring the importance of duration of exposure to neighbourhood deprivation. By exploring the

different dimensions of mobility and the neighbourhood context included in this dissertation across countries, research could explore generalizable and country-specific patterns and consequences of childhood residential mobility.

6.5. Societal implications

There is increasing societal concern about the impact of a child's residential context on later-life chances and the reproduction of inequalities of opportunities. The findings of this dissertation contribute to this public debate by showing the complex ways in which childhood experiences and neighbourhood exposure add to accumulations of (dis)advantage and their potential long-term consequences. It points to a pattern in which children in already disadvantageous situations also to a greater extent experience residential instability, which may hamper their educational success, while children in more advantageous situations move to environments more stimulating for a successful educational career. Residential mobility is intertwined with family life, housing conditions, and the neighbourhood context through which advantages and disadvantages in early life accumulate over a child's life course.

My findings suggest that children who move repeatedly throughout childhood are a particularly vulnerable group as frequent residential mobility reduces the likelihood of completing secondary and tertiary education, which may have long-term consequences for later-life chances. Given the complex processes surrounding childhood moves, it is difficult to establish whether multiple moves in childhood are the cause of lower educational attainment. My findings show that there are multiple interrelated disadvantageous and unstable factors in the lives of children experiencing extreme residential instability, including poverty, parental unemployment and parental separation. Rather than attempting to separate the impact of different experiences and contexts (Sharkey & Faber, 2014), my findings underline their interrelatedness and accumulation. Two societal developments might increase the number of children that will experience multiple moves during childhood and exacerbate accumulations of disadvantage.

First, there is an increasing number of children growing up in non-intact families, experiencing parental separation and repartnering (Kalmijn & Leopold, 2021). My findings show that children in single parent families and those experiencing parental separation are more likely to move repeatedly during childhood. Furthermore, my findings indicate that frequent mobility impacts educational outcomes particularly for

children in non-intact families, pointing to a cumulative impact of instability. Parental stress and conflict during separation might further reduce family support for children in adjusting to a new environment (Anderson et al., 2014c). With a growing number of children in non-intact families, there is potentially a growing group of vulnerable children that is at increased risk of falling behind in education. There is an important role for researchers, policymakers and schools to shed light on the problems those children face, which may help in facilitating support in their adjustment to new environments and situations to prevent further disadvantages.

Second, European societies have witnessed increased housing and financial insecurities over the past decades. Those insecurities will arguably result in unequal access to housing, determine who will be able to move to better living environments and increase housing insecurity and instability among an already vulnerable group of children. Family resources are becoming more important in the search for appropriate housing and environments to raise children and a lack of resources may force families to move repeatedly in search for affordable housing. There is an important role for policymakers to facilitate equal access to housing to provide children a more stable childhood. Those developments might not only increase inequality of opportunities for future generations of children, but they may also exacerbate diverging patterns of residential mobility and reinforce segregation. Increased income inequalities have contributed to rising spatial socioeconomic segregation in European cities, a trend that is expected to continue in the near future (Van Ham, 2021). As families of different origins settle in different types of neighbourhoods, this not only has implications for children growing up in those neighbourhoods but also has important societal implications.

In an increasingly diverse society, tolerance between different social and migrant groups is essential for maintaining social cohesion. Diverging patterns of residential mobility of different groups of children impacts the extent to which children interact with each other in school and the neighbourhood and in turn may influence their attitudes towards each other. My findings show clear selection into different mobility and neighbourhood trajectories for different groups of children, both in terms of socioeconomic status and migrant origin. Children with migrant parents and living in low-income families are more likely to be born in more deprived neighbourhoods and also more likely to stay in those neighbourhoods throughout childhood, while children with non-migrant parents born in families that are more affluent tend to move towards less deprived neighbourhoods during the course of childhood. Those diverging patterns may result in increased segregation as children reach school ages, during which children will enter

different schools, which may decrease intergroup contact. Given that neighbourhood deprivation is persistent and transmitted between generations (Gustafsson et al., 2017; Sharkey, 2008; Van Ham et al., 2014); these patterns might have long-term consequences for socio-spatial inequalities.

