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Conflicting regional policy goals: accessibility and segregation in the Helsinki metropolitan area

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ABSTRACT

Regional land use, housing, and transport (MAL) agreements between the Finnish state and municipalities in growth regions guide urban policy in the Helsinki metropolitan area towards regional cooperation and densification. Alongside economic growth and connectivity goals, segregation prevention is a visible but ill-defined social sustainability goal in these agreements, and anti-segregation measures lean heavily on providing new social housing in accessible locations. This tool, in turn, leans on a combination of social mixing, a traditional preventive tool in fighting segregation, and a new tool, maximising spatial justice through transit-oriented development. We argue that there is a discrepancy between these goals: while on an individual level, public transport accessibility is meant to reduce transport poverty and provide equal opportunities for employment and services, accessible areas fare lower than others in socioeconomic status. Therefore, increasing social rental housing in areas with lower socioeconomic status may unintentionally amplify segregation. This article asks how actors of different governance levels view concentrating social housing in accessible locations as a risk to segregation. Interviews show a concern of social challenges not being sufficiently addressed.

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1. Introduction

Densification of urban areas, particularly near centres and good transport connections, has been seen as an alternative to emissions-intensive sprawl, creating a compact city paradigm in urban planning. As in most OECD countries, planning strategies in the Helsinki metropolitan area aim to create transit-oriented development: mixed-use development well-served by transit and conducive to transit riding (Cervero et al., 2002). Recently, the links between density and lowered carbon emissions have received more critique (for Finland, see e.g. Heinonen & Junnila, 2011), and more widely, the link

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between compact urban form and social outcomes has received more scrutiny (Burton, 2000; Cavicchia, 2021; Rice et al., 2020).

Accessibility has been seen as a component of 'good' planning long before the emergence of any of the above concepts (Jacobs, 1961; Lynch, 1960, 1982). Inclusiveness of urban structure for all social groups has been seen as a prerequisite for social justice (Fainstein, 2010; Harvey, 1973). Rawls (1971) defines two principles of justice: '*First: each person is to have an equal right to the most extensive basic liberty compatible with a similar liberty for others. Second: social and economic inequalities are to be arranged so that they are both (a) reasonably expected to be to everyone's advantage, and (b) attached to positions and offices open to all*' (Rawls, 1971, p. 60). This resource-based approach was later criticised for not considering residents' capabilities to use the 'primary goods' offered (Sen, 1993). While 'primary goods' such as transportation and services may be accessible and thus fulfil the social justice criteria, they are not necessarily *useable* due to various barriers. For example, transport unaffordability can result in wider 'transport poverty' (see, e.g. Mattioli, 2021), linked to a risk of social exclusion (Stanley et al., 2011) as well as lower subjective wellbeing (Awaworyi Churchill & Smyth, 2019; Stanley et al., 2011). Accessible locations are, therefore, not always inclusive if barriers to transport opportunities exist.

'Spatial mismatch' has been used in segregation literature to describe situations where certain groups have less accessibility to jobs and housing opportunities, creating a driver for residential segregation (see, e.Galster, 2007a). Further, Skifter Andersen (2002) argues that movement patterns and the unequal distribution of urban qualities may lead to a 'cycle of decay', where incentives for homeowners to avoid certain declining areas will increase. This type of 'sorting' pattern has been argued to have occurred in the Helsinki region during the past decades (Vaattovaara & Kortteinen, 2003; Vilkama, 2011) and has recently been linked to deepening segregation in services, such as schools (Bernelius & Vilkama, 2019). Accessible locations may be bypassed by the well-off in favour of suburban residential environments in return for factors conducive to subjective wellbeing, such as perceived safety (Sallis et al., 2011), green space (Crawford et al., 2008; Schüle et al., 2017; Wen et al., 2013) and leisure satisfaction (Mouratidis, 2019). Services and job opportunities are then reached more often by private transport, both creating an environmental challenge and contributing to a diverging social structure.

In Finland, as in neighbouring Sweden and Norway, agreements between different policy sectors and government levels have emerged on a city-regional level to complement formal land use legislation, addressing problems specific to larger city-regions experiencing rapid urbanisation: a shortage of housing and sustainable transport solutions (Smas, 2017). In Finland, these agreements are called 'MAL' (M: land use, A: housing, and L: transport) agreements. This article explores how transit-oriented development policies such as MAL agreements work from the perspective of segregation in a Nordic welfare state. We look at the conflicting goals of these agreements: increasing accessibility through transit-oriented development and simultaneously fighting growing segregation patterns. Little attention has been given to the possible unplanned effects of increasing accessibility. Our paper will show a clear difference in the socioeconomic status of accessible areas in the subcentre belt in the Helsinki metropolitan area compared to the centre or suburban areas relying on private transport. This finding leads us

to ask: how do policy actors see continued transit-oriented development affecting segregation in the future?

2. Segregation in Finland

Segregation can be defined as the spatial separation of social groups at a spatial level, often assumed to have negative impacts (Tunström et al., 2016, p. 7). Socioeconomic segregation has generally increased in European capitals since the 1990s. It has been linked to aspects such as the degree of globalisation, socioeconomic inequalities, a governmental structure such as the types of welfare and housing regimes, and the degree of professionalisation (Tammaru et al., 2015). Next, we take these factors apart in the Finnish context.

Firstly, the degree of globalisation was relatively low until the 2000s: the Helsinki metropolitan area is located on the margin of the European continent. It does not compete with larger world cities in Europe and is ranked as a middle-tier 'beta' city in 2020 with moderate links between economic regions and the world economy, according to Loughborough University's City Link Classification 2018 (Beaverstock et al., 2020). Immigration has, until the 2000s, been low on a European scale but has risen sharply: the growth of the Helsinki region now depends almost entirely on international migration. Arbaci (2007) assumed that ethnic segregation in the Nordic countries could be attributed to clusters of socially marginalised and segmented social/public housing, called 'the social housing hypothesis'. Compared to other Nordic capitals, Helsinki has a higher share of immigrants in social housing than Copenhagen or Stockholm, but the established small-scale social mixing policy of the city has diluted this segregating effect of tenure concentration (Skifter Andersen et al., 2016).

Secondly, social inequalities have historically been low due to a strong welfare policy tradition dating from the 1960s. The welfare regime in Finland, a social-democratic welfare type, would point to lower levels of segregation (Tammaru et al., 2015, p. 12). However, relative poverty and income inequalities have grown since the recession of the early 1990s. Thirdly, the housing regime characterised by small-scale social mixing set up in the 1970s to tackle local social unrest in the Helsinki suburbs has helped to equalise socioeconomic differences by providing non-clustered social housing, but has experienced retrenchment in the 2000s (Ruonavaara, 2017). Finland falls into the 'dualistic' housing category, with restrictions on the availability of social housing (Arbaci, 2007, p. 416). In practice, all social housing in Finland is subsidised through the Housing Finance and Development Centre of Finland (ARA), responsible for implementing Finnish housing policy under the Ministry of the Environment. ARA funding is usually in the form of interest subsidies and poses restrictions, usually for 40 years. Social rental housing can be 'normal', unrestricted, provided generally by municipalities, or 'restricted', aimed at vulnerable residential groups. Finnish scholars have also pointed to recent marketisation in the housing sector (Hyötyläinen & Haila, 2018), another segregating factor (Tammaru et al., 2015).

Lastly, it is argued that since the late 1990s, professionalisation has contributed to residential segregation, particularly in the Helsinki capital region (Vaattovaara & Kortteinen, 2003). After the start of the 'dotcom' era in the early 2000s, rising

socioeconomic disparities were noted: at the lower end of the socioeconomic scale, unemployment resulting from the 1990s depression persisted, and at the other end of the scale, the high-income, professional elite diverged both statistically and spatially, resulting in neighbourhood-level segregation in Finland (Kortteinen & Vaattovaara, 2000; Kortteinen et al., 1999). Segregation discourse has, in the 2010s, concluded that while segregation in Finland is still at a low or moderate level in international comparison, it is nevertheless increasing and visible in both residential and service differentiation, often intertwined (Bernelius & Vilkama, 2019; Vilkama, 2011).

Social mixing is a widely accepted tool for preventing segregation in Finland. Criticism towards the tool has been two-fold: firstly, while attempts have been made to target the social drivers of segregation, particularly through social mixing and, to a lesser degree, area-based initiatives, structural drivers have been largely ignored (Hyötyläinen, 2019; Vaattovaara et al., 2018). Secondly, despite its prominent role in national and regional segregation policy, here visible through MAL agreements voicing combatting segregation as a goal – evidence of the causal link between social mixing and neighbourhood socioeconomic status is vague (see, e.g. Amcoff, 2021; Galster, 2007b). In Finland, social housing has been criticised for possibly aggravating segregation by clustering low-income housing, as opposed to non-place-based measures such as housing allowance, which allows lower-income households to spread out more evenly across different neighbourhoods according to individual preferences (Eerola & Saarimaa, 2018). Similarly, the preventive nature of traditional social mixing has also been questioned recently: while effective until the 1990s, spatial differentiation has been claimed to be now structural and 'beyond the scope of the preventive policies pursued' (Vaattovaara et al., 2018). In this article, we focus on this critique through interviews: asking how key actors in the MAL process view the segregation situation in the Helsinki region and its manageability with available tools, the central regional tool being MAL agreements.

Alongside preventive measures, equalising measures are often used to even out imbalances between neighbourhoods in housing, service provision or environmental quality. The underlying belief is similar to social mixing: neighbourhood circumstances, either social or physical, can affect individual outcomes. Area-based initiatives have an established history in Finnish segregation management and social mixing. They are currently also used as a MAL tool: the Suburban regeneration programme, an extension of a similarly-named programme started in Helsinki in the last decade, aims to help deprived ways in a more holistic, strategic way. In addition, the Ministry of Environment's Neighbourhood renewal programme funds smaller research initiatives to provide knowledge on the mechanisms behind deprivation in neighbourhoods. The need for area-based initiatives to equalise (unacceptable) differences neighbourhoods in the Helsinki region is descriptive of the shift from preventive social mixing strategies to reactive, equalising measures to keep the diverging situation under control.

3. Guiding growth through MAL agreements in the Helsinki region

The Helsinki metropolitan region (Figure 1), including 16 municipalities, has a population of 1.6 million residents (Statistics Finland, 2022). Population increase has resulted in urban expansion at the expense of green areas. Despite densification efforts, the region expanded its built-up area at a similar rate to its population growth during the early 2000s rather than densifying (Tiitu, 2018). This concern has been widely reflected in planning guidelines on the state, regional and municipal levels, and the fragmented development was also a driver for the first MAL agreements in 2010 initiated by the state (Hemminki & Lönnqvist, 2022). The MAL agreements' primary goal is to increase cooperation between municipalities in urban regions and the central government by specifying the goals of land use, housing production, and transport networks for a specific period (Lawson & Ruonavaara, 2020, p. 51). In the agreements, the state provides infrastructure and social housing funding in return for regional collaboration. The content of the agreements leans heavily on the causal relationship between densification and environmental sustainability and, to a lesser extent, the traditional tool of social housing as a cure for segregation.

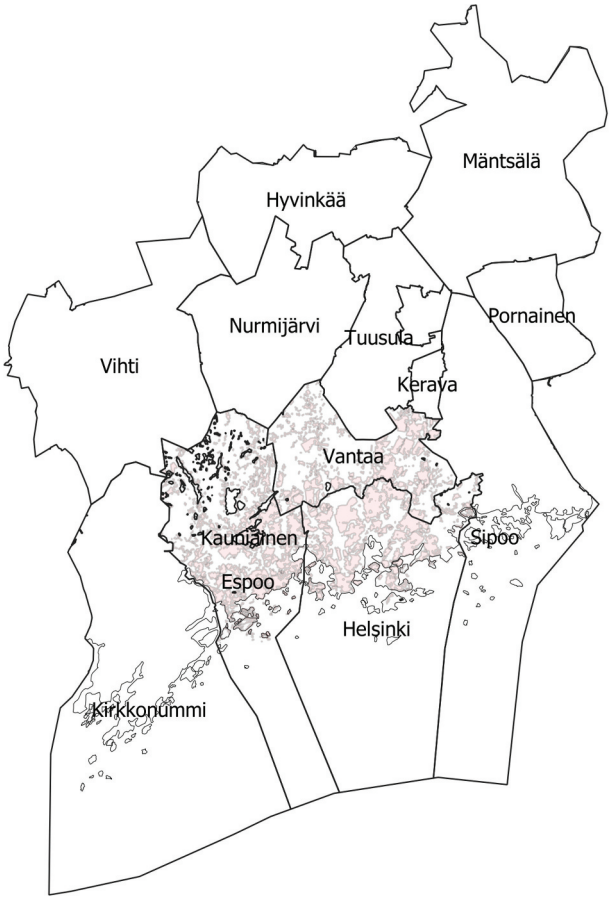

Figure 1. The four central municipalities of the Helsinki metropolitan area (Helsinki, Espoo, Vantaa and Kauniainen) and the fourteen municipalities of the Helsinki MAL agreement.

The MAL process consists of two elements: agreements and plans. A clear distinction should be made between the two. The new MAL agreements are 12-year agreements, and upon signing an agreement, the municipalities agree to start a planning process where the pathway to MAL targets is planned. The MAL agreement is short, includes quantitative targets for housing and infrastructure , and is negotiated at the highest political level. The MAL planning process is a longer collaboration with different subgroups preparing different themes. The Helsinki region's MAL23 plan, is being finalised at the time of writing.

Regional urban growth is also guided by a regional spatial plan covering the 14 MAL municipalities (Uudenmaan liiito, 2020). However, the legal framework in Finland has traditionally provided municipalities with wide autonomy, reflected in land use planning and other urban policies such as housing. Recent MAL agreements have not swayed this autonomy. While ambitious (social) housing targets are set in the agreements, decisions on how these targets are met remain at the municipal level, as regional cooperation does not currently extend to housing. While municipal spatial planning must follow a collaboratively formed regional plan, this plan does not include housing policy: each of the 14 municipalities of the Helsinki region's MAL agreement controls how housing is distributed within their borders. As anti-segregation goals have mainly been operationalised through social (tenure) mixing in Finland, a lack of regional housing policy may present a problem to fighting segregation, which we will explore in interviews in more detail.

MAL agreements lean on infrastructure investment (Hemminki & Lönnqvist, 2022, p. 46), but also address social sustainability, albeit superficially. The Helsinki agreement targets social sustainability through goals such as diversity in neighbourhood demographic structure and housing provision to the most vulnerable groups, including the homeless. The agreement mentions combating segregation with three tools: providing a diverse housing supply, developing transportation links, and developing zoning to ensure accessible services to different demographic groups and ensuring the accessibility of recreational services (Finnish Ministry of the Environment, 2020, p. 8). In their recent book on cities and policy, Vaattovaara et al. criticise the agreements for including very general, non-explicit goals (Vaattovaara, 2021, p. 196), where a void of goals causes measures to transform into goals. They call for a long-term vision, which the agreements could then implement. They also call for more qualitative goals for the living environment and 'minimum criteria' for new housing (Vaattovaara, 2021, p. 177). The MAL23 plan draft has elaborated on the social dimension: segregation, demographic changes, movement patterns, and housing preferences. Of these themes, segregation is the only variable monitored regionally.

Both segregation prevention and accessibility are goals of MAL agreements. The central tool for preventing segregation is a substantial increase in social housing in accessible locations (Finnish Ministry of the Environment, 2020). In the Helsinki region, the MAL agreement is ambitious regarding social housing as a cure for segregation: an increase of 2 percent yearly of total housing stock in the core municipalities of Helsinki, Espoo, Vantaa, and Kauniainen(see Figure 1), of which 30 percent should be 'affordable' (Finnish Ministry of the Environment, 2020). Besides a substantial increase in social housing in the Helsinki region during the 2020s, the MAL agreement also dictates the geographical location of development: 90 percent of new housing should be located

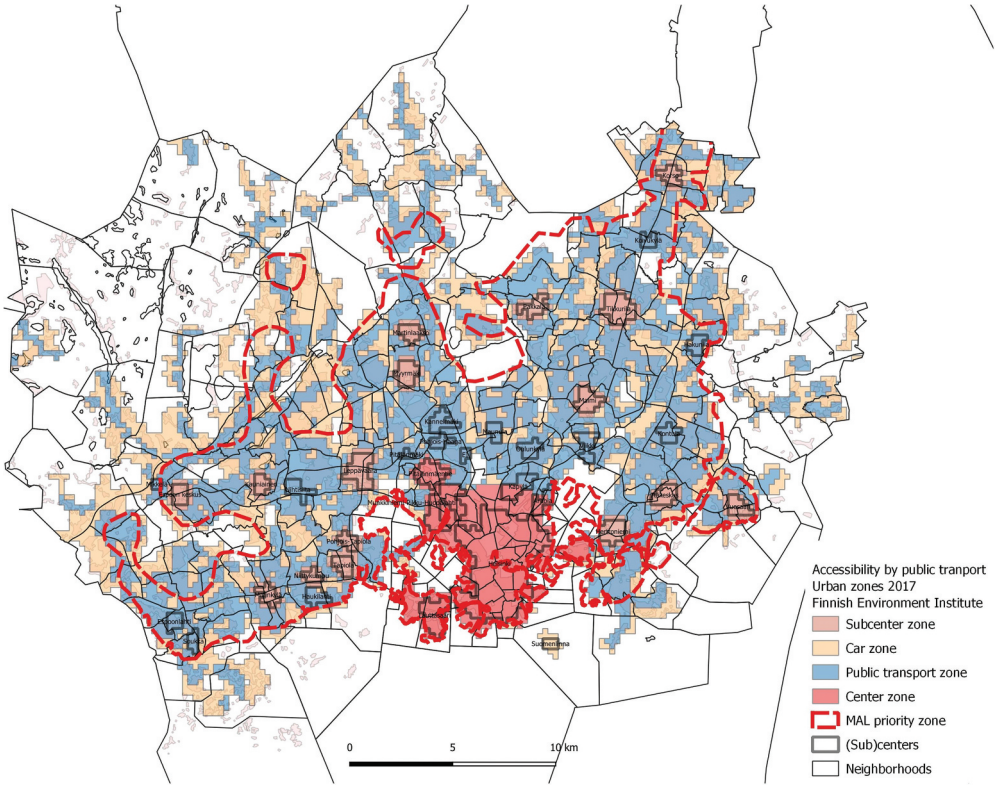

Figure 2. MAL priority zones, centre structure and travel-realted urban zones of the Helsinki metropolitan area.

within the 'priority zones', areas of high public transport accessibility (Figure 2). The background to this sharp increase in social housing is both rising demand through population growth, particularly through immigration, and a shrinkage of the share of the social housing pool during the last decade (ARA, 2021). The share of state-funded 'normal' social housing (not aimed at special groups such as students, the elderly or those needing assisted living) in the Helsinki region is currently 65 percent of a constantly shrinking pool of social housing (Finnish Environment Instiute, 2022). At the same time, rising housing prices have made social housing the only affordable housing option for many income groups, and queues in the core municipalities are long. In 2021, municipalities in the Helsinki region met 85 percent of the MAL housing target. In particular, there has been a large deficit of built social housing: 17 percent versus a planned 30 percent (HSY, 2021). Possible reasons for the shortfall were, according to the coordinating and monitoring regional body HSY, a general overheating of the property market, increases in production costs and planning requirements (HSY, 2021).

4. Research framework

We focus on the following research questions in this article: (1) the link between accessibility and socioeconomic status is in the Helsinki metropolitan area and (2) the

risk of accessibility amplifying segregation through the clustering of social housing, as viewed by central actors in the Helsinki region's MAL process.

To answer the first research question, we explore the connections between accessibility and the neighbourhood population's urban, housing and social profiles using register-based data from Statistics Finland.[1] Individual-level sociodemographic data was aggregated to the neighbourhood level using the administrative subdivisions of the cities of the Helsinki metropolitan area (see Figure 1). Two spatial classifications measure accessibility: firstly, centre zones (Finnish Environment Institute, 2018), which are formed based on population, employment and service density and secondly, travel-related urban zones (Finnish Environment Institute, 2017), where urban fabric is divided into pedestrian, public transport and car zones according to criteria based on, e.g. centre distance and the public transport supply.[2] The centre and subcenter zones accommodate pedestrian and bicycle transport, while the public transport zone enables good public transport services during rush hour. The car zone does not enable the former transport modes and relies on private transport. The travel-related urban zones have been developed nationally by the Finnish Environment Institute and used to monitor the development of urban form (e.g. Ristimäki et al., 2017). Additional physical urban factors used in the analysis include residential density, the share of multi-storey apartment buildings (Statistics Finland), and the amount of green area per resident (Copernicus Programme, 2018). Indicators of neighbourhood housing profile include tenure shares for all rental housing, social (rental) housing and free-market housing (Statistics Finland). Neighbourhood socioeconomic status is viewed through various indicators: income, low-income households, employment, education level, the share of immigrants and single-parent households (Statistics Finland).

To answer the second research question, we use 14 interviews of MAL actors to understand the role of the MAL process in managing segregation. In addition to interviews, we use publicly available policy documents relating to the MAL process. Here, it should be noted that because of the unofficial role of MAL agreements in legislation, there are no formal public participation requirements and documentation was scant compared to official legislation-driven land use planning processes in Finland. Therefore, interviews of central actors were essential to fully understand the discourse and functioning of the agreement-based MAL process. The interviews were performed in late 2022 through online remote interviews (Zoom application). The participants were identified by their role in the MAL process and their understanding of housing and segregation themes. Three external experts, four state-level representatives, two regional-level representatives and five municipal-level representatives were interviewed. At least one municipal-level representative from each central municipality (Helsinki, Espoo and Vantaa) involved in housing within the MAL process were interviewed. The interviews lasted from one to two hours, were semi-structured and contained questions from three themes derived from policy documents: MAL objectives, social sustainability within MAL and segregation. These themes also served as high-level groups in the content analysis. The interviews were recorded and then transcribed. Each interviewee was anonymised and allocated to a group: state-level, regional-level, municipal-level, or external interviewee (interviewee involved win the MAL process but outside public government). Content analysis was used to structure results (see e.g. Schreier, 2012). The coding framework was data-driven: it was initially constructed based on the MAL policy documents and then divided into further sub-themes based on the content of the interviews.

Table 1. Urban physical structure, housing profile, socioeconomic profile u in the HMA and accessibility, as measured by travel-related urban zone and centre type, 2018 (weighted by number of housing units).

		By travel-related urban zone				By center type			
	HMA mean	Central zone	Subcenter zone	Public transport zone	Car zone	Center	Large sub-center	Small sub-center	Outside
Density (residents/ha)	89	164	75	57	39	190	83	67	52
Units in shared, multi-storey buildings, %	76.1	97.2	83.2	64.2	36.6	98.2	87.4	79.3	54.2
Green area per resident, m2	313	53	84	320	2306	38	93	102	724
Tenant households, %	45.1	51.7	47.5	42.2	26.2	53.0	49.2	49.8	35.7
Free market rental units, %	25.8	37.9	27.7	19.2	15.0	40.7	29.5	23.0	16.4
Social housing units, %	17.8	10.1	18.9	22.5	15.0	7.7	18.5	26.0	18.5
Median employment income (25-59 yrs), €[3]	35550	37544	33873	34357	41506	37266	34263	32703	36958
Lowest income quintile, (all ages), %[4]	17.1	15.5	19.1	17.8	11.8	15.8	18.5	21.3	14.8
Low education level, (25-59 yrs), %	16.1	9.7	18.9	19.0	13.6	9.8	17.3	20.1	16.5
Unemployment (25-59 yrs), %	8.5	6.7	9.6	9.1	6.8	6.9	9.1	10.4	7.9
Residents born in Non-western countries (25-59 yrs), %[5]	9.7	5.1	12.9	11.0	7.7	5.1	11.7	13.2	8.8
Residents born in Non-western and E. European countries (25-59 yrs), %	17.8	9.0	22.9	21.0	14.8	9.1	20.6	23.3	17.6
Single-parent households, %	30.9	30.6	33.3	30.9	22.2	30.9	33.0	33.6	27.9
Residents leaving neighbourhood within 1 yr, %	14.3	17.4	14.5	12.8	10.7	18.6	14.9	13.6	12.0

5. Results: accessibility and socioeconomic status

Our results show that accessible areas have more dense, mixed-use development and higher level of services, following the transit-oriented development principle. Both of the accessibility indicators used are linked to residential density, the share of multi-storey housing, and the amount of green space per resident (Table 1). Looking more closely at the link between socioeconomic development and accessibility, socioeconomic status (SES) is generally lower than average in neighbourhoods in the subcenter or public transport zones. This applies to all SES indicators. Measured by centre type, the centre and the outside zones contrast with the small or large subcenters.Measured by travel-related urban zone, the central zone and car zone show a higher SES than the subcenter or public transport zone. Taking these SES indicators apart, median income is highest in the centre and, on the other hand, in the outside zone. The share of residents in the lowest income quintile, education levels and unemployment levels follow the same pattern: the subcentre and public transport zone fares lower than the dense center or the sparse car zone on the fringes.

Regarding housing profile, the share of free-market tenants is highest in the centre and lowest in the car or outside zone, depending on the accessibility indicator used. Thus, free-market rentals are concentrated in the subcentre or public transport zone. Social housing shares, however, differ from free-market rentals in that social housing shares are low in the centre. This is understandable, as social mixing was established in Helsinki in the 1960s and applied primarily in the peripheral 'forest suburbs' initially, most of which belong to

subcenters today. Social housing is most common in the subcentre or public transport zones. The centre type further reveals that social housing shares are highest in small subcenters.

In short, the public transport and subcenter zones, and particularly the small subcenters within the subcenter zone, have the lowest SES levels and the highest share of social tenants. For several reasons, the subcenter zone is the fastest-growing zone in the region, likely to continue inward expansion through infill development. In addition, transit-oriented development principles operationalised through e.g. MAL targets guide development into accessible areas. This subcenter zone with high accessibility is currently also the most socioeconomically disadvantaged zone, raising questions about the possible clustering of deprivation in the future. We will explore these risks further through interviews with MAL actors.

6. Results: MAL and segregation

In the next section, we build on the statistical results of the previous section and ask MAL actors how they view the risk of increasing accessibility, led by MAL agreements, in amplifying segregation development. First, we aim to understand the level of concern and the social risks associated with transit-oriented development. We ask which tools are used to fight segregation, perceived obstacles to their use, and ask for suggestions on ways forward.

Overall, we find a shared concern on all governmental levels over increasing segregation: *'There are signs of parallel realities being born'* (external interviewee). This shared concern is expected, as interviewees are from within the MAL establishment, and segregation has been raised to a high level in the latest MAL agreements. Segregation is also the only social sustainability indicator evaluated and monitored in MAL planning, further enhancing its role. While the segregation situation is not yet out of hand, according to the monitoring variables used, the perceived situation is worse than indicators show and is slowly deteriorating: '*Bit by bit differences are growing, very moderately. The trajectory looks quite stable but also quite established. . . Even with all we do, the gap grows continuously and slowly. However, thanks to all we are doing, the gap isn't being ripped open. . . I feel that we are slowly crashing into a wall, so I am a bit worried. But at the same time, you can't really say, because these [indicators] show a pretty moderate and stable situation'* (municipality).

One interviewee sees several layers in segregation: *'One is the internal segregation of a municipality, and the other is on the regional level, for instance, the central and peripheral municipalities become segregated*' (external interviewee). Alternatively, as a state interviewee defines it, *'segregation on the large scale'* and at the level of municipalities. Municipalities feel they have varying capacities to deal with the spatially balanced allocation of social rental housing: while social housing shares are monitored in all municipalities on some level, in practice, the allocation is driven by municipal commitment and resources, which do not guarantee the implementation of the 'balanced neighbourhood development' goal of MAL agreements. Despite MAL agreements having brought together municipalities in fighting for a common goal, the increase of (affordable) housing stock, there were still remnants of 'taxpayer optimising': *'Single-family dwellers are preferred. . . municipalities prefer certain taxpayers – single-family housing*

would solve the problem. There is a strong attitude that one housing type is better than the other' (municipality).

There is a broad understanding among interviewees of segregation being visible in housing but having structural causes needing attention. When asked which segregation prevention tools were primary, many interviewees stressed that while segregation was most visible in housing, underlying structural inequality needed to be addressed through various governmental sectors: service equality (schools were often mentioned), safety, and assimilation of immigrants. However, the traditional tool, tenure mixing, remains strong: '*It's written strongly into the city strategy, that we can target with resources those who need them the most . . . in schools, and in the social sector, we can resource according to needs, in a way positive discrimination . . . And then we have this Urban regeneration programme, which is heavily resourced. Furthermore, tenure mixing, I'm not saying it's the primary tool; of course, the resources going into the root causes of segregation are most important. However, from my viewpoint, tenure mixing - and a principle that hasn't been applied in all cities, that ARA housing is brought into even the best areas, strongly steering housing production from a segregation point of view'* (municipality).

Segregation is recognised among most interviewees as a complex phenomenon requiring comprehensive monitoring to understand all affecting factors. According to interviewees, segregation overall is monitored within municipalities, and many municipalities have active development around the subject. There is, however, a large variance in which indicators were monitored, with economic, educational and employment indicators being the norm. Immigration-related indicators and the distribution of social housing by neighbourhood are also often monitored. Additionally, many interviewees feel that knowledge on segregation is not robust enough and welcome input from the academic research sector, which they rely on heavily. According to a state interviewee, research projects are insufficient, as they are 'ad hoc' rather than systematic attempts to gather knowledge on a certain field over an extended period. Interviewees recognise possibilities for closer collaboration between municipalities, but funding obstacles and data privacy questions must be tackled first: *'In Finland, we don't have enough indicators for this purpose. And what we can monitor, we can't present publicly'* (municipality). Moreover, the ability of municipal actors to apply knowledge of segregation in decision-making processes is sometimes impaired by its sensitivity and, therefore, internally and externally classified nature. In municipalities, segregation indicators were often viewed as sensitive, with actors expressing fear of their misuse ('*dynamite in the wrong hands'*). Many, however, felt the need to discuss data accessibility more closely.

Nearly all interviewees mention some form of risk to the housing production targets of MAL agreements. The most named risk has to do with the quantitative housing targets becoming a primary concern, at the expense of housing quality: '*And then you can distinguish the quality. In Jätkäsaari, you can distinguish what is ARA . . . they look cheaper'* (state). Several interviewees connect housing quality to neighbourhood density: a common concern was whether density goals had overridden quality goals. One external interviewee draws a parallel between the Finnish 'lähiö' (forest suburb of the 1960s and 1970s) and the new dense, clustered development around transport nodes: *'I am a bit worried about creating very dense areas if the criteria is mainly public transport accessibility . . . are we sowing seeds for . . . another urban regeneration problem, which we are {at present] trying to fix and change in every way in the old suburban estates?'* (external

interviewee). This interviewee questions whether dense development is dense enough to bring about a city-like urban structure despite being accessible. Was the Finnish suburban development model of the 1960s and 1970s, which had recently been the target of various area-based initiatives due to concentrated deprivation, now being repeated through the transit-oriented development goals of the MAL agreements?

7. Results: accessibility and segregation in the HMA

Accessibility is generally seen to further social justice if public transport prices are reasonable. However, the increasing price of public transport is seen to increase transport poverty: *' It's clear that in Helsinki, with the price rise of public transport, many cannot afford it anymore. You can see it now, and it has been visible for a while that from some areas and some [groups], they do not leave their neighbourhoods . . . '* (state). Where there is criticism towards the housing production targets of MAL agreements as effective segregation management tools, the most commonly named factor is the location and distribution of new social housing: concentration of certain types of housing is often seen as a risk: '*If affordable housing started to cluster in some areas, then there would be a risk. That is why we have geospatial indicators to monitor where ARA is produced. . .but we have woken up to the fact that other housing can also be a risk. In order to get a multi-dimensional picture, we have tried to understand where these clusters of studios are growing*' (regional).

The MAL priority zone, where 90 percent of new housing production is designated in the agreements, treats municipalities differently. In some municipalities, such as Helsinki, nearly the entire area falls into the zone, while in the fringe municipalities, only centres are in the priority zone (Figure 2). This leads to different planning implications: while in Helsinki, the municipality is free to distribute housing as it deems best, in the smaller municipalities, MAL guidelines risk concentrating new development in smaller areas. One municipal interviewee does not see MAL social housing allocation guidelines as a problem in their city but understands the concerns of smaller fringe municipalities: '*If they have one dense centre and [all new housing production] has to cluster there – it can be a problem in the long term — that they have less geographic locations to distribute ARA housing among*' (municipality). The situation was slightly harder in another central municipality: '*I don't see a segregation risk if it [new affordable housing] would be evenly distributed across the primary zone. But it's not distributed evenly*' (municipality).

According to interviewees, applying the social mixing tool is not always easy. High quantitative goals are mentioned several times in terms of obstacles to social rental housing development. Municipal land ownership varies considerably within the region, with municipalities with poor land ownership having less capacity to steer and subsidise social rental housing in expensive locations with a systematic and long-term land policy. Low ARA-defined cost levels exclude many 'good' locations unless the municipality subsidises these locations actively: *'These ARA units are hard to build because costs rise too high . . . when we have a lot of environmental and cityscape requirements and so on, the prices rise outside ARA cost limits'* (municipality). Therefore, social housing faces being zoned on leftover land, which could lead to segregation: '*ARA is left with the plots where no one else builds. And that can segregate even within one neighbourhood*' (state). Despite being politically difficult, several interviewees feel that social housing needs to be more ambitiously added to existing areas, as

concentrating social housing in new areas under heavy redevelopment contains various risks: in addition to segregation, gentrification is also mentioned.

Among other risks, the spatial clustering of immigrants is connected to shortages in public services, such as social care and education. School segregation is currently debated in Finland, with growing concern over foreign-language students concentrating in certain schools, potentially triggering out-moving patterns of the Finnish-born middle class (see, e.g. Bernelius & Vilkama, 2019). One municipal interviewee points to differing housing preferences: for example, large family units typical in 1970s multi-storey housing could cause clustering ust as small units could, additionally resulting in public service shortages: *'If there are many big family housing units like those large ARA flats built in the 1970s, then we have a real problem if there are a lot of immigrant families in them. then We have trouble with schools offering assimilating primary education, as there might not be enough pupil openings in that particular area* ' (municipality).

How could balanced neighborhood development be better furthered through the MAL agreements to control segregation? While improvements apply to the local level, such as better commitment to self-imposed goals, most interviewee suggestions would require stronger guidance from the state. When asked for potential additional tools, interviewees name larger structural changes requiring a state approach and legislative changes, such as a new metropolitan governance model or a regional housing policy, as well as more local approaches such as service levels, neighbourhood quality, safety, employment, education, strategic area-based initiatives, new housing ownership models to make ownership more universally accessible as well as an increase in knowledge. Finally, many interviewees share the view that the MAL process alone does not determine segregation development: there is much scope outside of MAL to deal with issues such as quality and attractiveness of areas: *'It's probably a reality that MAL agreements are not the final word in this age of social segregation. We need to understand its limits and see what can be done after. But MAL agreements should not block or slow down segregation measures'* (state).

8. Concluding discussion

This paper focuses on one unplanned social effect of transit-oriented development: segregation. Accessibility has long been seen as a component of 'good' planning, optimally providing inclusiveness and equal opportunities across social groups. Despite access to services and transport, certain groups may experience exclusion from these opportunities due to transport unaffordability or other barriers (Mattioli, 2021; Stanley et al., 2011). Our interviewees believe this is also the case in the Helsinki region, despite MAL agreements building on fighting segregation through a substantial increase of social housing in accessible areas.

We established a clear link between accessibility and neighbourhood socioeconomic status in the Helsinki metropolitan area: neighbourhoods conforming to transit-oriented development principles in accessible locations have a lower socioeconomic status, diverging from the centre and outer areas relying on private transport. Through interviews of actors in the Helsinki region's MAL process, we then studied the gap between the agreement's social goals (preventing segregation), and its means of creating spatial equality through transit-oriented development. While affordable public transport accessibility is seen, more often than not, as a tool to achieve spatial equality on an individual level among MAL actors (preventing 'spatial

mismatch'), the effect of clustered housing development prescribed in MAL priority areas raises various societal concerns in the long term. It is generally felt among interviewees that the spatial distribution and quality of new housing needed to be addressed in some way: the situation '*could not be defined as satisfactory in a situation where the affluent middle-class was on the move*' (external interviewee).

More often than not, future segregation amplified by MAL-imposed social housing goals was seen as possible, mainly due to a lack of regional coordination of housing location and quality. Thus, transit-oriented development aimed at avoiding 'spatial mismatch', where certain groups would have less accessibility to jobs and housing opportunities, could also function as an unintended driver for further segregation if poor urban quality led to a 'cycle of decay' (Skifter Andersen, 2002), with increasing 'flight' of the well-off from declining neighbourhoods. Fringe municipalities in the Helsinki region have attracted the middle class in recent decades through detached, socially homogenous housing at the expense of denser areas, causing 'sorting' patterns conducive to residential and service segregation (Bernelius & Vilkama, 2019; Vaattovaara & Kortteinen, 2003). Simultaneously and related to the former process, Finnish 'forest suburbs' built in the 1960s to 1980s have experienced a 'cycle of decay' (Kemppainen, 2017; Stjernberg, 2019) and have therefore been targeted with various area-based interventions aiming to equalise socioeconomic differences and improve urban quality and accessibility. The MAL23 plan for the Helsinki region also includes area-based initiatives relying on transport investments and diversification of tenure structure in the forest suburbs'. A risk voiced in our interviews is that of dense, homogenous transit-oriented development prescribed by MAL agreements causing an acceleration of present sorting patterns, increasing rather than equalising segregation development. In the worst case, a new 'cycle of decay' could call for additional reactive social interventions in new accessible neighbourhoods at a later stage, according to our interviewees.

While MAL agreements have arguably tackled competition between municipalities and 'taxpayer optimisation' successfully by increasing regional cooperation, their role in tackling conflicting goals such as accessibility and segregation is seen less favourably by interviewees. Helsinki has been regarded as a model for long-term social mixing, but in practice, new state-led planning models such as MAL seem to lead to social mixing goals being viewed as secondary to quantitative housing provision targets in the metropolitan area. Further, social mixing goals are even more inferior to accessibility and economic targets: '*transport investments are made in places where they best serve land development. In practice, it means zoning housing like mad around transport investments*' (municipality).

Although segregation prevention is named as a principal goal in MAL agreements and our interviewees view the segregation situation in the Helsinki metropolitan area as increasingly worrying, interviewees see the role of the MAL process in tackling segregation as limited. It is stressed from many directions that the minimum role of the agreements should be not to *hinder* anti-segregation efforts. Therefore, containing segregation development is seen more as a constraint to the main goal, transit-oriented development, than the self-standing goal it is presented as in the MAL agreements. It is also a firm departure from the traditional preventive role social mixing played in segregation in Helsinki in the past.

In the authors' view, a deeper impact on segregation patterns would require a better definition and analysis of the problem, enabling explicit goal-setting. Secondly, solving multi-faceted problems such as segregation would require impact assessments recognising multiple

and occasionally contradicting goals: in our case, for example, a tool promoting spatial equality for individuals in the short term (accessibility) may have adverse societal effects in the long term if not implemented carefully (segregation). Recognising possible adverse effects would help to mitigate them. Thirdly, we agree with interviewees that local governments lack the tools and coordinating power needed to alter regional issues such as segregation. This coordination is only possible on the state level in Finland: as a municipal actor describes: *'We are probably at the last stages, and we really should be acting . . . we are shouting in the state's direction: we keep discussing but not doing anything . . . howsurvival is a big question for us.'* The state has acknowledged segregation as a regional urban policy objective alongside transit-oriented development but has not defined segregation nor provided municipalities with the means to deal with this complex problem. Lastly, the prescribed anti-segregation tool, social mixing, was developed in Helsinki in the 1960s, and both social structure and the urban policy context have changed considerably since then. In the current heterogeneous demographic situation, re-evaluating the social mixing tool could help bring about more nuanced and updated solutions to the segregation problem in its current form.

Notes

1. license TK/2958/07.03.00/2021
2. Zones are formed and combined from 250 × 250 m grids data on services, routes and timetables of public transport. The public transport zone illustrates the supply of public transport at rush hour and is not indicative of the demand for public transport. The data covers 34 city-regions in Finland and is open access. The used zones reflect the urban form in 2017 and the public transport supply at the beginning of 2019.
3. Median employment income includes earnings and entrepreneurial income.
4. Share of residents belonging to lowest national quintile of equivalized household monetary income (quintiles based on individuals).
5. Residents born in Asia, Africa, Latin America, Caribbean or Oceania(excluding Australia and New Zealand).

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