THE IMPORTANCE OF MONITORING NEIGHBOURHOOD CONDITIONS FOR CHILDREN'S WELL-BEING AND DEVELOPMENT

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Child Well-being Policy Papers

This paper makes the case for an OECD-wide monitoring framework of the quality of children's local environments to aid national and local policy makers in building child-friendly neighbourhoods, and especially in attenuating geographical disparities and providing additional support to children in disadvantaged areas. It first presents the neighbourhood elements that impact children's well-being, development, and later life outcomes, which encompass aspects of the built environment, communities' social relationships and children's access to basic services such as schools and health services. The paper also explores reliable metrics for each of them. Drawing lessons from an analysis of existing national and subnational monitoring initiatives, the paper then examines available, cross-national indicators that could inform an OECD-wide monitoring. Finally, the various insights that a cross-national monitoring could provide to policy makers to facilitate resource allocation, collaboration across sectors and levels of government, and cross-country learning with respect to effective policy tools are illustrated with a few examples.

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Abstract

This paper aims to support national, regional, and local governments looking to invest in children's local environments. First, it outlines the neighbourhood elements that matter for children's well-being, development, and later life outcomes in a conceptual framework. It then explores reliable metrics for these neighbourhood aspects to map and monitor geographical disparities. Informed by existing monitoring initiatives, the paper makes the case for an OECD-wide monitoring framework of the quality of children's local environments to guide policy makers in providing additional, targeted support for children in disadvantaged areas, coordinate policy interventions across sectors and levels of government, and facilitate cross-country learning in regard to effective measures to build child-friendly neighbourhoods. To this end, it provides an initial assessment of the availability of relevant cross-national data and presents examples of policy-relevant insights that can be derived from such cross-national indicators.

Résumé

Ce document vise à soutenir les gouvernements nationaux, régionaux et locaux qui cherchent à investir dans l'environnement local des enfants. Il présente tout d'abord les éléments du quartier qui ont une incidence sur le bien-être, le développement et les résultats ultérieurs des enfants dans un cadre conceptuel. Il explore ensuite des mesures fiables pour ces aspects des quartiers afin de cartographier et de surveiller les disparités géographiques. S'appuyant sur les initiatives de suivi existantes, le document plaide en faveur d'un cadre de suivi de la qualité de l'environnement local des enfants à l'échelle de l'OCDE, afin d'aider les décideurs politiques à apporter un soutien supplémentaire et ciblé aux enfants des zones défavorisées, de coordonner les interventions politiques entre les secteurs et les niveaux de gouvernement, et de faciliter l'apprentissage entre les pays en ce qui concerne les mesures efficaces visant à créer des quartiers accueillants pour les enfants. À cette fin, il fournit une première évaluation de la disponibilité de données transnationales pertinentes et présente des exemples d'informations utiles à l'élaboration des politiques qui peuvent être tirées de ces indicateurs comparatifs.

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1. Why neighbourhoods matter for children's well-being

Children's well-being is deeply influenced by the environment in which they live (OECD, 2021[1]). Their growth and development take place within the interconnected contexts of family, school, community, and neighbourhood. Among these, the neighbourhood holds particular significance for multiple aspects of children's well-being and development. Its material, social, and institutional conditions create a "social habitat" that profoundly shapes children's daily experiences and overall quality of life (Box 1).

Growing up in disadvantaged neighbourhoods affects several aspects of child well-being (Minh et al., 2017[2]; OECD, 2021[1]; Leventhal, Dupéré and Brooks-Gunn, 2009[3]). It is detrimental to children's **physical and mental health**, manifesting for example in lower birth weight, greater prevalence of chronic respiratory problems, higher cortisol levels, greater internalising behaviour (e.g., depression, anxiety, withdrawal, somatic problems), and particularly so for children with socio-economically disadvantaged backgrounds and in neighbourhoods where different forms of disadvantage concentrate (Roubinov et al., 2018[4]; Xue et al., 2005[5]; OECD, 2021[1]).

Neighbourhood disadvantage is also impacting children's **cognitive and socio-emotional development** by influencing language development, school attendance and behavioural outcomes (Minh et al., 2017[2]; Christian et al., 2015[6]). For instance, based on county-level data for the United States, Donnelly et al. (2017[7]) found that growing up in a county with high upward mobility is linked to fewer externalising behavioural problems (aggressive, destructive and rule-breaking behaviour) by age 3 and significant improvements in cognitive test scores between ages 3 and 9. Living in a county with one standard deviation better neighbourhood reduces the income-related gaps in children's literacy and behavioural outcomes by about 20% by the time they reach 9 years old.

Growing up in disadvantaged neighbourhoods from the early years can have **long-lasting consequences** for children's later lives. Starting with the neighbourhood experiences of pregnant women, which can cause higher risks of low birth weight in children in deprived areas, early health effects can impair broader aspects of long-term development, including cognition, attention, and neuromotor functioning. (Hack, Klein and Taylor, 1995[8]; Wallerich et al., 2023[9]). Neighbourhoods also shape children's norms, expectations and life choices, and peer effects can lead children in disadvantaged neighbourhoods to invest less in their education (Calvó-Armengol, Patacchini and Zenou, 2009[10]; Conley et al., 2023[11]; De Giorgi, Pellizzari and Redaelli, 2007[12]). Similarly, community social norms may lead individuals to choose marriage and parenthood at a younger age (Buyukkececi, 2022[13]; Frank F. Furstenberg Jr., 2010[14]; Harding et al., 2021[15]; Chetty, Hendren and Katz, 2016[16]; Chetty and Hendren, 2018[17]). Neighbourhood conditions can also affect children's later employment outcomes as adolescents often secure their first job in the local community. Disadvantaged neighbourhoods with weaker local labour markets provide fewer opportunities to children to acquire early work experience (Deutscher, 2018[18]).

Box 1. Putting a well-being lens to neighbourhoods: defining neighbourhoods and the impacts of social habitats on people's well-being from the early years of life

There is no single definition of neighbourhoods. Local communities' identifications of neighbourhood boundaries are often highly flexible and context dependent, rooted in a subjective sense of place and tied to, for example, social interactions and identities (The Young Foundation, 2010[19]). In contrast, administrative boundaries of neighbourhoods clearly delineate geographical areas, but they risk omitting significant, policy-relevant aspects of children's lived realities (Baffoe, 2019[20]). For example, when assessing the availability of local factors such as services, isolated information on a specific administrative unit can hide residents' access to the services and amenities available in another area close by.

In this paper, we conceptualise neighbourhoods as the environments that compose children's and families' daily radius and shape their local experiences. While we generally use the term 'neighbourhood' in that way, there are two exceptions. First, the literature review in section 2 reports findings on neighbourhood impacts from various studies that all tend to rely on slightly different metrics to approximate children's daily radius. Second, when analysing available cross-national data to monitor children's neighbourhood conditions (Section 3), we draw on information on administrative geographical units at municipality or regional level as these data are most readily available and ensure that insights correspond to policy making responsibilities, making them actionable. Such monitoring data can offer valuable information to decision makers for the design effective policies, especially when they complement these insights with their knowledge of and more nuanced information on communities lived realities that can help better identify the various impacts of specific environments on children.

Indeed, neighbourhoods are shaped by the physical, social, and economic aspects of the environment where residents live and build daily connections – effectively creating "social habitats" (Kaplan, 2023[21]). Each neighbourhood possesses a distinct social habitat, significantly influencing how people interact, behave, and impacting a wide range of elements, including safety, community support, youth influences, collective problem-solving, and the residents' ability to influence the provision of essential services from the government. These social habitats are especially pivotal during the formative years of infants and children.

Strong social habitats nurture strong families, local networks, and institutions, facilitating connections with individuals and sources of influence beyond the neighbourhood. They foster cooperation, trust, mutual support among both residents and businesses, instil a sense of security, belonging, and purpose, promote skills and norms conducive to residents' success in the broader society, and attract various investments and residents with diverse socioeconomic backgrounds and life stages. Conversely, fragile neighbourhoods exhibit the opposite characteristics, making it challenging to maintain stable families and raise children. In such areas, residents often grapple with stress, mistrust, frustration, and an overarching sense of insecurity (Kaplan, 2023[21]).

Inequalities between neighbourhoods can be significant, affecting not only children's immediate well-being but also, more profoundly, their pathways and opportunities in life (Brandén, Haandrikman and Birkelund, 2022[22]; Chetty and Hendren, 2018[23]; Laliberté, 2021[24]; OECD, 2018[25]). National evidence suggests that, in some countries, neighbourhood inequalities are among the largest determinants of social mobility. Chetty and Hendren (2018[17]) estimate neighbourhoods to matter half as much as parental income for the upward social mobility of children in the United States. Additionally, the impact of neighbourhoods on children may generate increased policy attention in light of climate change, which disproportionally affects

children in disadvantaged neighbourhoods and poses serious threats to children's development, well-being, and right to a healthy environment (Défenseur des droits, 2024[26]).

This paper aims to offer support for policies that enhance neighbourhood conditions for children and provides a foundation for establishing cross-national monitoring indicators of the quality of children's neighbourhoods. The following section (section 2) develops a conceptual framework that details the attributes whose influence on child outcomes is clearly documented in the literature to promote a shared understanding of child-friendly neighbourhoods. Informed by the conceptual framework, section 3 then makes the case for a cross-national monitoring framework for OECD countries by i) reviewing existing (sub-)national monitoring initiatives of children's neighbourhood conditions and the lessons that can be drawn from them, ii) assessing the availability of relevant cross-national data, and iii) presenting examples of analyses that could be performed with such a cross-national database. Section 4 concludes by outlining a way forward towards a systematic monitoring of children's neighbourhood conditions in OECD countries.

The key findings of this paper are:

- While there is ample evidence that neighbourhoods substantially shape children's current well-being and opportunities later in life, identifying causal mechanisms and disentangled effects of individual neighbourhood aspects is challenging due to the interrelation of many neighbourhood conditions. This should be taken as evidence that **a wide range of elements within children's neighbourhoods must be considered jointly if meaningful change is to occur for children**. This includes the suitability of neighbourhoods for children but also for pregnant women, caregivers, and families.
- Neighbourhood features that have been identified consistently to impact child well-being can be grouped into to three main areas of neighbourhood characteristics, which constitute the pillars of the conceptual monitoring framework proposed in this paper:
    - The **natural and built environment** and their spatial configuration encompass elements related to children's physical environment. Children's healthy development relies crucially on the quality and stability of their home, a well-functioning technical infrastructure, their access to nature and green spaces, and their protection from pollution, environmental toxins, extreme weather events and other consequences of climate change. In addition, public playgrounds and community spaces offer the chance to play with other children and to connect with the community, which has important benefits for the well-being of children and also of their caregivers. Finally, streets and public transport systems that cater to the specific needs of families enable children to access opportunities for leisure and learning, including on their own.
    - The **social relationships** refer to the social fabric of a neighbourhood. Children's range of available role models is shaped by their interactions with peers and people older than them. Neighbours can influence children's attitudes, behaviour towards others, and educational and career aspirations but also their available opportunities by sharing information, access to networks and other resources. Connections with advantaged peers and adults benefit children and propel upward social mobility whereas concentrated disadvantage typically worsens individual and family vulnerabilities. Neighbourhoods with similar socio-economic compositions can differ in the exposure across class lines that children can expect to have. The social climate in a neighbourhood is further determined by factors such as trust in neighbours, the participation in collective activities and the social safety, i.e., the absence of crime and community violence. These elements allow children to develop relationships outside their home and tend to improve their socio-emotional well-being and sense of belonging. In addition, community cohesion can enhance the well-being of caregivers and their capacity to support children.
    - The access to and quality of **basic services for children** includes health care facilities, education and childcare institutions, and other child and family support services. The provision

of basic (or essential) services for children is key to breaking the cycle of poverty and social exclusion by ensuring that all children, particularly those in poverty, have access to crucial support to enhance their development and well-being regardless of their background. In the European Union, enlarging access to basic services is central to the European Child Guarantee, which includes providing free healthcare, quality education, adequate nutrition, decent housing, and childcare. Expanding access to basic services requires ensuring they are both affordable and conveniently located for families with children - either within walking distance of the home or close enough to balance work and family life. Some OECD work already develops measures of childcare service availability using this approach. Extending such measures to other countries, and potentially applying them to other essential services, would provide a clearer picture of their real accessibility and allow for better long-term monitoring.

- While the importance of the built environment and essential services for the well-being of populations, including children, is widely documented in the literature, the role of economic connectedness and social connectivity has only recently garnered significant attention from policy makers. This shift reflects a growing recognition of their crucial role in fostering well-being and societal cohesion (Mahoney et al., 2024[27]). These concepts are promising because they introduce a variety of interventions and approaches that prioritise not only individual economic opportunities but also the strength of social bonds within communities. By focusing on social capital and community-building, these approaches emphasise the importance of networks, relationships, and collective action in addressing inequality and promoting inclusive development, including for children. As a result, policymakers are encouraged to adopt strategies that integrate both economic and social dimensions, creating more holistic frameworks for addressing challenges such as poverty, exclusion, and community fragmentation, and to develop measures to capture these dimensions in their monitoring frameworks.
- Monitoring key features of children's neighbourhood conditions is essential for identifying sources of childhood disadvantage that are unrelated to personal circumstances and beyond the control of children and their families. **Monitoring data support the design of policy actions aimed at addressing disparities in the quality of children's neighbourhoods** by indicating if children live in areas that experience disadvantages across one or multiple neighbourhood domains. They guide national, regional, and local policy makers in their allocation of resources to policy areas by pointing out individual neighbourhood aspects that need improvement but also by highlighting trade-offs and complementarities between domains that should be considered jointly. For example, expanding the street network may increase residents access to places but will likely elevate air pollution too. On the other hand, creating a park in the same space enhances leisure activities and simultaneously provides cleaner air. Data on existing transport performance, air pollution levels and available green spaces can support policy makers in these decisions. In addition to informing the thematic focus, monitoring data draw attention to places that require additional supports based on the level of disadvantage and the concentration of children in the area.
- **Combined information on various neighbourhood aspects can further strengthen policy making through enhanced cross-sectoral collaboration and coordinated efforts across levels of government**, which are often required to build child-friendly environments. Monitoring data can be used to communicate the policy issue that is to be addressed, to build a shared vision across actors on the objective and to coordinate efforts from the outset. Clearly defined, measurable (intermediate) goals further facilitate the implementation and monitoring of policies, especially when many stakeholders need to act jointly. Neighbourhood data that are updated over time can provide valuable feedback on areas for improvement that require adaptations during the policy implementation phase.

- **Place-based monitoring and analyses of opportunity and well-being are increasingly being conducted across OECD jurisdictions** (OECD, 2025[28]). Some of these efforts, developed by or in collaboration with government agencies, focus on the child-friendliness of neighbourhoods. They provide policy makers with insights into children's neighbourhood conditions, although currently, no monitoring system comprehensively covers the three dimensions mentioned above (i.e., natural and built environment, social relationships, and basic services for children). For instance, over half of the reviewed initiatives cover at most housing conditions and the technical infrastructure among aspects of children's natural and built environment, leaving aside factors like child-friendly street design, limited exposure to pollution, climate resilience and children's access to high-quality green spaces and playgrounds. **The conceptual framework proposed in this paper can help in identifying data gaps and setting priorities** to develop a more comprehensive set of indicators on neighbourhood characteristics that matter for child well-being.
- **An OECD-wide monitoring of children's local environments could complement existing monitoring initiatives** in several ways. It could provide information to national, regional and local policy makers on the child-friendliness of places in jurisdictions where such data currently do not exist. Moreover, in areas where monitoring systems have been developed, it might offer information on additional neighbourhood characteristics that matter for children but that are not covered by the existing (sub-)national framework. And finally, expanding the available data across policy contexts with harmonised metrics allows for comparisons and learning across countries and thereby advances our understanding of success factors for policies aiming to tackle place-based childhood disadvantage.
- **Cross-national data to monitor children's local environments currently exist at municipality or regional level but not for neighbourhoods**. While we would like to measure the child-friendliness of places at a highly granular level to reflect children's daily radius, these coarser data are still valuable approximations to gain first insights into the challenges related to creating equitable living conditions for children across places. They can highlight the need for improvements at regional or local levels and for strengthened local resources and capacities to address locational disadvantages. For example, they may be used by regional and national policy makers to inform their resource allocation decisions to provide additional supports to places with greater disadvantage and where many children live. Moreover, policy makers may complement these international monitoring data with additional information (e.g., for individual neighbourhoods) that may be available for their jurisdiction in order to pinpointing specific local areas where action is most needed and to design and implement solutions (OECD, 2025[28]). Over time, the continued growth of high-resolution, geospatial data collections and political interest in place-based policies are expected to improve the availability of granular data.
- **Available OECD-wide indicators exhibit a good thematic coverage of neighbourhood aspects that matter for children.** For eleven out of the thirteen neighbourhood characteristics identified in the conceptual framework, comparable cross-country indicators for monitoring exist at subnational level, often down to the municipality level. Areas where no existing internationally comparable data have been identified are *playgrounds and community spaces* and *child and family support services*. This reflects the difficulty to develop reliable indicators at scale in these areas and most existing monitoring initiatives do not provide data for these aspects. On the other hand, certain areas that are not well-covered by the (sub-)national monitoring frameworks reviewed in this paper are captured extensively by available cross-national indicators, for example, children's exposure to air pollution or the climate resilience of their neighbourhoods. Here, international metrics exist at municipality level and in many cases, the underlying data permit the future development of neighbourhood-level indicators.

- **The analysis of cross-national monitoring data on the child-friendliness of local environments carries valuable insights for national, regional, and local policy makers in OECD countries** to inform policy solutions within geographical areas and to enhance our understanding of good policy practices to address common trends and specific challenges in place-based disadvantage across different policy contexts. For example, the explorative regional data analysis in this paper reveals significant disparities among countries in the proportion of children living in low-income areas. The data further demonstrate cross-country variations in the proportion of children exposed to elevated air pollution levels, and whether this intersects with high concentrations of low-income populations. This information could be valuable in assessing whether children are disproportionately affected by the risks linked to high levels of pollution, thereby informing the Child Impact Assessment of policies (Dirwan and Thévenon, 2023[29]). Additionally, it could help determine if policies aimed at improving children's well-being should prioritise stronger actions to combat pollution in regions with a high proportion of children who are particularly at risk. Similarly, the correlation between physician density and the distribution of children across regions suggests that in some areas with a high proportion of children, the ratio of physicians per capita is relatively low, indicating a potential healthcare accessibility issue that could particularly affect children in those regions. While this information is presented at the regional level, more granular analyses could provide more accurate measurements of the issue and support more informed discussions on the actions to be considered.

2. Which neighbourhood attributes influence child outcomes? A conceptual framework for understanding how the quality of neighbourhoods affects child well-being

While it is relatively straightforward to see that local factors shape children's lives, identifying what aspects matter most and how and for whom is complex. Many aspects of a neighbourhood are interrelated and affect child well-being together, making the identification of causal mechanisms and disentangled effects challenging (Galster, 2011[30]; Pickett, 2001[31]). In addition, certain neighbourhood characteristics may be more relevant depending on the type of neighbourhood (e.g., geographic location or population size) or on individual and family characteristics. Finally, there are indirect effects that shape children's lives, notably the capacity of neighbourhoods to provide resources and support to pregnant women and to children's parents and caregivers, which has implications for their ability to tend to their children and for their parenting styles.

Notwithstanding these difficulties, this section reviews the neighbourhood attributes that have consistently been found to be important for promoting the well-being and social mobility of socio-economically disadvantaged children, and that should thus be monitored in their own right. It also comprises information on how these significant neighbourhood characteristics were measured. In doing so, the section sketches a conceptual framework for understanding how the quality of neighbourhood impacts on child well-being. Interlinkages between different neighbourhood aspects are pointed out where possible, and their high prevalence should be taken as evidence that a wide range of elements within children's neighbourhoods must be considered jointly to build safe and stimulating environments for children.

Figure 1 shows the resulting list of identified neighbourhood aspects that are relevant for child well-being. These are reviewed along three dimensions[1] in the remainder of this section:

i. The **natural and built environment** and the spatial configuration of neighbourhoods make up the physical spaces that children grow up in and shape their experiences; children need a physically safe environment that provides them with adequate housing, access to nature, places to play and socialise, and that meets their needs as well as those of their caregivers and pregnant women.

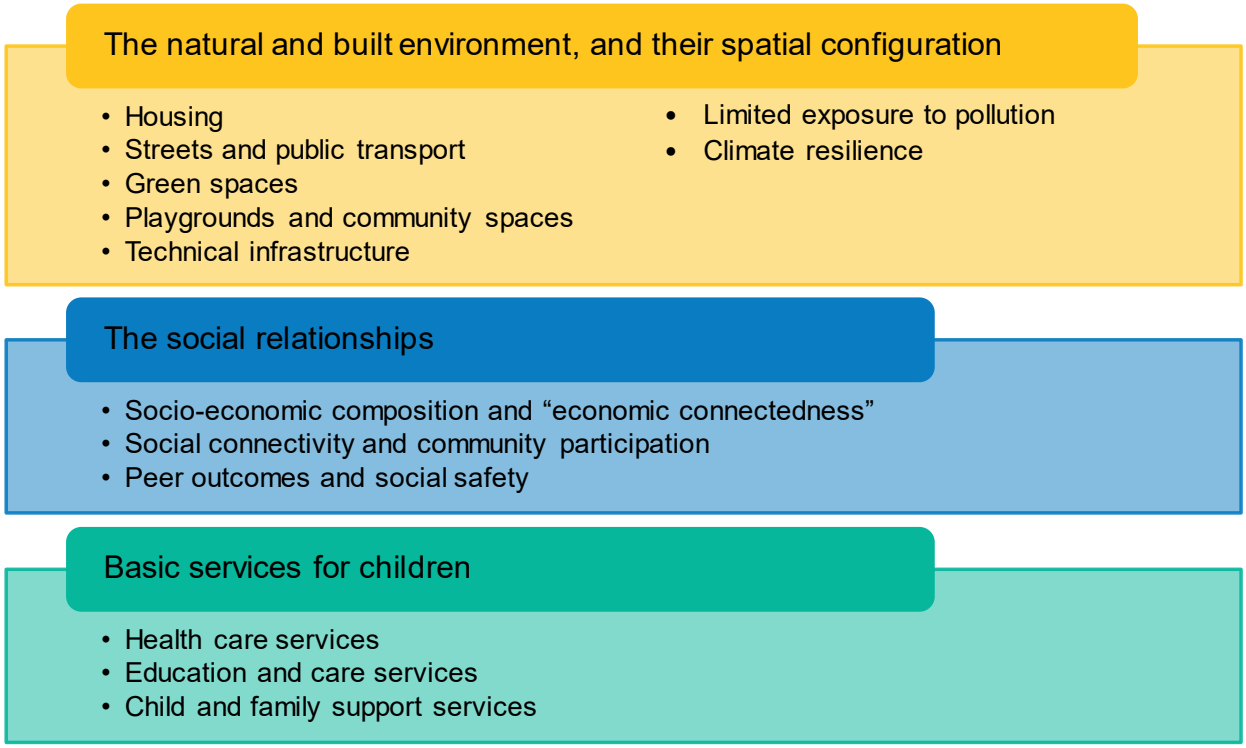
[1] Each of these neighbourhood aspects and dimensions has an impact on children's well-being and development, but they also interact with each other. For instance, parks and available play areas not only enable children to engage in physical activity but also to meet with other children and create social bonds and connectivity.

ii. The **social relationships** refer to people with whom children might interact in their neighbourhood, to the kind of interactions they can expect to have, and to the sense of belonging and community that prevails among neighbours, all of which impacts on children's behaviour, well-being and opportunities.

iii. The **access to and quality of basic services for children** that neighbourhoods provide, namely health care facilities, education and childcare institutions, and other child and family support services, are crucial for addressing children's developmental and families' needs.

Figure 1. A conceptual framework of neighbourhood aspects that impact child well-being

Neighbourhood aspects that have consistently been found to be important for children's well-being



Note: This framework aims to capture neighbourhood elements with a clear and demonstrated impact on children. It excludes children's or caregivers' individual behaviours as well as elements with ambiguous effects on children's well-being, such as access to supermarkets.

2.1 The natural and built environment and their spatial configuration

The physical spaces that children live in and their spatial configuration, i.e., the design and arrangement of natural elements and human-made structures, are collectively referred to as the natural and built environment. They play a crucial role for children's health, development and subjective well-being (Wallerich et al., 2023[32]; Koohsari, Badland and Giles-Corti, 2013[33]; Committee on Environmental Health, 2009[34]; Pellegrini, 2009[35]; Ferguson et al., 2013[36]; Egli et al., 2019[37]), especially since children's radius of their daily activities tends to me much smaller than that of adults. Yet, disadvantaged neighbourhoods tend to have less favourable built environments, resulting in inequalities among children in access to resources like green spaces (Astell-Burt et al., 2014[38]).

An earlier OECD report that studies the impact of the built environment on well-being at the general population level highlights the importance of i) housing to meet people's basic needs for shelter,

ii) transport systems that efficiently provide access to opportunities, iii) urban design and land use, which shape people's proximity to and the quality of places, and can be key factors of inclusiveness by promoting social diversity and mixed land-use, and iv) technical infrastructure to supply citizens with "services essential to human life and health" (OECD, 2023[39]). Narrowing in on the well-being of children and reflecting their specific needs, this paper slightly adjusts these categories to examine the physical elements 'housing', 'streets and public transport', 'green spaces', 'playgrounds and community spaces', and 'technical infrastructure'. For each of these elements, we consider qualitative aspects where they are relevant for the well-being of children and documented by the literature. In addition to these five categories, we discuss the qualitative aspects 'limited exposure to pollution' and 'climate resilience' as their own categories due to their well-documented impacts, good measurability and overarching relevance for all physical spaces of children's neighbourhoods.

Characteristics of children's natural and built environment that cannot be measured reliably or where results on the impact are inconclusive are not featured in this review. This is the case for access to affordable and nutritious food through supermarkets: While nutritious food is essential for children's physical health and development and even though access varies across neighbourhoods, with some areas being classified as "food deserts", no systematic association was identified between the proximity to large supermarkets and children's weight[2].

Housing

Housing conditions are significant drivers of children's health and development as they play a major role in meeting basic human needs for shelter, warmth, rest and safety (OECD, 2021[1]; Clair, 2019[40]; Coulton et al., 2016[41]). Exposure to overcrowded or unsanitary housing conditions (e.g., lack of key infrastructure, high levels of darkness, indoor damp, mould, cold or environmental toxins like lead) cause infections and respiratory conditions such as asthma, and children are particularly vulnerable as their immune systems are still developing (OECD, 2021[1]; Beasley, Semprini and Mitchell, 2015[42]). Moreover, there is some correlational evidence that suggests that poor housing conditions can affect parental stress levels and limit their capacity to employ positive parenting behaviours, with negative implications on children's development and stress levels (Coley et al., 2013[43]). Children growing up in low-quality housing are at greater risk of experiencing emotional and behaviour problems, and experience poorer mental health outcomes (OECD, 2021[1]; Evans, 2003[44]). Housing quality is frequently linked to children's well-being and disadvantaged neighbourhoods are more often characterised by poor housing (Raphael, 2018[45]). Poor housing conditions are identified by collecting information from households on their living conditions (e.g., on the number of people within a housing unit and its size to identify housing overcrowding, or on physical conditions like dampness, mould, difficulty to heat, poor sanitary conditions, etc.), by measuring blood or dentine lead levels in children and/or from tax data or other market value measures that can indicate very low building evaluations.

Other neighbourhood housing aspects that may affect child well-being comprise residential instability and housing affordability (Coulton et al., 2016[41]; Goldfeld et al., 2017[46]). Frequent relocations can disrupt children's routines and lead to changes in schools, affecting the stability children need to feel safe in their neighbourhood and connected to their peers. Population movements resulting from housing relocations may also contribute to a reduced sense of community in the neighbourhood (see section Social connectivity and community participation), which is related to increased emotional distress (Snedker and Herting,

[2] A meta-study across mainly developed countries found a negative relationship between access to supermarkets and obesity in half of the 24 reviewed studies, a positive one in a quarter of studies and no significant relationship in the remaining quarter of studies reviewed (Zhou et al., 2019[184]). The authors hypothesise that supermarkets provide access to healthy foods but also to a variety of unhealthy foods and that the relationship may thus depend on sociodemographic characteristics like age, gender or family income, and other environmental factors. Proximity to supermarkets therefore does not seem to be a suitable indicator to measure child-friendly neighbourhoods.

2016[47]). To measure residential stability, rates of home ownership, vacancy rates and/or indicators of housing market distress (e.g., the share of foreclosures or speculator owned homes) are used as a proxy. Finally, a high average ratio of housing cost burden to income in a neighbourhood indicates increased levels of family hardship and limited resources that families can spend on their children to meet basic needs.

The housing environment also matters through its influence on the neighbourhood's social environment (see section 2.2). For example, areas with high concentrations of public housing tend to experience higher rates of crime and unemployment. In addition, these neighbourhoods are often stigmatised by others, a perception which their residents may internalise, potentially lowering their self-esteem. Similarly, residential density is sometimes used as a measure for the housing environment since neighbourhoods characterised by high-rise houses are associated with higher rates of crime, fewer spaces for safe play and limited opportunity for caregivers to monitor young children's independent play outside (Whitzman and Mizrachi, 2012[48]; Evans and Ferguson, 2011[49]). These conditions restrict opportunities to be active and to build neighbourhood contacts for children living there. Higher-density neighbourhoods, however, can offer greater opportunities for social support and the development of social connections. In contrast, lower-density residential areas, particularly those with limited walkability and inadequate transport infrastructure, may impede social connectivity. Indicators that better capture the overall design of the neighbourhood are thus preferred.

Streets and public transport

Streets and public transport systems are a crucial part of the spatial configuration of a neighbourhood. They allow children to move around in their neighbourhoods and provide them and their caregivers with access to services, leisure facilities and opportunities. Safe and short commutes allow older children to move independently and reduce everyday strain experienced by caregivers, enabling them to be more responsive to their children (Leyden et al., 2024[50]; OECD, forthcoming[51]). Yet, children face very different possibilities to access places. Disadvantaged communities tend to have less well-maintained roads and less access to well-functioning public transport, despite their residents being less likely to own a car (OECD, 2018[52]).

Street design is an important element of child-friendly neighbourhoods. It ensures the physical safety of children in traffic areas, which is vital since road injuries in OECD countries continue to be a leading cause of child mortality and physical disability, especially throughout middle childhood and adolescence (Vos et al., 2016[53]; OECD, 2021[1]). Reduced speed limits for vehicles and designated, wide spaces for children to cycle or walk help prevent accidents and can encourage children and their caregivers to take more active modes of transportation. If caregivers feel unsafe or uncomfortable while using streets, they are less likely to let children move independently or to venture out with them. A study of 5-year-olds found that children living in neighbourhoods with high street traffic were experiencing more restrictions in outdoor play, had smaller social networks and lower social and motor development (Hüttenmoser, 1995[54]). Streets can further be sources of stress for children through road traffic, extreme noise and air pollution (Leyden et al., 2024[50]), hampering children's development (see section Limited exposure to pollution).

The walkability of a neighbourhood also matters for child well-being. It describes how quickly residents can attain their daily needs on foot and considers street quality aspects such as the availability of designated pavements or level surfaces. These latter examples fulfil young children's need for room for spontaneous play or walking side-by-side with their caregiver, and enable children and caregivers with reduced mobility or individuals pushing a stroller to move around more easily (see the Global Designing Cities Initiative (2019[55]) for a guide on designing streets for children's needs). Walkability is associated with lower weight and lower risk of obesity among children as it can encourage active lifestyles and provide children with opportunities to play (Duncan et al., 2014[56]; Jia et al., 2019[57]; Cohen et al., 2023[58]). Additionally, adults derive happiness from walkable neighbourhoods, both directly and indirectly through feeling more healthy

and more trusting of others (Leyden et al., 2024[50]). By facilitating chance encounters, walkable neighbourhoods can help build a neighbourhood community and thus help children socialise and develop their social network (see section Social connectivity and community participation).

Public transport systems also face additional requirements to cater effectively for children, pregnant women, and caregivers. First, public transport should allow for multiple stops on commutes and for a combination with different modes of transportation (cycling, driving, walking etc.). Parents may drop off their child at school on their way to work or otherwise integrate multiple family needs into one trip. Second, public transport should respond to families' need to have more and designated space, barrier-free access and high levels of safety and security (Cludius et al., 2024[59]).

The effectiveness of an area's street network and transport system is often measured by the time it takes residents to reach various points of interest (e.g., schools, hospitals, shops, restaurants, recreation facilities, green spaces, other people) by different modes of transport (see (ITF, 2019[60]) for an international framework). Measures of traffic safety such as traffic accidents involving children can describe the child-friendliness of streets and public transport infrastructure. In addition, many studies employ subjective measures to capture caregivers' perceptions about safety.

Green spaces

Exposure to nature such as parks, trails or vegetation, or smaller scale presence of nature like trees planted along streets or in other public places can have positive effects on children's well-being (Lovasi et al., 2008[61]). Studies point to a multitude of positive associations between exposure to nature and child outcomes, such as reduced mortality, reduced risk for cardiovascular disease, weight gain, obesity and diabetes, reduced symptoms of disorders like ADHD, higher levels of physical health, cognitive development, self-discipline, stress moderation, and improved feelings of safety, the emotional state and life satisfaction (Mouratidis, 2021[62]; McCormick, 2017[63]; Faber Taylor and Kuo, 2011[64]; Balseviciene et al., 2014[65]; Xing et al., 2023[66]). Nature may also benefit children through indirect effects on their birthparent. Access to nature during pregnancy has been associated with a decreased risk for low birth weight and consequently a reduced risk for a number of health complications across the child's life (Islam, Johnston and Sly, 2020[67]).

The effect of nature seems to be heterogenous, depending on other neighbourhood aspects and individual child characteristics. For example, Sandy et al. (2013[68]) find that the usage of larger parks or trails and thus their beneficial impact on children's physical activity and weight depends crucially on the attractiveness and (perceived) social safety of these spaces. Many cites have started to programme parks, offering planned events and organised activities, to make these spaces more inclusive and increase use (Smith, Osborn and Vodicka, 2023[69]). Moreover, the interaction with others in these spaces is key to the positive effects on children's social competences and emotional maturity that access to green spaces can have (Christian et al., 2017[70]).

There is a lack of evidence on the overall relevance, optimal distribution and design of green spaces and nature in children's neighbourhoods but some insights emerge nevertheless. Positive effects of green spaces on children's well-being seem to rely crucially on quality aspects such as perceived safety and the absence of litter. The type of nature also matters as some plant species can increase asthmatic symptoms during childhood rather than having beneficial effects (Islam, Johnston and Sly, 2020[67]). Proximity to and accessibility of green spaces likely increase children's use of these spaces, and thus exposure to nature and its potential benefits, though it is unclear what the optimal spatial distribution of park size is (Feng and Astell-Burt, 2017[71]; Wu and Plantinga, 2003[72]).

Playgrounds and community spaces

Access to quality play spaces is essential for young children to enjoy play, engage in physical activity, and initiate social interactions with other children. There is evidence that high-quality playgrounds increase children's visits and use, promoting greater physical activity (Smith et al., 2017[73]). Specifically, playgrounds characterised by a mixture of different surface types, open-ended structures that allow for creative play, movable equipment, and that include planted play areas have been found to attract more users and encourage physical activity compared to traditional post-and-platform playgrounds (Cohen et al., 2023[58]). High-quality playgrounds also include certain public amenities that encourage more walking and spending time outside such as benches, public restrooms, picnic tables, water fountains, shade and shelter. Additionally, they may host events or regular activities that encourage residents to gather and spend time together in these spaces. They further place signage and wayfinding measures at the correct height for children to be able to read them (Global Designing Cities Initiative, 2019[55]). Despite their benefits, high quality playgrounds tend to be unequally distributed across neighbourhoods, being more available in neighbourhoods with high socio-economic status (Crawford et al., 2008[74]).

Public community spaces may be open spaces like parks or enclosed buildings such as cultural facilities. When they are well-designed, inclusive and accessible, they can provide opportunities for social, cultural, political and economic activities and generate social interaction and cohesion within communities (Mouratidis, 2017[75]). Specifically, community spaces benefit children and adolescents in three ways: They can be places for them to play, meet their friends and spend time with other children, and more generally, to form social ties outside their family units. At the same time, community spaces can act as social support systems for pregnant women and children's caregivers, benefitting children indirectly. Thirdly, community spaces have the potential to promote interactions among neighbours, to overcome mistrust and to foster a sense of community, ownership and social cohesion in the neighbourhood, which in turn benefits children (see sections Peer outcomes and social safety and Social connectivity and community participation). Disadvantaged neighbourhoods tend to have fewer or lower quality public open spaces compared to advantaged neighbourhoods, although they often stand to benefit the most from them (Alderton et al., 2019[76]).

The quality of community spaces is paramount to serving their purpose. For example, a study found that renovating deteriorated public squares in disadvantaged neighbourhoods by constructing parks increased the use of these spaces by 0.46 standard deviations (SD) on average, and by over 0.50 SD among families with children under 12 years. The intervention also caused the community to take better care of the space (0.31 SD), contributed to greater socialisation (0.36 SD) and improved the overall quality of life in the neighbourhood (0.48 SD) (Braun, Gallego and Soares, 2023[77]).

High-quality playgrounds and community spaces are inclusive, accessible and safe, and designed with children's, caregiver's and community needs in mind. Distance to children's homes plays a key role in connecting them to these public spaces, especially for young children, because moving around with small children tends to be slower and conveniently placed destinations are visited more often (Villanueva et al., 2016[78]).

Technical infrastructure

Technical infrastructure, such as water, energy and waste management and broadband access, directly relates to children's health and indirectly to their well-being through leisure activities. Yet, important shares of the population in OECD countries experience inadequate technical infrastructure (OECD, 2023[39]). As the Internet becomes increasingly integrated into our lives, digital infrastructure is key. Children can use the Internet to find resources (information and people) they wouldn't otherwise have access to. It can nurture offline relationships, contacts and social capital through online communication. By offering an additional mode to connect to others with lower barriers and a broader reach, the Internet has the potential

to mitigate feelings of loneliness and social exclusion. However, not all children have access to the necessary technical infrastructure. For example, on average across OECD countries, 6% of 10-year-olds in 2021 and 3% of 15-year-olds in 2022 report not having access to the Internet at home (IEA, 2023[79]; OECD, 2023[80]).

Limited exposure to pollution

Exposure to environmental toxins (e.g., mercury, lead) and water, air, noise or light pollution is harmful to everyone, and especially children, whose physical development makes them particularly vulnerable. For instance, mercury can disturb many aspects of child development including brain maturation. It may be inhaled after spills in the home or from nearby industry emissions, and can also be ingested when consuming large amounts of fish containing mercury (Goldman, Shannon and the Committee on Environmental Health, 2001[81]). Poor drinking water quality similarly affects children's health and has been linked to lower student test scores (Marcus, 2023[82]). Moreover, exposure to high levels of air pollution during childhood has a myriad of long-term physical health effects, including reduced lung capacity, elevated blood pressure and asthma, and it may further hamper cognitive development and mental health (United Nations Children's Fund, 2017[83]; National Scientific Council on the Developing Child, 2023[84]). Noise and light pollution can increase children's stress levels, disrupt their sleep and hinder their cognitive development (Gascon, Vrijheid and Nieuwenhuijsen, 2016[85]; Global Designing Cities Initiative, 2019[55]).

The negative impact of pollution is estimated to be borne disproportionately by more vulnerable populations. For instance, a range of studies from Europe have shown that neighbourhoods with higher levels of deprivation, characterised by aspects including low income, high unemployment and crime, are exposed to higher levels of air pollution (Fairburn et al., 2019[86]; Samoli et al., 2019[87]; Temam et al., 2017[88]; Ferguson et al., 2021[89]). In addition to greater exposure to pollution in their neighbourhood, vulnerable groups of children can experience stronger exposure effects. For example, the negative health outcomes caused by air pollution seem to concentrate not necessarily in children who are the most exposed but in children with poor health at birth and lower parental income (Suarez Castillo et al., forthcoming[90]). Similarly, a study of the consequences of road traffic noise for children's stress levels found that children with premature births and elevated chronic stress were the most affected (Lercher, Evans and Widmann, 2013[91]).

Pollution tends to be more dangerous in the prenatal period and for young children, which should be factored into the design of the built environment and into the monitoring of a neighbourhood's quality. For instance, housing-related pollutants have a significant effect on small children as they generally spend a lot of their time indoors (Wallerich et al., 2023[32]). Moreover, measuring air quality at the height of young children (approx. 1 meter) better captures the vehicle exhaust these children are exposed to and can thus lead to more child-friendly street design. At the same time, it means that other characteristics of child-friendly neighbourhoods such as green spaces (see section Green spaces) that have the additional benefit of reducing air and noise pollution, will benefit young children the most.

Climate resilience

The need to strengthen climate resilience is another consideration prompting to pay particular attention to the natural and built environment where children live and grow up: according to modelling by climate researchers, worldwide, a child born in 2020 will experience on average twice as many wildfires, 2.8 times the exposure to crop failure, 2.6 times as many drought events, 2.8 times as many river floods, and 6.8 times more heatwaves across their lifetimes, compared to a person born in 1960 (Thiery et al., 2021[92]). And children in poor neighbourhoods are disproportionally exposed to very high climate risk, including in OECD countries (Adrian et al., 2020[93]).

The increased severity and frequency of environmental disasters and extreme weather patterns can generate anxieties and feelings of worry, affecting children and youths' mental well-being and ability to positively envision their future (Défenseur des droits, 2024[26]). Climate change may also lead to damage to vital infrastructure and buildings, displacement, heightened homelessness, food insecurity, and disruptions in school attendance and the delivery of essential services, presenting a wide range of risks to the physical health, education, and mental well-being of children and their families. These risks may manifest as malnutrition due to unstable food systems, health complications arising from exposure to extreme heat and flooding such as higher probabilities of premature births, low birth weight, and lower academic achievements (Huang et al., 2021[94]; Park et al., 2020[95]), cardiovascular and respiratory diseases resulting from air pollution, an increased potential for vector-borne illnesses, mental health disorders, and the secondary effects of parental stress and illness on their children. These different effects may compound as heat amplifies the adverse effects of air pollutants on children, for example (World Meteorological Organisation, 2023[96]). Additionally, climate change also destabilises communities and economies, exacerbating existing disparities (Adrian et al., 2020[93]). This can result in increased poverty rates, heightened levels of inequality, wider gaps in educational attainment, reduced employment and income stability, greater demand for social services, and heightened social tensions.

To address these challenges, data and indicators are needed to track climate-related hazards (Maes et al., 2022[97]). First, data allow to identify which groups of children in what areas are most likely to be impacted by heightened climate-related risks. Furthermore, it is crucial to be able to cross-reference these data with information on the quality of the built environment, as discussed in other sections. This cross-referencing helps identify areas where investments in climate-resilient infrastructure and essential utility services are needed. Third, data are necessary to avoid new development in high-risk areas. Additionally, these data can help in anticipating the potential needs of the population that will be impacted by hazardous events and in creating comprehensive contingency plans for inevitable emergencies.

Identified indicators for the natural and built environment and the spatial configuration of neighbourhoods

In conclusion, the literature review of this section points to a set of characteristics of the natural and built environment that affect children's well-being (Table 1). Based on this evidence, some characteristics emerge as more relevant for inclusion in a monitoring framework of child-friendly neighbourhoods:

- Features of the natural and built environment that have a proven influence on child outcomes and are tangibly measurable. These include proximity to and size of green spaces, exposure to air pollution and other environmental toxins, traffic safety, and features related to housing quality, affordability, and stability, and to digital infrastructure. *These areas may warrant the development of data and indicators at national and cross-national levels.*
- The risks of natural disasters linked to climate change are known to have a particular impact on specific population groups, including children living in disadvantaged environments. However, the relative risk of children being exposed to such events has not been properly assessed yet. Therefore*, it seems sensible to incorporate indicators of these severe risks and evaluate how their distribution within countries relates with areas where children live.*
- Aspects of the physical environment, which some studies suggest have an impact on children, but lack tangible measures or cost-efficient measurement on a large scale. This encompasses attributes such as the cleanliness of the environment, exposure to noise or light pollution, the design of playgrounds, and the equipment in community spaces. *Local measures can be developed to guide these decisions* (OECD, 2025[28])*, but they are grounded in specific environmental features and local data collection practices, making them particularly challenging to use as measurements across places with specific characteristics.*

Table 1. Key features of the nature and the built environment affecting child well-being

Neighbourhood aspects	Characteristics that matter	Suitable indicators for monitoring
Housing	Housing quality	• **Overcrowding** • Unsanitary housing conditions (e.g., lack of key infrastructure, high levels of darkness, indoor damp, mold, cold or environmental toxins like lead) • Children's blood or dentine lead levels • **Tax data or other market value measures**
	Housing stability and affordability	• Residential instability • **Rates of home ownership** • **Housing vacancy rates** • Indicators of housing market distress • **Housing prices**
Streets and public transport	Physical safety Perceived safety of different modes of transportation	• **Traffic road injuries** • Secured cycling lanes
	Transport effectiveness	• Multiple stops/commutes and connections • Time it takes for residents to reach variable points of interest (inc. schools, hospitals, recreation facilities, green spaces) by foot, bike, public transport or car
	Walkability (street quality aspects, e.g., level surfaces, designated pavements, accessibility for people with reduced mobility) Cleanliness	–
Green spaces	Access to parks and exposure to nature	• **Availability of green spaces** • **Size of green spaces** • Distance from children's residence
	Quality and use of green spaces (e.g., cleanliness, non-hazardous plants, subjective measures whether the spaces meet children's needs)	–
Playground and community spaces	Availability, accessibility and use Quality (e.g., playground design & material; public equipment such as benches, public restrooms, picnic tables, water fountains, shade and shelter)	• Availability of playgrounds • Availability of indoor and outdoor community spaces • Distance from children's residence
Technical infrastructure	Water, energy and waste management Internet access	• **Broadband access**
Limited exposure to pollution	Exposure to environmental toxins (e.g., mercury, lead) Water, air, noise or light pollution	• Exposure to environmental toxins • **Air pollution**
Climate resilience	Place-specific impact of climate change	• **Exposure to climate-related hazards**

Note: Suitable indicators for monitoring in bold represent neighbourhood measures with available data for a number of OECD countries.

2.2 The social relationships

The social relationships of neighbourhoods encompass the demographic and socio-economic status of their residents and the social climate in which neighbours interact. The role of social bonds within communities has become more central to policy making in recent years as their impact on people's well-being and social cohesion is increasingly acknowledged (Mahoney et al., 2024[27]). Strong neighbourhood social networks, trust, and community relationships significantly enhance children's opportunities for socialising and making friends, and thus, influence their well-being. However, communities with high levels of collective action are also able to foster conducive environments for children more broadly. Research from high-income countries suggests that aspects like the socio-economic composition, social support, and neighbourhood cohesion can explain approximately 10% of children's health outcomes, for example (Sellström and Bremberg, 2006[98]). In addition, the neighbourhood's social relationships influence children's well-being in the future by shaping their norms, attitudes, aspirations, social networks, and future employment opportunities.

Neighbourhood socio-economic composition and "economic connectedness"

Associations between neighbourhood socio-economic composition and children's health, behavioural outcomes and academic achievements have long been documented, and prevail even when controlling for family income and parental education (Baum, Garofalo and Yali, 1999[99]; Leventhal and Brooks-Gunn, 2000[100]). This is because neighbours add to the range of role models children are exposed to and can be a source of additional guidance for children. Neighbours' education and/or employment can shape children's norms, behaviours towards others, and attitudes towards education and to work (Bozick and DeLuca, 2010[101]; Goldfeld et al., 2017[46]). Moreover, neighbours may provide information, support and other resources, which can benefit children's outcomes at school and later at work (Ainsworth, 2002[102]; Chapple, 2006[103]). The influence of slightly older neighbours on children's future plans has been shown in the Netherlands and Chile in the case of university enrolment and study and career choices (Barrios-Fernández, 2022[104]; Avdeev et al., 2023[105]). On the other hand, neighbourhood socio-economic composition can also be detrimental for children. Concentrated disadvantage typically exacerbates negative impacts on child health, education and well-being, and children from poor families tend to be more affected (Wodtke, Elwert and Harding, 2016[106]; Leventhal and Brooks-Gunn, 2000[100]).The influence of neighbours may be particularly important for children from low socio-economic backgrounds (Chetty and Hendren, 2018[23]).

Overall, the degree to which a neighbourhood's socio-economic composition matters for children and which aspects specifically varies across countries. Whereas in the United States and Australia, neighbourhood socio-economic composition appears to have relatively strong effects (Chetty and Hendren, 2018[17]; Christian et al., 2017[70]), research from Sweden finds a limited positive effect of neighbours' socio-economic position on children's socio-economic outcomes later in life (Brandén, Haandrikman and Birkelund, 2022[22]). The varying impacts of neighborhood socioeconomic composition across countries may be partly due to differences in social stratification within neighbourhoods. In countries with less residential segregation, children might be less influenced by the socioeconomic status of their neighbours. In addition, depending on the national context, different aspects of socioeconomic status may be important. For example, a Dutch study found the exposure of children to neighbourhood affluence to have a stronger effect than exposure to neighbourhood poverty on children's educational attainment, which may in part be linked to the lack of extreme concentrated poverty in the Netherlands (Troost, van Ham and Manley, 2023[107]).

Measures used in the literature to characterise neighbourhood socio-economic composition comprise information on education levels (typically the share of higher education graduates) and income, ranging from the share of high-income residents or professionals to measures of income inequality, households

living in poverty, households receiving public assistance and the unemployment rate. Another measure commonly employed to characterise children's socio-economic environment is the share of single parent households in a neighbourhood as US-studies have found it to correlate strongly with the intergenerational upward mobility of places (Jagannathan et al., 2022[108]; Chetty et al., 2018[109]). Much of this relationship stems from selection effects of families choosing to locate in a specific neighbourhood but some association remains even after controlling for selection effects (Chetty and Hendren, 2018[23])

While the socio-economic characteristics of the environment in which children and their families live and the measures mentioned above appear to influence children's trajectories, Chetty et al. (2022[110]) found that the extent of friendships across class lines, i.e. the connections people have with higher socio-economic groups, which the authors call 'economic connectedness', is one of the strongest predictors of economic upward mobility in the United States. The authors were able to identify friendships through access to Facebook corporate data on profile connections, and they estimate that if the economic connectedness of children with low parental socio-economic status was that of the average child with high parental socio-economic status, their incomes in adulthood would increase on average by 20%. Economic connectedness explains economic mobility better than neighbourhood average income, educational outcomes or family structure, and the authors argue that this is because the latter measures may capture the exposure to people of a different socio-economic background in a neighbourhood but not the interaction between different groups. Neighbourhoods with similar socio-economic compositions can have different levels of friendships across class lines.

Social connectivity and community participation

Social cohesion, neighbourhood belonging and collective efficacy impact children's mental and physical health outcomes and as well as their long term socio-economic outcomes and academic resilience (Marquez et al., 2023[111]; Minh et al., 2017[2]; McTigue et al., 2015[112]; Jagannathan et al., 2022[108]). Social cohesion and community participation provide opportunities for children to pursue personal interests and social activities and to develop relationships with peers and adults outside their home (McKendrick, 2014[113]). These relationships help build children's social capital, including by fostering the above-mentioned connections across class lines (Chetty et al., 2022[110]). Children's community participation such as out-of-school activities tend to improve their subjective well-being and reduce their internalising problems (e.g., anxiety, depression, social withdrawal), especially for children with low friendship quality (Wang et al., 2023[114]; Marquez et al., 2023[111]).

Additionally, social interactions and strong neighbourhood networks are highly beneficial for children through their impact on caregivers (Thompson et al., 2019[115]). Caregiver social connectedness can boost their well-being directly and help mitigate risks of parents' social isolation. In addition, being able to rely on a support network of neighbours, including for occasional help with daily parenting tasks, can reduce parental stress levels. These supports make caregivers in turn more apt to respond to children's needs and to seek services for them (Jang et al., 2022[116]; Masarik and Conger, 2017[117]).

Social cohesion and community participation are interrelated with other neighbourhood aspects. For example, a built environment that offers public spaces where children and adults can safely meet fosters social relationships (see Playgrounds and community spaces). Moreover, research across countries shows that children's participation rates in community activities are related to the socioeconomic composition of a neighbourhood, namely to children's family composition and socio-economic status. In addition to cultural differences across population subgroups, financial barriers can present an extra barrier to participation in extracurricular activities for children from lower-income families (Hjalmarsson, 2022[118]). Conversely, higher levels of social cohesion in a neighbourhood may be able to attenuate some of the negative effects of neighbourhood disadvantage such as reduced levels of safety. In the United Kingdom, social cohesion as captured by shared norms, trust and the likelihood of neighbours to intervene, has been linked to

improvements in children's emotional development only for children living in deprived neighbourhoods but not in affluent ones (Odgers et al., 2009[119]).

Social cohesion is typically assessed through surveys with questions on children's and caregivers' identification with their neighbourhood and community, their trust in their neighbours, their perceived support from neighbours and whether they enjoy living in the area, or by recording parents' fear to let their child go outside due to safety concerns. Measures of children's participation in the local community include rates of volunteering and membership in clubs and societies among children or the number and size of active associations and clubs in the neighbourhood.

Peer outcomes and social safety

Adolescents spend an increasing amount of time with peers as they become more independent. Peer influence on teenagers' behaviour grows, while parental influence declines (Dallago et al., 2009[120]; Hidalgo and Hernández, 2001[121]; Agostinelli et al., 2020[122]). Adolescents' norms are thus also shaped by the behaviour of their peers. For example, if peers do not value education, it can affect the educational aspirations and choices of others (Calvó-Armengol, Patacchini and Zenou, 2009[10]; Conley et al., 2023[11]; De Giorgi, Pellizzari and Redaelli, 2007[12]). Similarly, high rates of teen pregnancies in a neighbourhood have been related to earlier partnering and lower educational attainment in girls and women among African American communities in the United States (Akela and Jordan, 2014[123]). Further, neighbourhood gang violence increases the risk of youth crime and delinquency, especially among boys (American Academy of Child and Adolescent Psychiatry, 2017[124]). Measures of high school dropout rates, teen pregnancy and youth crime and juvenile detention or incarceration are therefore markers of the peer environment children face in their neighbourhood.

The social safety of a neighbourhood, the absence of crime and community violence, has an impact on children's health and development, and their later educational and labour market outcomes (Duncan, Gootman and Nalamada, 2024[125]). Crime rates (e.g., violent crimes, drug use) are frequently used to capture the safeness of a neighbourhood and measure its association with child outcomes. For example, crime rates have been linked to reduced physical activity (Kneeshaw-Price et al., 2015[126]; Janssen, 2014[127]; Constable Fernandez et al., 2023[128]), lower park use among children in New York City (Huang et al., 2020[129]), higher body weight in England (van der Zwaard et al., 2018[130]), higher amounts of screen time in Australia (Baldwin, Arundell and Hnatiuk, 2022[131]), and greater misconduct problems in children (Leventhal and Brooks-Gunn, 2000[100]; OECD, 2021[1]). High crime areas may also carry stigma, which risks children living there being stereotyped, judged or otherwise treated differently by others. Experiencing these negative perceptions about their homes and lives can be detrimental to their well-being and future aspirations (Goldfeld et al., 2017[46]).

More than objective statistics on crime rates, it can be argued that what matters most are the perceptions of crime and neighbourhood safety by children and their caregivers which drive their decisions to use public spaces. Caregivers who feel their neighbourhood is unsafe are less likely to take their children outside or to let them explore independently (Foster et al., 2014[132]). Since perceived and actual crime do not always relate (Balkin, 1979[133]), adding subjective measures helps better characterise neighbourhoods. These indicators may include reported police complaints, and incidences of vandalism.

The social safety of neighbourhoods is strongly linked to other neighbourhood characteristics. First, areas with high rates of poverty tend to face higher rates of criminal activity (Duncan, Gootman and Nalamada, 2024[125]). Second, there are a number of elements of the built environment that can influence (perceived) safety. For instance, high housing vacancy rates tend to be associated with greater fear of crime. On the other hand, home improvements, the absence of litter and graffiti, and greener areas can reduce neighbourhood crime (Donovan and Prestemon, 2010[134]; Kuo and Sullivan, 2001[135]; South, MacDonald and Reina, 2021[136]). Housing design can further promote safety (see Housing). Streetlights, cleanliness

and busy but not overcrowded public places linked with a social connectedness among residents further add to the perception of safety.

Identified indicators for the social relationships

To sum up, a variety of social and economic characteristics, attitudes and behaviours of the neighbourhood population influence children's social interactions and parenting conditions (Table 2), which subsequently affect children's overall outcomes:

- Significantly, the literature points to the adverse influence that living in a socio-economically disadvantaged neighbourhood has on child outcomes, in addition to individual living conditions. This is due to the cascading effects of interactions with populations facing similar vulnerabilities and having fewer opportunities to engage with more advantaged groups. These interactions can significantly impact the opportunities, attitudes, and aspirations of children and their families. Conversely, connections with socio-economically more advantaged groups have a positive effect on child outcomes and their prospects for upward social mobility. *While these economic and social connections between children and the people in their neighbourhood they interact with may not always be easily identifiable, indicators of the socio-demographic composition of neighbourhood populations and on peer outcomes at local level can serve as useful proxy measures. Examples of meaningful indicators include measures of neighbourhood poverty and affluence, the share of the adult population with a higher education degree, the prevalence of single-parent families, youth crime and delinquency, school dropout rates and teen pregnancies.*
- The sense of belonging to the community or neighbourhood, trust in neighbours, and participation in collective activities are essential factors that drive children's social inclusion and socio-emotional well-being and strengthen social cohesion in a broader sense. Conversely, the perceived unsafety of the neighbourhood appears to negatively affect children's physical activity and park usage, while also contributing to an increase in the time spent on at-home activities, including screen time. Therefore, it is important to develop indicators of the relationships and social climate in children's neighbourhoods in order to characterise the opportunities and challenges they face. *Local data collection practices tend to rely on surveys of residents, children and their caregivers to measure these aspects, which are costly to conduct at a larger scale but estimates of voter turnout, crime rates or children's participation in community activities may serve as an approximation.*

Table 2. Key features of the social relationships affecting child well-being

Neighbourhood aspects	Characteristics that matter	Suitable indicators for monitoring
Socio-economic composition and "economic connectedness'	Socio-economic and demographic composition	• **Neighbourhood poverty** • **Share of higher education graduates** • Prevalence of single-parent families
	Economic connectedness	• Neighbourhood affluence • Network connections with higher socio-economic groups
Social connectivity and community participation	Social cohesion Community participation Social connectedness of caregivers	• **Neighbourhood and community belonging** • Collective efficacy • Trust in others • Participation in extra-curricular activities • Volunteering and membership in clubs
Peer outcomes and social safety	Peer outcomes	• **School dropouts** • Teen pregnancies • Youth crime and delinquency
	Risk exposure and perceived safety	• **Crime rates (e.g., violent crimes, drug use)** • Perception of neighbourhood safety

Note: Suitable indicators for monitoring in bold represent neighbourhood measures with available data for a number of OECD countries.

2.3 Basic services for children

The provision of basic services for children is an important component of child policy in OECD countries as they aim to help ensure that children and their families have the resources (including information, knowledge, skills and social supports) to provide children with the best start in life and to tackle childhood socio-economic disadvantage (Guio, Marlier and Frazer, 2020[137]; OECD, 2019[138]; Council of the European Union, 2021[139]). Many countries interested in developing services for children and their families focus on the early years of life as a means to foster child development and detect and address potential issues early, before minor problems escalate into more serious issues. They aim to improve the delivery of integrated and continuous support to best meet the needs of young children and parents (Riding et al., 2021[140]; Dirwan and Thévenon, 2023[29]). In the European Union, the European Child Guarantee groups efforts to ensure children's access to free healthcare, quality education, adequate nutrition, decent housing, and childcare (European Commission, 2025[141]). The framework developed in this paper groups three broad areas of basic services that provide children with support, both in the early years and later in childhood and adolescence: health care services, education and care services, and child and family support services.

Health care services

Access to high-quality physical and mental health care services directly impact children's health outcomes and thus their well-being. Both, preventive and remedial health care play a critical role throughout the different stages of children's lives to ensure they develop in good health: from providing antenatal and postnatal care to safeguard the health of women and their children, to offering childhood immunisations and preventative health checks, and addressing any acute health problems children may encounter (OECD, 2021[1]).

The provision of high-quality health care services in children's neighbourhoods benefits children in two ways. Firstly, they are crucial to address children's individual needs. These services can reduce disparities in children's health outcomes, which display a social gradient from a very young age (Case, Lubotsky and

Paxson, 2002[142]; Currie and Stabile, 2003[143]; Eriksen et al., 2023[144]). Moreover, negative health shocks can carry consequences throughout children's lives and further impact educational and later labour market outcomes, making prevention and support for dealing with health shocks a key policy objective (Eriksen et al., 2023[144]). At the neighbourhood level, neighbourhoods with greater access to health care have been linked to higher life satisfaction and lower internalising symptoms (e.g., fearfulness, social withdrawal) in adolescents in England, although the effect seems small (Marquez et al., 2023[111]). Secondly, neighbourhood health services have additional, indirect effects on children. For instance, paediatricians are argued to play a key role not only by providing child-specific primary health care, but also by raising awareness and promoting healthy habits among children and their caregivers (Jutte, Badruzzaman and Thomas-Squance, 2021[145]). Health services that ameliorate parental mental health can also lead to improved parent-child interactions, and thus benefit children.

Significant geographical disparities may exist concerning of health needs of children across the different stages of childhood. These disparities can arise from various factors, such as the limited availability and accessibility of healthcare services and doctors, including paediatricians and other child specialists. Availability and accessibility can be assessed by measures of geographical distance to services from children's homes, or by information on available health services at a sufficiently granular, local level to ensure that estimates are based on services deemed as accessible. In addition, indicators relating to service utilisation can shed light on the extent to which children are covered by health services, including health insurance coverage, whether the system is offering routine vaccination and regular health checks, and through the proportion of children regularly visiting doctors and dentists (OECD, 2021[1]; Guio, Marlier and Frazer, 2020[137]). Finally, estimates of unmet needs for medical and dental care offer an indication of the extent to which health care services are accessible and effective in treating medical needs (OECD, 2021[1]). Examples of children's unmet needs include statistics on children with chronic health conditions and the occurrence of dental caries or missing teeth. Measuring unmet medical needs may be particularly relevant in the case of children who have special health care needs which may not be addressed to the same extent as other, more general needs. Some groups of children may be particularly vulnerable (e.g., children of immigrants or refugees, children in foster care or in the juvenile justice system), and special policies may be needed to ensure that these children have access to health care services.

Education and care services

A neighbourhood's education and care services provide care for young children while allowing parents to work, foster physical development and early learning and prepare children for their future careers and life as citizens. These services include early childhood education and care (ECEC), primary, secondary and post-secondary schooling, as well as public libraries and other neighbourhood educational resources available in the neighbourhood. High quality schools are powerful enablers of labour market success and social mobility. In addition, they may have further positive effects on well-being and risky behaviour of children and youth, such as reducing delinquency rates and teen pregnancies (Fryer and Katz, 2013[146]; Baron, Hyman and Vasquez, 2022[147]). Socio-economically disadvantaged children tend to gain the most from high-quality provision (Barry, 2009[148]). Evidence further suggests that high-quality neighbourhood education and care services not only benefit participating children, but also local, non-participating children through spill-over effects created by social interaction and parental investments (List et al., 2023[149]).

Where the use of education and care services is voluntary, such as for ECEC in many OECD countries, significant geographical variations in participation rates within countries exist (OECD, 2020[150]). They reflect differences in demand linked to socio-demographic composition (OECD, 2023[151]) as well as local supply conditions. Often cited barriers to greater use of education and care services include the lack of affordability of services, lack of availability or the long distance to travel to get to a place (Clarke and Thévenon, 2023[152]). To have an impact, education and care services thus need to be financially affordable, available and geographically accessible to children and their caregivers, especially to those

with lower socio-economic backgrounds who may have fewer books, toys and stimulating games at home (Ferguson et al., 2013[36]).

The quality of education and care services is also central to their beneficial effects for children. Quality includes structural factors (e.g., staff-to-child ratios in ECEC centres, per student expenditure, teacher experience and certification, staff participation in in-service training), and what is known as "process quality", that is, the quality of the processes and interactions that affect children's everyday experiences in ECEC (OECD, 2018[153]). The latter includes factors such as the sensitivity of teachers to children's emotions and behaviours, as well as individual needs, collaboration between staff members, and collaboration between staff and parents (OECD, 2015[154]). Regional heterogeneity can be expected in terms of 'quality processes' since these depend on practices that are not always standardized and may allow more flexibility for the initiative of hosting structures or local authorities. However, there is little data available from administrative sources or large-scale surveys to derive process quality indicators, either at the national or local level (OECD, 2021[1]).

Territorial inequalities in education also extend to schools themselves. The quality of schools can differ significantly from one neighbourhood to another, and this variation can have a direct impact on children's academic success (Laliberté, 2021[24]). Measuring school quality, however, is difficult since the quality of schools and the school environment is inherently multidimensional, impacting several aspects of students' lives that are relevant to their academic achievement and well-being (see Box 2). The existing literature does not allow us to pinpoint one or a few dimensions of school environment quality that should be prioritised for monitoring and that could realistically be collected.

Box 2. How do school environment characteristics impact on children?

The school environment plays a crucial role in the education of children, impacting not only their academic learning but also their socio-emotional development (OECD, 2021[155]). A positive school environment ensures that students feel physically and emotionally safe while fostering supportive relationships between students and teachers, as well as among students themselves. This positive atmosphere is closely linked to increased school engagement and classroom participation, ultimately enhancing academic achievement (Wang and Holcombe, 2010[156]; Reyes et al., 2012[157]). Moreover, it can potentially mitigate the negative effects of lower socio-economic status on academic success (Berkowitz et al., 2016[158]).

Several factors contribute to a strong and positive school environment, including effective classroom practices by teachers (such as classroom management and instructional clarity), classroom characteristics (student composition), school culture (student-teacher relations, academic pressure, parental, and community involvement), and school leadership (instructional leadership) environment (OECD, 2021[155]). Teachers' use of time and their own well-being and job satisfaction also play essential roles in students' learning outcomes.

Classroom size is another critical aspect of the school environment. Smaller class sizes are associated with reduced disruptive behaviours, which benefit concentration and curriculum delivery (Mostafa, Echazarra and Guillou, 2018[159]). Research indicates that the impact of class size on academic achievement is more pronounced among socio-economically disadvantaged children. While the effects of smaller classes on test scores are well-established, the debate about their long-term effects on post-graduation wages remains ongoing.

Additionally, the financial resources allocated by local and national governments to the schooling system influence children's educational achievement. School finance reforms that reduce funding disparities across schools can lead to significant increases in educational achievement, particularly in

disadvantaged schools (Lafortune, Rothstein and Schanzenbach, 2018[160]; Jackson, Johnson and Persico, 2015[161]). Funding mechanisms within schools can also narrow performance gaps among students. For instance, providing textbook subsidies to students below a certain academic threshold has been shown to improve their test scores.

The classroom's role as the central space for learning is of paramount importance. Cooperative student environments, where students support each other, foster better relationships and higher academic achievement (Roseth, Johnson and Johnson, 2008[162]). Healthy competition among students, especially within cooperative environments, can enhance motivation and academic success (Madrid, Canas and Ortega-Medina, 2007[163]; OECD, 2019[164]). Inter-team competitions that combine cooperative and competitive elements can be particularly effective (Morschheuser, Hamari and Maedche, 2019[165]).

Peer and social connections within the school are equally significant. Positive peer relations contribute to better academic performance, while negative social environments, particularly instances of peer victimization, are associated with lower academic achievement (Wang et al., 2014[166]). Additionally, students who feel a sense of belonging at school, characterized by acceptance, respect, and support, exhibit improved academic outcomes, higher motivation, and increased self-esteem (Slaten et al., 2015[167]; Wang and Holcombe, 2010[156]; OECD, 2019[164]).

Source: OECD (2021[1]), Measuring what matters for Child Well-being and Policies, OECD Publishing, Paris.

Child and family support services

Child and family support services encompass a wide range of additional services who work to enforce children's rights, and to assist families in dealing with personal, family, social, or psychological needs to the benefit of children's well-being and development. They include child protection services, opportunities for children to learn and develop (e.g., facilitation of ECEC placements), support for basic material needs for families in need (e.g., food, housing), facilitation of access to health and mental health services (e.g., childhood vaccinations, family counselling), subsidised or free cultural and leisure time activities for families, parenting support (e.g., parenting education programmes, including for expectant parents, respite services), and specialised services for vulnerable families and families with complex needs (e.g., services for children with disabilities and their families, for families affected by addiction, for families exposed to domestic conflict or violence, to address social disadvantage and discrimination and to provide culturally appropriate services for indigenous families and families with minority background) (Riding et al., 2021[140]).

These services are particularly important for children from families with fewer economic resources and limited social support networks. For example, children whose families face economic hardship are a greater risk of food and clothing insecurity, which can impact their school attendance, academic success and/or their socialisation with peers. Similarly, parents facing poverty and/or with limited social support can experience greater family stress, which can have detrimental consequences for parent-child interactions (Thévenon et al., 2018[168]). By addressing families' needs based on their personal or family circumstances, family support services can thus prevent and/or repair possible consequences of forms of childhood individual disadvantage, such as poverty (Acquah and Thévenon, 2020[169]).

A key aspect of child and family support services is their ability to take a holistic approach to aiding children and their families. They are uniquely placed to identify families' multiple and complex needs, to guide families through the system of available services, which tends to be fragmented (OECD, 2015[170]), and to coordinate assistance across a range of areas either through case management or by offering various services in one place or within one organisation (e.g., grouping clinical psychologists, occupational therapists, physiotherapists, speech and language therapists, special educators, social workers, nurses and paediatricians) (Riding et al., 2021[140]).

The presence of child and family support services in neighbourhoods encourages the utilisation of these services through greater proximity to children's homes and by enabling the tailoring of delivery to the specific needs of local children. This matters since a key challenge to effective service delivery is the systematic and sustained engagement of families as long as they stand to benefit from the offered services, particularly where involvement is on a voluntary basis. Reasons for the underutilisation of services include a lack of information and awareness on services, financial (the cost of transport, taking time off work) and physical mobility issues, and social and cultural barriers such as stigma (OECD, 2015[170]; Riding et al., 2021[140]). Offering home visits or using schools or community centres for service delivery (e.g., school meals, health screenings or psychological assistance) can reduce barriers to access and provide support that is tailored to the context and concrete needs of local families and children, increasing effectiveness (Riding et al., 2021[140]).

Data to measure the availability and quality of child and family support services across the OECD are extremely scarce. To obtain an overview of family support services across the OECD, Riding et al. (2021[140]) analysed responses to OECD questionnaires from 31 countries on family services policies and from 191 service providers in capital cities on their offered services. The offered services vary substantially across countries as well as within countries across different geographic areas. In the majority of countries, primary responsibility for the provision of family support services is shared between national and local authorities. Municipalities and other local authorities tend to shape a large part of the assistance provided to children and their families, often complementing national actions. In addition, services may be offered by a range of public agencies, or by NGOs and non-profit organisations, sometimes supported by local authorities (Daly, 2015[171]; UN DESA, 2020[172]) Given this large variation in the availability of services – the diversity of services involved and the large differences in their design and scope – overall information on service quality is even more limited.

Identified indicators for basic services for children

To conclude, the literature reviewed above provides strong support for the importance of basic services for children's well-being and development. Yet, it does not identify any suitable indicators to measure their quality. Instead, for all three types of basic services (health care services, education and care services, and child and family support services), the literature underscores the importance of measuring their availability, accessibility, and affordability to promote the use of these services, as well as whether service delivery is tailored to the multiple and complex needs that the most vulnerable children and families may have. Since leadership in the development of childcare and family support services often rests with municipalities and local authorities, the type of services provided varies widely across national territories. This further complicates data collection at the national level and makes international comparisons in this field difficult (Riding et al., 2021[140]; Almeida et al., 2024[173]). In such situations, it is important to concentrate on developing data and indicators related to the availability of a selected range of services, as well as assessing the extent to which the local supply aligns with the needs of the local population of children, and how it varies across different national territories. For example, the OECD is currently undertaking efforts to collect data on the geographical availability of ECEC services for some OECD countries (Almeida et al., 2024[173]) that can then be contrasted to the share of children living in an area. Table 3 below summarises indicators that exist today or that could be developed in the near to medium term.

Table 3. Key features of basic services affecting child well-being

Neighbourhood aspects	Characteristics that matter	Suitable indicators for monitoring
Health care services	Availability Accessibility Affordability Quality	• **Number of healthcare services and doctors**, (incl. pediatricians and other child specialists) • **Distance of health care services to children's homes** • Service utilization (e.g., share of children regularly visiting doctors and dentists), incl. for vulnerable child populations • Unmet needs (e.g., children with chronic health conditions or missing teeth), incl. for vulnerable child populations
Education and care services	Availability Accessibility Affordability Structural and process quality	• Capacity of the ECEC sector • Number of public libraries • **Distance to different education and care services** • **ECEC participation rates** • Financial affordability of different education and care services • Measures of structural quality (e.g., staff-to-child ratios)
Child and family support services	Availability Accessibility Quality	• Number of child and family support services • Distance to different child and family support services

Note: Suitable indicators for monitoring in bold represent neighbourhood measures with available data for a number of OECD countries.

3. Towards a systematic monitoring of children's neighbourhoods in OECD countries

In the realm of child policies, a significant challenge revolves around their effectiveness in *reaching the children who need them most*. These children often grapple with a dual disadvantage - they hail from economically disadvantaged families and frequently inhabit underprivileged neighbourhoods that offer inadequate support to them and their caregivers. While providing financial assistance to poor families can certainly enhance the well-being of these children, it might not yield a sufficiently transformative impact or substantial reduction in inequalities of opportunity if the neighbourhood itself is not designed to cater to their needs comprehensively. To achieve this, it is crucial to possess insights into the resources, risks, and challenges inherent in the local environment.

Data on children's local environments can *assist decision makers in resource allocation decisions*. The information can aid decision makers to limit the implementation of a specific policy measure only to those geographical areas where needs are most acute. For instance, to enhance the climate resilience of children's environments, regional or national policies may rely on monitoring indicators to identify the local areas that are most at risk of extreme weather events and target their efforts there. On the flipside, local and regional governments can use these data to advocate for more supports from higher-level governments by highlighting greater needs compared to other areas. Additionally, knowledge of the spatial distribution of children may influence decision making such that areas where many children suffer from disadvantage are prioritised to some extent. Finally, looking at various child-relevant neighbourhood characteristics jointly allows regional and national policy makers to identify neighbourhoods where disadvantages accumulate across multiple dimensions. These areas may be marked by unsafe and unhealthy environments, a lack of access to nature, high-quality essential services, and limited social structures to foster interpersonal connections. Pregnant women, children, and their families living in these highly deprived areas are often especially vulnerable and require substantial support to reduce disparities and ensure equal opportunities for children nationwide (OECD, 2025[28]).

Monitoring neighbourhood characteristics further facilitates *child policy coordination and integration*, particularly at the local level. For instance, if decision makers aim to increase children's utilisation of public playgrounds, they need to ensure that the playgrounds are close to children's homes, the street design is child-friendly in order to access the places, and that the quality of the playgrounds themselves is high and children and their caregivers feel safe so that they wish to spend time there. Successful policies will need to consider all these policy areas to be able to expect effective change. In addition, data on various local characteristics can help leverage neighbourhood strengths. For instance, high-quality schools can serve as resources to strengthen social connectivity by holding community activities on school grounds after school and on weekends. Similarly, child and family support services might benefit from collaboration with school staff to better reach certain families.

Across all levels of government, neighbourhood data can help decision makers *manage trade-offs*. For example, expanding the street and public transport network can provide children and their caregivers with access to services, leisure facilities and opportunities but it may also increase children's exposure to pollution and increase risks to their physical safety. Data on existing levels of street connectivity and public transport performance and children's exposure to pollution can offer valuable insights for such a decision. Therefore, neighbourhood indicators are an essential tool for guiding child-centric policies and fostering a coordinated and coherent approach, ultimately contributing to levelling up opportunities for children from the outset (OECD, 2021[1]; Dirwan and Thévenon, 2023[29]).

Measures of the quality of children's neighbourhoods also play a pivotal role in *effective policy monitoring and evaluation*. Across all levels of government, local metrics can be used beyond the initial choice and design of policies to set policy objectives for improvement or as supporting indicators to track the progress of policy interventions. A well-defined implementation plan with clearly defined overall targets and quantified intermediate milestones strengthens policy implementation by building a shared vision and facilitating coordination across actors. These data can further serve as feedback mechanisms to identify areas for improvement during the implementation phase. In addition, these metrics can be used to evaluate policies' impact during and after their implementation and thereby enhance our still limited understanding of policy measures that foster child-friendly neighbourhoods (OECD, 2025[28]). When evaluations rely on local indicators that are harmonised across countries, we gain additional insights into the role of different policy contexts for the effectiveness of similar interventions.

Many countries recognise the importance of children's neighbourhood conditions and the interconnectedness of various aspects and are designing policies to tackle neighbourhood inequities in addition to addressing children's individual-specific circumstances. This work typically emphasises the need for reliable, local-level data to guide policy making and to strengthen collaboration across policy areas and levels of government. For example, as part of their efforts to better understand and mitigate social determinants of health to improve well-being, the United States is undertaking efforts to improve neighbourhood conditions nationwide though a whole-of-government approach. A key pillar of this work is the expansion of the geospatial data collection and sharing infrastructure (The White House, 2023[174]). The remainder of this paper studies examples of monitoring initiatives of children's neighbourhoods from Australia, Belgium, Canada, France, Iceland, Korea and the United States and, using these insights, explores the feasibility of a cross-national monitoring in OECD of children's neighbourhood conditions as outlined in the conceptual framework in section 2 above.

3.1 Existing initiatives to measure child-friendly neighbourhoods

With the large developments in geospatial data collection in recent years, several national and subnational monitoring initiatives of the child-friendliness of neighbourhoods have started to emerge. This section focuses on twelve of them (see Box 3), and reviews the aspects of neighbourhoods that these initiatives cover along the three main dimensions discussed in section 2, as well as the purpose that they serve. These initiatives are valuable models for the development of an OECD-wide monitoring framework to inform policies for child-friendly neighbourhoods. In addition, the analysis of the indicators they use can reveal common data gaps and thus guide the development of new indicators of child-friendly neighbourhoods.

Box 3. Selected initiatives to measure child-friendly neighbourhoods in OECD countries

Place-based monitoring and analyses of opportunity and well-being are increasingly being conducted across OECD jurisdictions. However, these initiatives sometimes monitor living conditions for the

general population or concentrate on individual aspects such as social mobility or health outcomes. For the purpose of this work, we identified eleven initiatives that focus on children specifically and that monitor a range of present-day neighbourhood aspects that are important for children: the *Child Development Atlas* from Western Australia (Australia), the *Child Well-being Dashboard* from the City of Waterloo (Ontario, Canada), *Children's Living Conditions in Metropolitan France* (France), *Dashboard on Children's Prosperity* (Iceland), *Neighbourhoods Where Children Are Happy* covering neighbourhoods in 17 Korean cities and provinces (Korea), the *Ohio Children's Opportunity Index* from Ohio, *Keeping Track of New York City's Children* from the City of New York, *DC Kids Count* from Washington DC, the *Upward Mobility Data Dashboard*, the *Child Opportunity Index* and *Kids Count Data Centre* (all United States, the latter three being US-wide initiatives). One additional initiative, *Provinces in Figures* (Belgium), does not focus on children specifically but is included as it provides data on numerous neighbourhood aspects that are important for children.

Most of these initiatives have been developed in recent years with the objective to support policies, agencies and service delivery related to child well-being in general. Only the Ohio Children's Opportunity Index, the US-wide Child Opportunity Index, and the Icelandic Dashboard on Children's Prosperity have a narrower focus, monitoring determinants of health outcomes, health and economic outcomes, and physical and mental health outcomes and their determinants, respectively. In half of the initiatives (Child Well-being Dashboard Waterloo, Children's Living Conditions in Metropolitan France, Iceland's Dashboard on Children's Prosperity, Belgium's Provinces in Figures, Ohio Children's Opportunity Index and the US-wide Child Development Index), governmental agencies were involved in the development of the initiatives and in some cases, they include collaborations with research institutes (e.g., the Ohio Children's Opportunity Index and the Upward Mobility Data Dashboard).

By measuring differences across policy and geographical areas, the initiatives serve to inform about regional disparities regarding children's neighbourhood contexts. The information on aspects of children's local environments is publicly accessible and conveniently grouped in one place. Many initiatives allow users to browse the data via online, geographical maps or interactive dashboards while others serve as an online database or publish the data in the form of reports. The initiatives largely rely on data for children from 0 to 18 years from government statistics that are publicly available. The Child Development Atlas (Western Australia) extends their focus to young people of up to 24 years of age. An example of proprietary data that are used are school level test and graduation data (US-wide Child Opportunity Index).

To report the data, nine out of the twelve initiatives present individual indicators for each aspect under consideration[3] whereas the others also compute domain-specific indices and an overall index of the child-friendliness of neighbourhoods.[4] Most initiatives contain up to 30 indicators of neighbourhood characteristics, although the Ohio Children's Opportunity Index and the Children's Living Conditions in Metropolitan France each comprise over 50 and the Child Development Atlas (Western Australia) and Provinces in Figures (Belgium) use over 100 indicators.

Some initiatives publish indicators by population subgroups such as race. Many initiatives offer data for several recent time periods to study changes over time and to be able to link neighbourhood outcomes to the introduction of new public policies. Some initiatives explicitly acknowledge that their current

[3] This is true for the Child Development Atlas (Western Australia), Children's Living Conditions in Metropolitan France, Dashboard on Children's Prosperity (Iceland), Neighbourhoods Where Children Are Happy (Korea), DC Kids Count (United States), US-wide Upward Mobility Data Dashboard and Kids Count Data Centre, Child Well-being Dashboard Waterloo (Canada) and Provinces in Figures (Belgium).

[4] These are the Ohio Children's Opportunity Index, Keeping Track of New York City's Children, and the US-wide Child Opportunity Index (all from the United States).

database is limited by the existing local-level data. At the same time, all initiatives emphasise the value of the insights that these data can already offer for policy, even when they are approximations. Typically, the initiatives have plans for regular data updates and to expand or refine their indicators as new and better local level data become available and as our understanding of the relationship between neighbourhood factors and child well-being grows.

There are many commonalities between the initiatives reviewed in this section and there is substantial convergence with the neighbourhood aspects identified in the conceptual framework developed in section 2. While taken together, the initiatives offer information on all areas of the conceptual framework, no single initiative reaches this level of coverage (see Table 4). The initiatives also feature some differences between them, which arise mainly from their different purpose (see Box 3) or data availability[5].

Characteristics of **the natural and built environment** are among the least well-covered by the twelve initiatives. Only the Child Opportunity Index, the Ohio Children's Opportunity Index, and the Upward Mobility Data Dashboard (all United States) offer data on more than half of the relevant characteristics of the natural and built environment, possibly due to their strong focus on children's health outcomes. **Housing** conditions is the sole area of the built environment where indicators are available across most initiatives. Nine out of the twelve initiatives comprise statistics such as local housing vacancies, housing stability (share of population not living in the same unit for over a year), rent burden or eviction rates (see Table A.1 in Annex A for more detail on the indicators developed by the twelve initiatives). Data on **streets and public transport**, **green spaces** and **technical infrastructure** are each collected by four to five initiatives. Indicators in these areas include measures of short/long work commutes, traffic-related casualty rates and indices of the walkability of places, the share of land not covered by vegetation, and broadband access. The Child Opportunity Index, the Ohio Children's Opportunity Index, and the Upward Mobility Data Dashboard (all United States) provide evidence on children's **exposure to pollution** including the estimated air quality (microparticles, ozone concentration) and the count of nearby hazardous waste dump sites. Only the Neighbourhoods Where Children Are Happy initiative from Korea offers information on children's **playground and community spaces** through a count of children's local play facilities. The Child Opportunity Index (United States) includes a measure of children's exposure to heat, which makes it the only initiative to provide information on the **climate resilience** of places.

While the quality of children's natural and built environment is currently not well-covered by most of the selected initiatives, monitoring is becoming easier thanks to large scale data developments of local-level indicators. For example, the Urban Institute, with support from the US Department of Health and Human Services Office of the Assistant Secretary for Planning and Evaluation, has released a data tool for the United States (Head Start Environmental Exposure Mapping Tool) that shows ZIP-code level indicators on lack of green spaces, exposure to air pollution (air quality, air toxins, air pollutants, ozone concentration, diesel exhaust) and lead, extreme heat, flood risk, wildfire risk (Urban Institute, 2023[175]). These ten indicators were identified as they capture environmental aspects that are deemed particularly dangerous for children. The monitoring initiatives from the United States could use these data to develop their database in the framework areas 'green spaces', 'limited exposure to pollution' and 'climate resilience'.

The **social relationships** are well covered by measures of the **neighbourhood socio-economic composition** like local average household income, child poverty rates, the share of unemployed adults and educational attainment among adults. In addition to the elements identified in section 2, all initiatives except the Child Well-being Dashboard Waterloo also publish demographic metrics. These include information on family living arrangements such as the share of single-parent families in the neighbourhood, family size or the share of children in foster care but also on community diversity, measured by the share

[5] For example, the US-wide Child Opportunity Index does not include indicators on 'safety' for lack of crime statistics or alternative data sources at the census tract level.

of children/people with a migrant background, who speak a different language at home or who have refugee status. Initiatives may use demographic indicators may to capture the quality of children's neighbourhoods per se but to analyse potential inequalities across demographic groups (Urban Institute, 2024[176]).

Similarly, all initiatives comprise some information on children's **peer outcomes and social safety**. The indicators used to inform peer outcomes vary according to the area of life covered and the data available at the local level. This includes, for example, data on higher or post-secondary education enrolment among young adults, summer youth employment program participation, teen birth rates, rates of teenagers Not in Education, Employment or Training (NEET), as well as school behavioural incidents (suspensions, expulsions, arrests) and academic achievement, youth crime/juvenile offenders, or police stops of minors and police use of force incidents involving minors. To assess children's social safety in a neighbourhood, various crime statistics are used, such as per person rates of homicides or burglaries, as well as survey data on the share of children whose parents disagree that their child is safe in their neighbourhood.

However, fewer initiatives comprise data in the area of **social connectivity and community participation**. Only the Children's Living Conditions initiative (France), the Dashboard on Children's Prosperity (Iceland), the Child Opportunity Index, and the Kids Count Data Center, and the Upward Mobility Data Dashboard (all three United States) report some approximative measures in this area. For instance, they provide information on the share of children registered in sports clubs, volunteering rates or the share of eligible voters. The reason for the low coverage of this area by the twelve initiatives is likely the absence of available data. For example, the Child Opportunity Index states that indicators reflecting social capital and collective efficacy "were either too costly to acquire or not comparable over time" (Noelke et al., 2020[177])..

Regarding the local availability of high-quality **basic services for children**, measures of **health care services** and **education and care services** are well represented across the initiatives. Some indicators aim to capture the accessibility and quality of services directly or through measures of use (e.g., prenatal care visits in the first trimester, children fully immunised for their age, visits to general practitioners, hospitalizations, health insurance coverage for children, and availability and take-up of ECEC for children below school age). Other indicators focus on children's outcomes to illicit information on the accessibility and quality of services offered. In the area of health care, many initiatives use data on unmet needs to assess the quality of health care services. This includes statistics on children with chronic health conditions, mental health diagnoses, children with drug-related injuries or substance abuse disorders, etc. Similarly, for education and care services, disparities in school quality are captured through indicators like school performance, school added value, and school dropout rates.

The only area of basic services for children that is not widely covered are **child and family support services** (five initiatives comprise information in this area). As highlighted in the literature review in section 2, the diversity of services offered and the range of actors that can be involved in their delivery make it challenging to obtain information on the availability of local child and family support services and even more so to assess their quality. Nevertheless, five of the twelve initiatives cover relevant elements, such as information on calls children made to a designated helpline, children who are subject to at least one substantiated or indicated maltreatment report, and children below age 3 whose parents did not receive a home visit.

Table 4. Coverage of framework areas by existing initiatives that monitor the child-friendliness of neighbourhoods

Framework area \ Initiative	Child Development Atlas (Western Australia)	Children's Living Conditions (France)	Child Opportunity Index (United States)	Child Well-being Dashboard Waterloo (Canada)	Dashboard on Children's Prosperity (Iceland)	DC Kids Count (Washington DC, United States)	Keeping Track of New York City's Children (United States)	Kids Count Data Center (United States)	Neighbourhoods Where Children Are Happy (Korea)	Ohio Children's Opportunity Index (United States)	Provinces in Figures (Belgium)	Upward Mobility Data Dashboard (United States)
Housing	x	x	x			x	x	x		x	x	x
Streets and public transport			x						x	x	x	x
Green spaces			x						x	x	x	
Playgrounds and community spaces									x			
Technical infrastructure	x							x		x		x
Limited exposure to pollution			x							x		x
Climate resilience			x									
Neighbourhood socio-economic composition and "economic connectedness": Employment and educational attainment	x	x	x	x		x	x	x		x	x	x
Neighbourhood socio-economic composition and "economic connectedness":	x	x	x		x	x	x	x	x	x	x	x

Framework area \ Initiative	Child Development Atlas (Western Australia)	Children's Living Conditions (France)	Child Opportunity Index (United States)	Child Well-being Dashboard Waterloo (Canada)	Dashboard on Children's Prosperity (Iceland)	DC Kids Count (Washington DC, United States)	Keeping Track of New York City's Children (United States)	Kids Count Data Center (United States)	Neighbourhoods Where Children Are Happy (Korea)	Ohio Children's Opportunity Index (United States)	Provinces in Figures (Belgium)	Upward Mobility Data Dashboard (United States)
Demographic factors												
Social connectivity and community participation		x			x	x		x				x
Peer outcomes and social safety	x	x	x	x	x	x	x	x	x	x	x	x
Health care services	x	x		x	x	x	x	x	x	x		x
Education and care services	x	x	x	x	x	x	x	x	x	x	x	x
Child and family support services	x				x	x		x	x			

3.2 Developing an OECD-wide monitoring framework

While the benefits of monitoring children's neighbourhood conditions for policy making in general have been laid out previously, this section explores the rationale and feasibility of developing a cross-national monitoring framework specifically. Several reasons motivate the development of such an OECD database. First, it could complement national and subnational initiatives outlined above by taking a holistic, child well-being perspective based on the comprehensive set of neighbourhood characteristics outlined in the conceptual framework of section 2 and that existing initiatives do not always cover fully. For instance, we saw that many aspects of the natural and built environment, such as children's exposure to pollution and the climate resilience of their neighbourhoods, are only covered by a minority of monitoring initiatives. Second, an OECD database would offer important insights to policy makers in countries where monitoring initiatives of children's neighbourhoods do not exist. We identified initiatives in seven countries, implying that the benefits of an OECD monitoring framework may be particularly large for the remaining OECD countries. Third, by expanding the number of countries with available data and by offering harmonised data across different policy contexts, a cross-national monitoring of child-friendly neighbourhoods would allow to pinpoint similarities and distinctions among countries across the neighbourhood dimensions outlined in the conceptual framework, and thereby facilitate analyses of the role of policy in place-based disadvantage.

The feasibility of developing a cross-national monitoring of children's local environments is high as there is a good availability of local data that can offer relevant insights for policy making at national, regional and local level. The data requirements of an OECD-wide monitoring framework include that data are i) not context-specific, i.e., that they are reliable markers of the quality of children's environment across geographies, ii) harmonised to allow for comparisons across countries and iii) available for local geographical units that are meaningful to policy makers. Available OECD regional data meet all requirements (see Box 4). While these data are geographically coarser than the neighbourhood level, they still offer important first policy insights, particularly for national and regional policy makers. Thanks to continuous investments in geospatial data development in general and at the OECD, many relevant indicators are now also available at municipality level and there is still a lot of potential for further cross-national indicator development to enhance the thematic scope of indicators available at municipality level as well as to develop certain indicators at even finer geographical scale (see Box 4). Such granular monitoring allows to determine specific local areas where additional efforts are most needed for children's well-being and aids decision makers to identify relevant policy domains for action and to guide practical decisions for local policy implementation (OECD, 2025[28]). Granular monitoring data of children's environments benefits policy makers at the local level in particular as their capacities to gather these data on their own can be more limited than at higher levels of government.

Box 4. Delineating neighbourhoods and practical data considerations for OECD-wide monitoring

While it would be ideal for the data on neighbourhood characteristics to cover the geography of neighbourhoods as experienced by children and their families (Box 1), this information is typically not available at scale across OECD countries. Instead, more aggregated, subnational data along administrative units down to municipalities exist. Using these data for monitoring will necessarily result in imperfect measures as children's daily radius tends to be smaller and their actual environment may look very different from the average environment of the geographical area for which there is data. Nevertheless, such measurement can provide important approximations of geographical inequalities in children's neighbourhoods. Aggregating neighbourhood metrics along administrative boundaries further

ensures that data insights correspond to policy making responsibilities and is in line with practices from existing initiatives reviewed in section 3.1.

The OECD-wide monitoring framework includes cross-national indicators that are available at subnational level and across a country's entire territory. On the other hand, it does not comprise additional, granular data that may be available for some (urban) areas only (including the available data for cities and functional urban areas (OECD, 2024[178])). This has two reasons: First, a key purpose of the framework is to inform national and regional resource allocation decisions to provide additional supports to children in disadvantaged neighbourhoods, which cannot be done with only partial coverage. Secondly, a focus on indicators that cover a country's entire territory rather than partial coverage ensures that indicators are relevant to a wide audience. Policy makers may then complement this monitoring information with additional data that may be available for their region or city.

The OECD Territorial Level Classification

Specifically, the OECD monitoring framework could rely on geographical units according to the OECD Territorial Level (TL) classification. The classification contains two subnational, territorial levels – TL2 and TL3 regions – that reflect countries' administrative organisation[6]. In fact, the classification is used as a framework for implementing regional policies in most countries. Therefore, data provided at TL2 or TL3 level seem particularly suitable to inform national policy makers until further improvements in geospatial data development increase the availability of harmonised, country-wide data at neighbourhood level.

The total of 433 large TL2 regions across all 38 OECD countries represent the first administrative tier of subnational government. They are contained within national borders and fully cover a country's territory. TL2 regions can be further split into smaller TL3 regions[7], a total of 2 414 across the OECD. For example, the TL2 region of Aragon in Spain encompasses three TL3 regions: Huesca, Teruel and Zaragoza. Small regions at TL3 level can additionally be distinguished between predominantly urban, predominantly rural, and intermediate regions (OECD, 2011[179]).

The OECD Classification of Municipalities and Local Areas

To further subdivide TL2 and TL3 regions, the OECD has recently developed a reference grid of administrative units corresponding to local governments, i.e., the lowest tier of administration within a given country. These generally represent municipalities and communes (for country-specific information on the corresponding administrative unit, see the OECD Local Data Portal (2024[180])). Indicators available at this level are sometimes built on data from highly granular spatial grids. For example, the indicator measuring the share of built-up areas in a municipality is based on satellite data on land coverage from the European Space Agency, which offer a grid of 10 m resolution across the globe. Such data hold potential for future cross-national indicator development across a range of neighbourhood characteristics for areas below the municipality level, which can approximate children's neighbourhoods even better.

Source: OECD (2022) OECD Territorial grids, available at: https://www.oecd.org/cfe/regionaldevelopment/territorial-grid.pdf and OECD (2024[180]) Local Data Portal, available at https://localdataportal.oecd.org/methodology.html.

[6] Exceptions are TL3 regions in Australia, Canada and the United States, which do not perfectly correspond to lower-tier administrative regions.

[7] The United States present an exception, where TL3 regions do not uniquely map to TL2 regions.

Table 5 summarises the review of available indicators that could underpin an OECD-wide monitoring framework of child-friendly neighbourhoods. It lists over 50 indicators that are available mostly at municipality level, and at small or large regional level otherwise. The data are selected primarily based on the suitable measures identified in the literature in section 2. In areas where data availability is particularly low, it draws inspiration from the existing initiatives presented in section 3.1 and their indicators (Table A.1 in Annex A) to approximate information about children's neighbourhoods (e.g., information on average household income instead of neighbourhood affluence or poverty as identified in the conceptual framework in Section 2). In addition, the indicators on neighbourhood characteristics are complemented by information on the number and share of children in the area to contextualise the possible impact of poor local conditions. However, no further demographic indicators are added in Table 5 that would allow to analyse disparities across groups, contrary to many of the reviewed initiatives in section 3.1. This is largely due to a lack of comprehensive data across the OECD.

In line with the majority of reviewed initiatives, the proposed indicators in Table 5 are presented individually and no composite indicators are suggested at this stage. For all areas but *playgrounds and community spaces* and *child and family support services*, cross-national data exist at a subnational level, often down to the municipality level. The framework area *climate resilience* is particularly well covered by the available data. For most other areas, such as *limited exposure to pollution*, there exists rich data for some aspects (e.g., air pollution) but not others (e.g., exposure to environmental toxins). In the framework area *social connectivity and community participation*, there are no available data for any of the indicators identified as relevant in the literature. Instead, data exist for aspects like perceived social network support (not tied specifically to support from neighbours) and voter turnout in the last general election, which might be seen as proxies for capturing levels of community engagement in children's neighbourhoods in the absence of better measures. Overall, we consider the available data sufficient to constitute a first set of indicators for an OECD-wide monitoring database of children's neighbourhood conditions.

Table 5. Identified international data to measure children's local environments in OECD countries

Framework area	Suitable indicators identified in the literature	Available international data at local level
Contextual demographic information		• Share of 0-14 year-olds in population and total – OECD (2024[181])
The natural and built environment and their spatial configuration		
Housing	Overcrowding Unsanitary housing conditions Children's blood or dentine lead levels Tax data or other market value measures Residential instability Rates of home ownership Housing vacancy rates Indicators of housing market distress Housing prices	• Number of rooms per person – available at TL2 level, large regions; OECD (2022[182]) • Housing costs transaction price (total and per square meter; both in current USD PPP) – OECD (2024[181]) • Share of Housing Cost (in household disposable income) – available at TL2 level, large regions; OECD (2024[178]) • Housing stock (share of vacant dwellings, share of dwellings occupied by renters, share of dwellings that are secondary residences) – OECD (2024[181])
Streets and public transport	Traffic road injuries Secured cycling lanes Multiple stops/commutes and connections Time it takes for residents to reach variable points of interest	• Mortality rate due to transport accident (deaths for 100 000 population) – available at TL3 level, small regions; OECD (2024[178]) • Number of private passenger vehicles per 1 000 people and degree of urbanisation (city, town and semi-dense area, rural area) – OECD (2024[181]) • Share of workers using a given mode of transport (car, scooter, public transport, bicycle or walking) as their main mode of transport to work – OECD (2024[181])

Framework area	Suitable indicators identified in the literature	Available international data at local level
Green spaces	Availability of green spaces Size of green spaces Distance of green spaces from children's residence	• Share of green areas (trees, shrubland and grassland) of land area (total and per capita) – OECD (2024[181]) • Share of built-up surface of land area (total and per capita) – OECD (2024[181])
Playgrounds and community spaces	Availability of playgrounds Availability of indoor and outdoor community spaces Distance from children's residence	–
Technical infrastructure	Broadband access	• Share of households with broadband access (%) – available at TL2 level, large regions; OECD (2022[182]) • Upload and download speeds for each, fixed and mobile networks: percentage point deviations from the national average – OECD (2024[181])
Limited exposure to pollution	Air pollution Exposure to environmental toxins	• Average population exposure to air pollutants (nitrogen dioxide (NO2), and particulate matters (PM2.5 and PM10)) – OECD (2024[181])
Climate resilience	Exposure to climate-related hazards	• Days with extreme temperature events in 2019-2023 and changes compared to 1981-2010, for each: hot days, tropical nights, icing days – OECD (2024[181]) • Extreme precipitation days in 2019-2023 and changes compared to 1981-2010 – OECD (2024[181]) • Drought (soil moisture changes, 2019-2023 compared to 1981-2010) – OECD (2024[181]) • Share of area burned by wildfires in 2019-2023 – OECD (2024[181]) • Share of population exposed to 100-year river flooding – OECD (2024[181]) • Share of population exposed to 100-year coastal flooding – OECD (2024[181])
The social relationships		
Neighbourhood socio-economic composition and "economic connectedness"	Neighbourhood poverty Share of higher education graduates Prevalence of single-parent families Neighbourhood affluence Network connections with higher socio-economic groups	• Equivalised household disposable income – OECD (2024[181]) • Share of people living in relative poverty – available at TL2 level, large regions; OECD (2024[181]) • Municipal-level Gini coefficient – OECD (2024[181]) • Labour force participation rate – OECD (2024[181]) • Employment rate – OECD (2024[181]) • Unemployment rate – OECD (2024[181]) • Share of adults with less than secondary education – available at TL2 level, large regions; OECD (2024[178]) • Share of higher education graduates – available at TL2 level, large regions; OECD (2024[178])
Social connectivity and community participation	Neighbourhood and community belonging Collective efficacy Trust in others Participation in extra-curricular activities Volunteering and membership in clubs	• Voter turnout in general election – available at TL3 level, small regions; OECD (2024[178]) • Perceived social network support – available at TL2 level, large regions; OECD (2022[182])
Peer outcomes and social safety	School dropouts Teen pregnancies Youth crime and delinquency Crime rates (e.g., violent crimes, drug use) Perception of neighbourhood safety	• Youth not in education and unemployed or inactive (NEET), aged 18-24 – available at TL2 level, large regions; OECD (2024[178])

Framework area	Suitable indicators identified in the literature	Available international data at local level
		• Rate of Early Leavers from Education and Training, aged 18-24 – available at TL2 level, large regions; OECD (2024[178]) • Youth unemployment (15-24-year-olds) – OECD (2024[178]) • Homicide rate (per 100 000 people) – available at TL2 level, large regions; OECD (2022[182]) • Motor vehicle theft (total cases and cases per 100 000 persons) – available at TL3 level, small regions; OECD (2024[178])
Basic services for children		
Health care services	Number of healthcare services and doctors Distance of health care services to children's homes Service utilization, incl. for vulnerable child populations Unmet needs, incl. for vulnerable child populations	• Life expectancy at birth – available at TL3 level, small regions OECD (2024[178]) • Infant mortality rate – available at TL3 level, small regions; OECD (2024[178]) • Density of active physicians (incl. specialists) per 1 000 people – available at TL3 level, small regions; OECD (2024[178]) • Average distance to the closest hospital – OECD (2024[181]) • Average distance to the closest pharmacy – OECD (2024[181])
Education and care services	Capacity of the ECEC sector Number of public libraries Distance to different education and care services ECEC participation rates Financial affordability of different education and care services Measures of structural quality (e.g., staff-to-child ratios)	• ECEC enrollment rates – available at TL2 level, large regions; OECD (2024[178]) • Average distance to closest school – OECD (2024[181]) • Average distance to closest ECEC centre – OECD (2024[181])
Child and family support services	Number of child and family support services Distance to different child and family support services	–

Note: Unless the indicator specifies otherwise, data are available at the level of Municipalities and Local Areas.

The data sources identified so far should be considered as the initial set of data from which indicators could be drawn when building an OECD monitoring framework for the child-friendliness of neighbourhoods, and national and local decision makers may complement the information with additional data available for their jurisdiction. This initial set of indicators could be further refined over time. Large efforts are being undertaken at the OECD and by countries to continuously increase the availability of cross-national, geospatial data. This will expand the scope of available data across policy areas, the extent of geographical coverage, and the level of granularity of existing subnational indicators. For instance, the accessibility of public transport, measured by the share of the population that lives within a 10-minute radius by foot of a public transport stop is currently only produced for cities and their commuting zones by the OECD. However, the underlying data are available for countries' entire territories and geographical coverage could therefore be expanded. Similarly, for information on land use (e.g., green spaces, bodies of water, built-up area), Internet speed, and air pollution, for example, data exist for grids ranging from 10 m to 2 km. This holds the potential to construct certain indicators at the neighbourhood level, or even at block or street level. More generally, possibilities for better measurement of children's neighbourhoods will further increase with advancements in scientific evidence on reliable cross-national metrics and the continued growth of high-resolution, geospatial primary data sources.

3.3 Policy-relevant insights from geospatial analysis of children's environments across the OECD

This section provides a few examples to highlight the insights that could be derived from an OECD-wide monitoring of children's environments. More precisely, it focusses on illustrating how the assessment of territorial disparities in children's neighbourhood risks and resources can guide countries' investments and policies in areas where children's needs are greatest. Cross-refencing multiple characteristics of children's local environment permits to recognise areas where children may face (multiple forms of) disadvantage and how many children are likely to be affected by poor neighbourhood conditions, to identify the need for coordinated policy approaches within geographical areas, and to study common relationships between neighbourhood conditions. Specifically, the indicators selected for this analysis make it possible to explore the relationships between neighbourhood characteristics, the distribution of children across various regions of the national territory, and the relative affluence of households residing in those regions. Data for the examples are presented at the small regional level (TL3), which may be relevant territorial units to inform higher-level policies and funding allocations (for decision makers either at national or large regional level (TL2)).

One indicator from Table 5 is selected for each of the three main areas of the conceptual framework presented in section 2 in addition to information on the distribution of children across geographies:

- An indicator of **regional income**, as collected within the project "The geography of income inequalities in OECD countries" (Königs et al., forthcoming[183]), is utilised to characterise children's social relationships. Differences in regional income can be associated with significant disparities in children's social context and their available neighbourhood resources and opportunities.
- Regional measures of **air pollution** are taken as an indicator of risks for children associated with the spatial configuration of the built environment.
- Regional measures of the density of **physician availability** are used to assess access to a form of basic services.

Figure 2 compares the distribution of children under 15 within each country across regions grouped into three categories according to the median income level of the population in each region. This enables a comparison of the proportions of children residing in the 25% most economically disadvantaged regions as opposed to those in high-income areas (the 25% of regions with the highest median incomes). Such information holds significant relevance for countries when it comes to policy monitoring, as it sheds light on the disparities in resources and opportunities, which matter especially for children living in lower income regions. Children in these regions are more likely to experience the dual disadvantage of growing up in a poor family and living in a community with few economic resources.

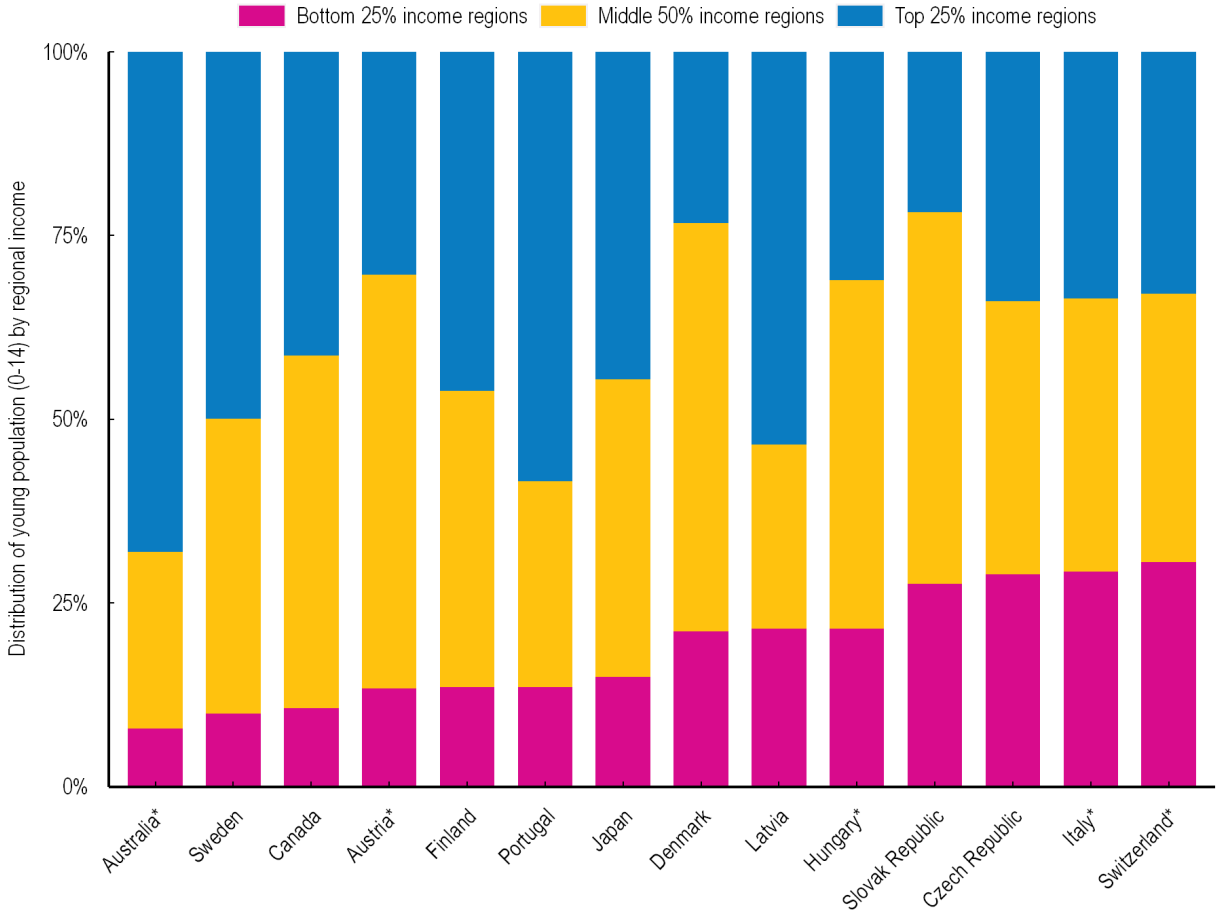
The data on regional income disparities are limited to a few countries (Figure 2). They reveal significant disparities between countries in the distribution of children based on the relative income of regions. For example, in Australia, less than 8% of children live in the poorest quarter of regions, while more than three times that proportion reside in the poorest regions in Slovak Republic (28%), Czech Republic (29%), Italy (29%) and Switzerland (31%). In these latter countries where a much higher proportion of children live in economically poor regions, addressing child poverty and its effects on children's well-being and development may require assisting economically disadvantaged regions in offering children the same neighbourhood opportunities as higher-income regions.

Conversely, it is noteworthy that half or more of children live in regions that belong to the top quarter of regions with higher median incomes, not only in Sweden (50%) but also in Latvia (53%), Portugal (58%) and Australia (67%). However, it's important to bear in mind that a child residing in a high-income region may still come from a low-income family, just like some children in economically disadvantaged regions may belong to families classified as affluent when considering family income. Assistance to

neighbourhoods with low economic resources is therefore required in addition to family-specific support measures, such as cash transfers, to provide adequate support to children from low-income families in an economically disadvantaged region who face a double disadvantage but also to assist children who experience neighbourhood disadvantage despite their family's affluence.

Figure 2. Nearly one in five children live in relatively poor regions

Percentage of children under age 15 by regional mean income level, 2017



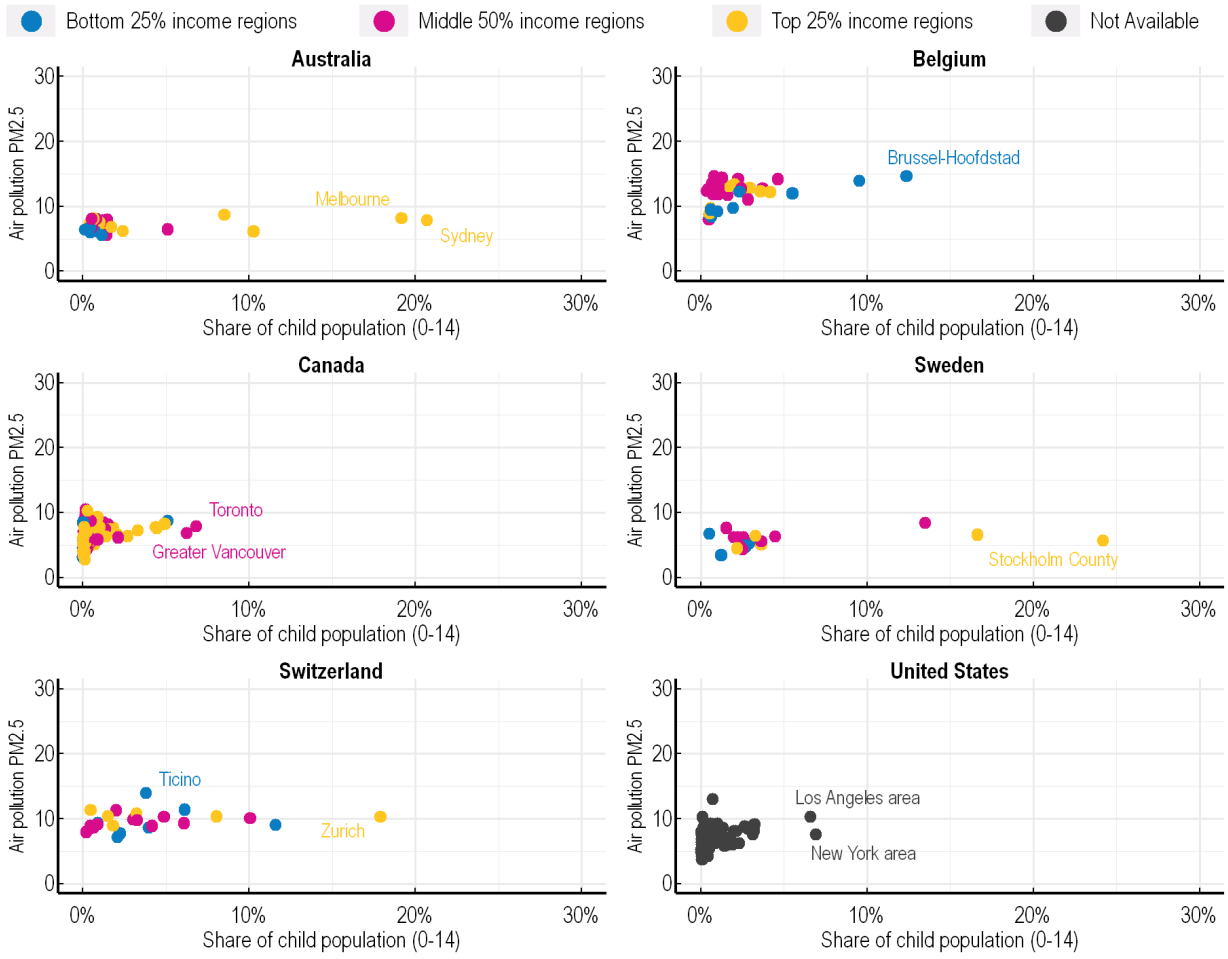
Note: This figure shows the share of 0-14 year-old children in a country who live in regions (TL3 level) where the mean household disposable income is among the lowest/middle/highest of all regions in the country. * Income data for Austria and Australia are based on individual disposable income, for Switzerland on household gross income, and for Hungary and Italy on individual employment outcome. Income data for Canada, Italy and Japan are from 2016, 2018 and 2019, respectively.
Source: OECD calculations based on Königs et al. (forthcoming[183]), The geography of income inequalities in OECD countries and OECD (2024[178]) Regions and Cities databases.

Cross-referencing of regional indicators also makes it possible to examine whether exposure to specific risks varies by region and whether it is higher or lower in regions with dense child populations. For example, correlations can be examined to identify regions where a significant proportion of children are at risk of being affected by high levels of pollution. Figure 3 and Figure B.1 in Annex B depict the level of exposure to air pollution, measured by the average concentration of fine particles, and the proportion of children under age 15 living in each region. In addition, the figures distinguish regions by income level as an indication of accumulation of disadvantage in children's local environments.

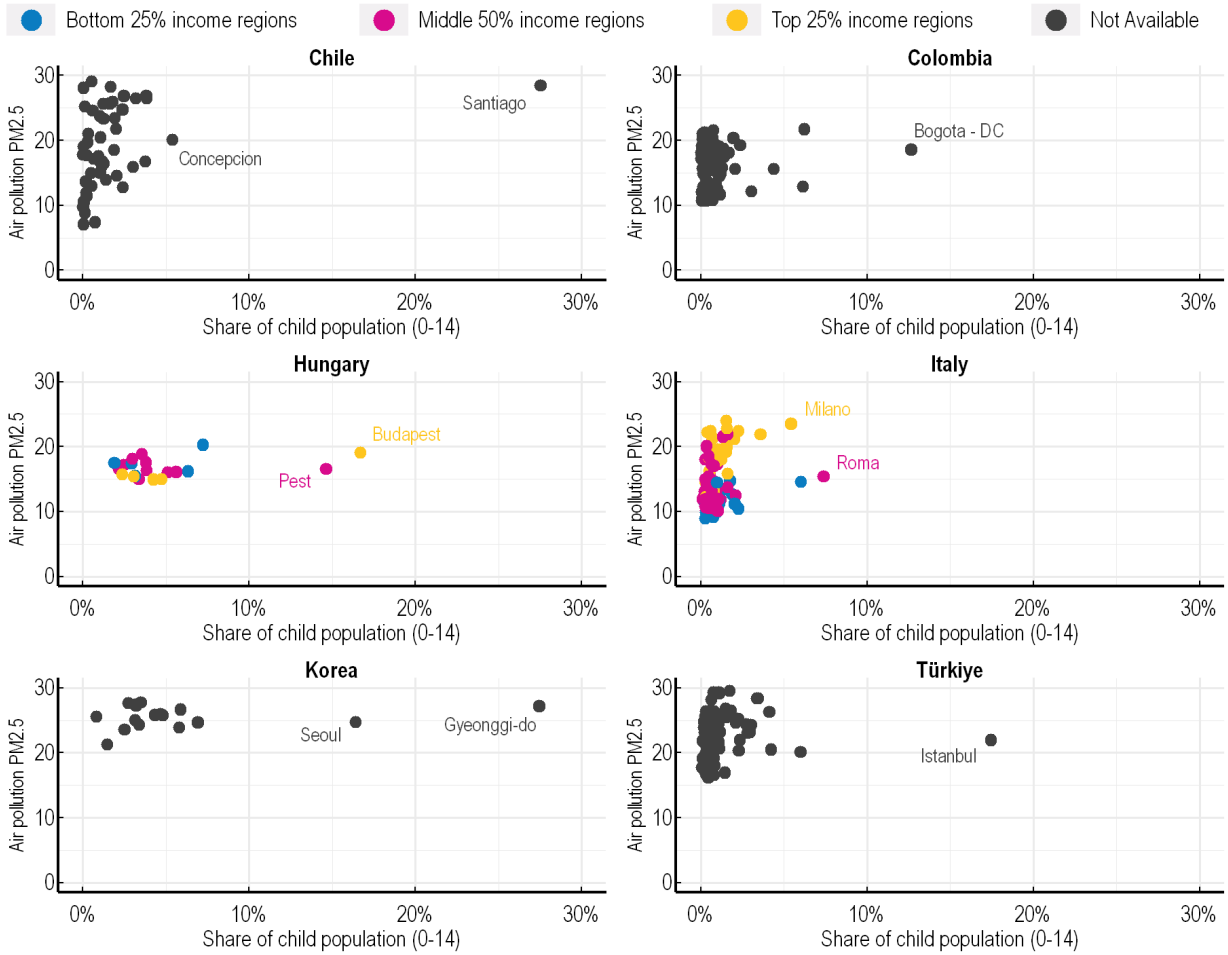
In all countries, the concentration of fine particles exceeds the World Health Organization's (WHO) recommended maximum density level of 5 micrometres per cubic meter in most regions. However, national situations vary significantly. In Australia, Canada and Sweden (Figure 3, Panel A) – as well as in the other countries of northern Europe (in Annex B), the exposure to fine particles and regional disparities are comparatively limited, even for the most child-densely populated regions. While regional pollution levels are also relatively low in Belgium, Switzerland and the United States compared to other OECD countries (Figure 3, Panel A), children growing up in certain regions are exposed to nearly twice (nearly four times in the case of the United States) as much air pollution on average as children residing in the least polluted regions within the same country. In Belgium, the two regions with the most children, Antwerp and Brussels, exhibit some of the highest levels of exposure to fine particles. In such a case, efforts made in areas that are densely populated by children and with higher levels of pollution can be particularly effective in reducing children's exposure to air pollution from a national policy perspective. In Switzerland, the region with the highest average concentration of fine particles, Ticino, is also one where the median income is relatively low. Regions where different sources of neighbourhood disadvantage compound for children may require adapted policy solutions that are tailored to the regional context and additional supports and guidance from national governments to implement these.

Figure 3. Regional disparities in children's exposure to air pollution

Panel A: Regional average fine particle pollution and share of child population under age 15 in countries with comparatively low air pollution, 2017



Panel B: Regional average fine particle pollution and share of child population under age 15 in countries with comparatively high air pollution, 2017



Note: The regional average concentration of fine particles is measured in milligrams per cubic meter. The share of children is estimated in each region as the percentage of children in that region of the total number of children in the country. Income regions are defined by their relative rank in mean household disposable income among all regions in the country. Income data for Australia are based on individual disposable income, for Switzerland on household gross income, and for Hungary and Italy on individual employment outcome. Income data for Canada and Italy are from 2016 and 2018, respectively.

Source: OECD calculations based on Königs et al. (forthcoming[183]) The geography of income inequalities in OECD countries and OECD (2024[178]) Regions and Cities databases.

Figure 3, Panel B displays countries with higher levels of fine particle pollution overall. Many of them show marked disparities across regions in the degree of exposure to fine particles, particularly Chile, Colombia, Türkiye and Italy, as well as Germany, Spain, Greece, and Poland (see Figure B.1 in Annex B). Furthermore, it is evident from Figure 3, Panel B that the capital regions of Chile (Santiago), Colombia (Bogota), and Türkiye (Istanbul) comprise the largest share of children and exhibit high levels of pollution. Particularly high pollution levels can also be observed in Korea, including in regions where a high proportion of children reside, such as Gyeonggi-do and Seoul. For these countries, significantly reducing children's exposure to air pollution may require both national policies to reduce the exposure to air pollution in all regions and region-specific efforts in areas with high shares of children and high levels of pollution. This information could be instrumental in evaluating whether children are disproportionately impacted by the risks associated with high pollution levels, thereby contributing to the Child Impact Assessment of policies (Dirwan and Thévenon, 2023[29]). Furthermore, it can help assess whether policies aimed at

enhancing children's well-being should prioritise stronger measures to reduce pollution in regions with a high concentration of children.

Once again, for countries, having access to these data is highly relevant from a policy perspective. It facilitates coordination across different levels of government by providing an indication of whether national policies are required to safeguard children from the risks of pollution, or if specific efforts should be focused on particular regions due to elevated pollution levels and/or a high concentration of children in regions with higher pollution levels. It is also evident that the policies to be implemented and the opportunities for cross-learning between countries will differ based on whether pollution exposure is concentrated in specific regions or not. Moreover, adding data on further neighbourhood characteristics (here income as an example) informs national policy makers of geographical areas where children likely face multiple forms of disadvantage and thus may have greater needs. National policies may wish to provide additional funds to these regions, especially when there are characterised by few economic resources and thus have limited means to finance supports for children themselves.

Last but not least, international data can be utilised to document the accessibility of basic services for children. The analysed data do not offer insights into the effective use of services but focus on their allocation. Therefore, they provide information about the potential coverage of children by documenting the supply available in each region. For instance, Figure 4 correlates data on physician density at a detailed regional level with the distribution of children across the national territory, while also distinguishing regions by income level. By cross-referencing this information at the regional level, it is possible to identify the extent of geographical disparities and potentially target actions toward the regions with the highest child populations and, potentially, the lowest number of physicians per inhabitant.

For example, in Australia, the physician density varies by a ratio of 1 to nearly 7 but the regions with the highest child population densities (e.g., Sydney and Melbourne) have some of the highest physician densities. Notably, the median income in these regions is also high. In Finland and Sweden, disparities in physician density are less marked, and the regions with higher shares of child populations are also among those with the highest physician densities. On the other hand, in Hungary, Budapest and Pest are two areas with a high proportion of children, but they exhibit significantly different physician densities: relatively low in Pest and high in Budapest, with the latter also being a high-income region. Similarly, in Latvia, Riga and Pieriga are two of the country's highest income regions with a high proportion of children, yet they differ significantly in terms of physician density. In the Slovak Republic, the regions of Kosice and Presov have the highest proportion of children, but the density of doctors is much lower than in the capital region of Bratislava. In these latter cases, it appears that some regions with a high proportion of children have a lower doctor supply compared to others. While this information alone may not be sufficient to determine whether the supply meets the needs, it does indicate that specific efforts may be necessary to increase the supply of physicians in certain regions.

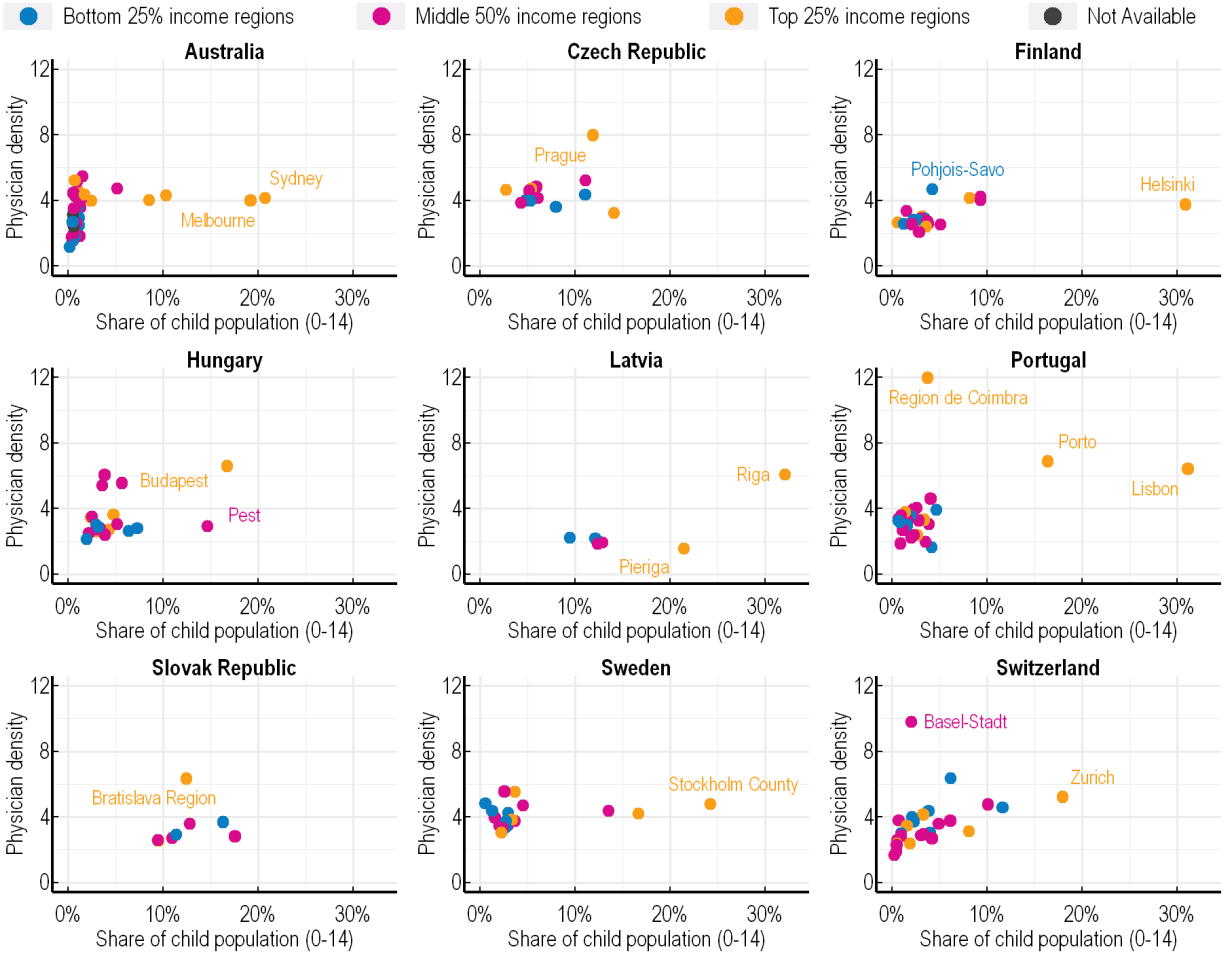
These data have some limitations for such an assessment. For instance, they do not consider the proximity of doctors to families' homes, which could provide more accurate estimates of the proportion of available doctors. They also do not account for the more frequent use and/or preference for children's specialists in certain countries (young children are preferably treated by paediatricians in some countries and regions). Additionally, the above analysis does not differentiate between urban and rural areas, which is a factor in explaining differences in medical density and could be further explored with the indicators of the OECD-wide monitoring framework laid out in section 3.2. Nonetheless, this initial and crude analysis already provides important indications of regional disparities and the ability of the doctor supply to match the geographical distribution of children across OECD countries.

More generally, the data presented in this section and the available indicators for municipalities and local areas may lack the granularity and nuance required to accurately represent the neighbourhood conditions that children and their families face in their daily lives. Nevertheless, they do provide valuable first insights

into the existence and nature of significant disparities at geographic levels relevant to policy making at the local, regional and national level.

Figure 4. Regional distribution of physicians and children

Regional physician density per 1 000 inhabitants and share of child population under age 15, 2017



Note: The density of physicians (including specialists) is calculated per region and measure for groups of 1 000 inhabitants. The share of children is estimated in each region as the percentage of children in that region in the total number of children in the country. Income regions are defined by their relative rank in mean household disposable income among all regions in the country. Income data for Australia are based on individual disposable income, for Switzerland on household gross income, and for Hungary on individual employment outcome.
Source: OECD calculations based on Königs et al. (forthcoming[183]) The geography of income inequalities in OECD countries and OECD (2024[178]) Regions and Cities databases.

4. Monitoring children's neighbourhood conditions: The way forward

The neighbourhood in which a child grows up affects their well-being during childhood and can have lasting impacts on their well-being, developmental opportunities and outcomes throughout their life. Today, inequalities between neighbourhoods are significant, causing children to face structural and intergenerational inequalities that are beyond their or their family's control. As outlined in the conceptual framework in section 2, various aspects of neighbourhoods matter, and a deficit in these areas can impact multiple domains of children's well-being and development. At the same time, many neighbourhood characteristics are interrelated and jointly influence the support and influence available to children and should thus be considered together in the design of policies intended to improve the quality of children's local environments. For instance, the lack of green spaces, playgrounds and leisure facilities can make the neighbourhood a challenging environment for children to engage in physical activity but also to have fun and to connect with their peers. Just like poor quality streets and public transport services restrict children's access to places and opportunities and may additionally impact their health if they cause increased levels of air pollution. Similarly, low coverage of child and family support services may not only limit the direct support but also mean that children forego other opportunities, for example to access better housing. Importantly, the neighbourhood aspects comprised in the conceptual framework are not only central to ensure children's healthy development and socialisation, but also for assisting parents in balancing work and family responsibilities and for their well-being, which is a key indirect channel through which neighbourhoods affect children and their families.

Public policies can mitigate these neighbourhood inequities by considering and addressing the mechanisms through which the local environment hinders or enhances children's opportunities. A solid information base involves data on the quality of the built environment, social relationships, and the availability and quality of basic services for children. Specifically, monitoring children's neighbourhood conditions across the OECD can inform policy making at local, regional, and national level in three primary areas:

- **Priority setting**. Designing relevant data collections that allow for cross-referencing and geospatial analysis at the local level can provide evidence on needs and challenges, aiding policymakers in setting priorities in terms of neighbourhood aspects and targeted locations when deciding on the provision of supports. For instance, the analysis in section 3.3 has revealed that children's exposure to air pollution varies significantly between and within countries, making it much more important for some regions to develop mitigating policies in this area than for others. By conducting correlational analysis between neighbourhood attributes and the distribution of children across national territories, one can pinpoint areas with significant needs or where a substantial proportion of children reside and prioritise these. At regional and national level, this monitoring information is valuable for determining where specific initiatives should be undertaken to enhance the well-being of children, pregnant women, and caregivers. It may also inform the allocation of budgetary resources based on the geographical distribution of those needs. A second form of priority setting that is facilitating by monitoring data comes from effectively managing tradeoffs. Information on

potentially opposing impacts of a policy intervention on several interlinked neighbourhood aspects can help policy makers consider children's needs comprehensively. For example, the decision to give up certain green spaces for new housing developments may be more easily made in areas where children and their families can access many other parks nearby and where they are exposed to low levels of air pollution rather than in areas that lack playgrounds and community spaces.

- **Enhancing integrated policy responses**. Monitoring systems that integrate geospatial data collections on various characteristics of children's neighbourhoods help identify locations where disadvantages accumulate across multiple areas. In these cases, policy interventions typically need to address several neighbourhood aspects at once due to the strong interlinkages between them. For example, the provision of high-quality playgrounds and community spaces will have a limited impact if children and caregivers don't feel their neighbourhood is safe. Equally, improved health care services may experience low uptake if the streets and public transport systems require long commutes to access them. Therefore, information on a wide range of neighbourhood aspects is essential for promoting the required cross-sector collaboration across policy areas that is needed to effectively address accumulations of neighbourhood disadvantages. These data further support effective coordination across national, regional, and local levels of action that underpins urban policies, neighbourhood infrastructure, and service provision.
- **Facilitating cross-country learning**. At an international scale, comparable data on neighbourhood conditions can assist in identifying countries facing similar challenges, or aid regions and cities compare themselves with relevant peers in other countries, such as among metropolises. For instance, variations in regional air pollution exposure and physician density highlight significant geographical disparities within and across countries, necessitating targeted interventions in specific regions in some countries and/or broader national initiatives in others. Moreover, these regions may vary in economic resources, influencing their capacity to implement local changes. Analysing these correlations enhances our understanding of localised disadvantages and suggests opportunities for mutual learning among countries, regions and municipalities sharing similar profiles. Another benefit of an OECD-wide monitoring of children's neighbourhood conditions stems from their potential use for impact evaluations. Evaluating policies along harmonised, cross-national metrics enhances the comparability of results across policy initiatives and thus helps to build a stronger evidence base on which to base future policies. Moreover, these data enable to explore the role different policy contexts when designing child-friendly neighbourhoods. To summarise, the data collected at the OECD level present an opportunity to more accurately pinpoint similarities and distinctions among countries across the neighbourhood dimensions outlined in this conceptual framework and to gain a deeper understanding of the policy mechanisms that facilitate the creation of stimulating and healthy environments for children and their families.

Moving forward, the next phase of this effort could involve consolidating available data within the proposed conceptual framework and developing tools to help users identify key challenges faced by children in certain regions, as well as potential clusters of disadvantages in specific areas. To help countries document neighborhood-related challenges to child well-being, one approach could be to develop an indicator set for children's local environments using the international data outlined in Table 5.

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Annex A. Indicators employed by other initiatives, by framework area

Table A.1. Indicators employed by other initiatives, by framework area

Framework area	Indicators employed by other initiatives
The natural and built environment and their spatial configuration	
Housing	**Housing quality** • Overcrowding – Keeping Track of New York City's Children; Child Development Atlas (Western Australia); Kids Count Data Center (USA); Children's Living Conditions in Metropolitan France (France); Ohio Children's Opportunity Index (USA) • % of children living in housing built before 1970 – Children's Living Conditions in Metropolitan France (France) • % of housing units by year of construction – Provinces in Figures (Belgium) **Housing structure** • Housing vacancy rate – Child Opportunity Index (USA); Ohio Children's Opportunity Index (USA); Provinces in Figures (Belgium) • % owner-occupied housing units – Child Opportunity Index (USA); Ohio Children's Opportunity Index (USA); Kids Count Data Center (USA) • Number of residential properties and residential units – Provinces in Figures (Belgium) • % of single-family dwellings by housing type, % of multi-family dwellings by size - Provinces in Figures (Belgium) **Housing Costs** • Children living in households with high housing cost burden – Kids Count Data Center (USA) • % of households putting over 50% of income towards mortgage – Ohio Children's Opportunity Index (USA) • Rent burden – Keeping Track of New York City's Children (USA); Ohio Children's Opportunity Index (USA); DC Kids Count (USA) • Relative housing costs – Children's Living Conditions in Metropolitan France (France) • Median price of sold houses and apartments – Provinces in Figures (Belgium) • Price-to-income ratio for residential houses – Provinces in Figures (Belgium) • Number of affordable and available housing units per 100 households with low, very low, and extremely low incomes – Upward Mobility Data Dashboard (USA) **Residential stability** • % of census tract population not living in same housing unit for over 1 year – Ohio Children's Opportunity Index (USA); Provinces in Figures (Belgium) • Rate of evictions among renters – Ohio Children's Opportunity Index (USA) • Homeless children – DC Kids Count (USA); Upward Mobility Data Dashboard (USA) • Families with children in homeless shelters rate (used up until 2018) – Keeping Track of New York City's Children (USA) • Students living in temporary housing – Keeping Track of New York City's Children (USA)

Framework area	Indicators employed by other initiatives
Streets and public transport	**Accessibility and quality of routes and public transport** • Transit Trips Index (access to public transportation based on the number of public transit trips taken annually by an average household earning 80% of the area median income) – Upward Mobility Data Dashboard (USA) • EPA walkability index – Child Opportunity Index (USA) • Length of recreational cycling routes (km) and number of nodes – Provinces in Figures (Belgium) **Modes and length of transport** • % of individuals owning a car and/or other means of transport – Provinces in Figures (Belgium) • % of dominant modes of transport (e.g., bicycle, public transport, car), total and for leisure – Provinces in Figures (Belgium) • % of workers commuting more than one hour one way – Child Opportunity Index (USA) **Cost of transportation** • Low Transportation Cost Index – Ohio Children's Opportunity Index (USA) • % of income spent on transportation – Upward Mobility Data Dashboard (USA) **Road traffic safety** • Traffic-related casualty rates in school zones of children under age 12 – Neighbourhoods Where Children Are Happy (Korea) • % of traffic accidents with injury involving a bicycle or a car – Provinces in Figures (Belgium) • Subjective road safety (% of inhabitants who feel safe cycling and for children commuting to schools alone) – Provinces in Figures (Belgium)
Green spaces	**Size and availability of green spaces** • Park area per child – Neighbourhoods Where Children Are Happy (Korea) • % of accessible green space – Provinces in Figures (Belgium) • % of people living in the vicinity of green spaces – Provinces in Figures (Belgium) **Land use and built-up spaces** • % impenetrable surface areas, such as rooftops, roads or parking lots – Child Opportunity Index (USA) • % of tract land area not covered by vegetation – Ohio Children's Opportunity Index (USA) • % of tract land area covered by open development (e.g., pavement/parking) – Ohio Children's Opportunity Index (USA) • % of open space and built-up surface by subcategories – Provinces in Figures (Belgium)
Playgrounds and community spaces	**Availability of playgrounds** • Number of children's play facilities – Neighbourhoods Where Children Are Happy (Korea)
Technical infrastructure	**Broadband access** • Occupied private dwellings/households/youth with internet connection – Child Development Atlas (Western Australia); Kids Count Data Center (USA); Upward Mobility Data Dashboard (USA)
Limited exposure to pollution	**Environmental hazards** • Hazardous waste dump sites (average number of Superfund sites within 2-mile radius) – Child Opportunity Index (USA) • Index of toxic chemicals released by industrial facilities – Child Opportunity Index (USA) **Air quality** • Mean estimated microparticle (PM2.5) concentration – Child Opportunity Index (USA); Ohio Children's Opportunity Index (USA) • Mean estimated 8-hour average ozone concentration – Child Opportunity Index (USA) • Environmental Health Hazard Index (air quality): carcinogenic, respiratory, and neurological hazards – Ohio Children's Opportunity Index (USA); Upward Mobility Data Dashboard (USA)
Climate resilience	**Extreme temperatures** • Summer days with maximum temperature above 90F – Child Opportunity Index (USA)
The social relationships	
Neighbourhood socio-economic composition and "economic connectedness":	**Poverty and deprivation** • Child poverty rate – Keeping Track of New York City's Children (USA); DC Kids Count (USA); Kids Count Data Center (USA); Ohio Children's Opportunity Index (USA); Kids Count Data Center (USA) • Poverty index (% of births in disadvantaged families) – Provinces in Figures (Belgium)

Framework area	Indicators employed by other initiatives
Employment and educational attainment	• Low-income households/families – Child Development Atlas (Western Australia); Children's Living Conditions in Metropolitan France (France); Child Opportunity Index (USA); DC Kids Count (USA); Kids Count Data Center (USA) • Children living in high poverty communities – DC Kids Count (USA); Kids Count Data Center (USA) • % of people experiencing poverty who live in high-poverty neighbourhoods – Upward Mobility Data Dashboard (USA) • % of students attending high-poverty schools, by race or ethnicity – Upward Mobility Data Dashboard (USA) • School poverty (% of students eligible for free or reduced-price lunches/Composite education poverty index based on community characteristics) – Child Opportunity Index (USA); Ohio Children's Opportunity Index (USA); Provinces in Figures (Belgium) • Neighbourhood economic security index (score of economically insecure families, 2006 census) – Child Well-being Dashboard Waterloo (Canada) • Supply of jobs in a community that pay enough to meet the local costs of a family's basic needs – Upward Mobility Data Dashboard (USA) • Children raised by single women living in poverty – DC Kids Count (USA) • Children raised by married couples living in poverty – DC Kids Count (USA) • % of households without a vehicle – Ohio Children's Opportunity Index; Kids Count Data Center (USA) • % of borrowers with at least one delinquent credit (installment loan, installment sale, financing rent, credit opening, mortgage credit)/ adults with debt in collections – Provinces in Figures (Belgium); Upward Mobility Data Dashboard (USA) • Number of electricity customers with unpaid electricity bills per 1 000 electricity customer – Provinces in Figures (Belgium) **Social services beneficiaries** • % of households receiving cash public assistance or Food Stamps/Supplemental Nutrition Assistance Program – Child Opportunity Index (USA); DC Kids Count (USA); Kids Count Data Center (USA) • Number of income-based financial support (integration income) recipients per 1000 inhabitants – Provinces in Figures (Belgium) • % of preferential beneficiaries (below the set income threshold) relative to the total number of health insurance beneficiaries aged 0 to 24 and 65 or older – Provinces in Figures (Belgium) • % of students in priority education zones ("zone d'education prioritaire") – Children's Living Conditions in Metropolitan France (France) • % of students receiving an education allowance – Provinces in Figures (Belgium) • Infant and toddler care subsidy enrollment – DC Kids Count (USA) • % and number of social housing – Provinces in Figures (Belgium) • % and number of households on social housing waiting list – Provinces in Figures (Belgium) **Income** • Median income of all households/of households with children – Child Opportunity Index (USA); DC Kids Count (USA); Keeping Track of New York City's Children (USA); Kids Count Data Center (USA); Children's Living Conditions in Metropolitan France (France); Provinces in Figures (Belgium) • Household income at 20th, 50th, and 80th percentiles – Upward Mobility Data Dashboard (USA) • Prosperity Index (average fiscal income per capita of administrative unit compared to average national income per inhabitant) – Provinces in Figures (Belgium) **Economic connectedness** • Economic connectedness index (share of high-socioeconomic-status friends among low-socioeconomic-status individuals) – Upward Mobility Data Dashboard (USA) • Ratio of the share of total home values owned by a racial or ethnic group to the share of households of the same group – Upward Mobility Data Dashboard (USA) **Employment** • Labor Market Engagement Index (employment level labour force participation, higher education) – Ohio Children's Opportunity Index (USA) • Activity rate in 15- to 64-year-olds – Provinces in Figures (Belgium)

Framework area	Indicators employed by other initiatives
	• % of adults aged 25-54/20-64 who are employed – Child Opportunity Index (USA); Upward Mobility Data Dashboard (USA); Provinces in Figures (Belgium) • % of children whose parents have high occupational status – Children's Living Conditions in Metropolitan France (France) • % of individuals aged 16 and over employed in professional occupations – Child Opportunity Index (USA) • Number of working 15- to 64-year-olds by status (salaried or self-employed) and sector (primary, secondary, tertiary, quaternary) – Provinces in Figures (Belgium) • % and number of 15- to 64-year-olds by labour market status (unemployed, jobseeker, inactive) – Provinces in Figures (Belgium) • Parental employment instability – Keeping Track of New York City's Children; Kids Count Data Center (USA) • Unemployment rate (of parents/general) – Child Development Atlas (Western Australia); DC Kids Count; Kids Count Data Center (USA); Provinces in Figures (Belgium) • Number of unemployed jobseekers and number of unemployed jobseekers by duration of unemployment, by age, and by level of education – Provinces in Figures (Belgium) • % of children whose parents are unemployed – Children's Living Conditions in Metropolitan France (France) **Educational attainment** • Educational attainment of the working age population – Ohio Children's Opportunity Index (USA), Keeping Track of New York City's Children (USA); Kids Count Data Center (USA) • % of students with a low-educated mother – Provinces in Figures (Belgium)
Neighbourhood socio-economic composition and "economic connectedness": Demographic factors	**Family characteristics** • % of children and youth by 2-5-year age groups – Provinces in Figures (Belgium) • % and number of couples and single parents with at least one minor child – Provinces in Figures (Belgium) • % of children living in/Percent of family households that are single-parent headed – Children's Living Conditions in Metropolitan France (France); Child Opportunity Index (USA); Keeping Track of New York City's Children (USA); Child Development Atlas (Western Australia); Kids Count Data Center (USA) • No paternal involvement: Proportion of births that include no father's first/middle/last name – Ohio Children's Opportunity Index (USA) • % of 11- to 16-year-olds who have lost a parent – Dashboard on Children's Prosperity (Iceland) • One-parent families – Child Development Atlas (Western Australia) • Children living in large families – Children's Living Conditions in Metropolitan France (France) • Children entering/in foster care – DC Kids Count (USA); Kids Count Data Center (USA); Neighbourhoods Where Children Are Happy (Korea) **Diversity** • % of non-Belgians/non-Belgian origin in the population and in youths aged 0 to 24 – Provinces in Figures (Belgium) • % of students with a home language other than Dutch – Provinces in Figures (Belgium) • % of 11- to 16-year-olds who have a parent of foreign origin, who speak a language other than Icelandic at home, of foreign origin who have a friend who speaks Icelandic at home – Dashboard on Children's Prosperity (Iceland) • Index of neighbourhood racial diversity – Upward Mobility Data Dashboard (USA) • % of children, changes, and child migration rates – Children's Living Conditions in Metropolitan France (France) • % of refugee children receiving international protection – Dashboard on Children's Prosperity (Iceland) • % of elementary students with English as a Second Language needs – Child Well-being Dashboard Waterloo (Canada); Kids Count Data Center (USA); Child Development Atlas (Western Australia)
Social connectivity and community participation	**Social connectivity and loneliness** • % of 9- to 11- and 11- to 16-year-olds who have a good friend – Dashboard on Children's Prosperity (Iceland) • % of 9- to 11- and 11- to 16-year-olds who often feel lonely – Dashboard on Children's Prosperity (Iceland) **Community participation** • Youth with an adult mentor in the community who provides advice or guidance – Kids Count Data Center (USA) • OST (Out-of-School Time) program enrollment – DC Kids Count (USA) • Youth who participate in community service or volunteer work – Kids Count Data Center (USA)

Framework area	Indicators employed by other initiatives
	• % of registered members of sports clubs among children and youth below 20 years – Children's Living Conditions in Metropolitan France (France) • Number of membership associations (e.g., civic, sports, religious, political and business organisations) per 10,000 people – Upward Mobility Data Dashboard (USA) • % of 9- to 11- and 11- to 16-year-olds who take an art course, participate in social activities, go to a social centre, participate in social activities, and play sports – Dashboard on Children's Prosperity (Iceland) • % of 11- to 16-year-olds who are active participants in school activities – Dashboard on Children's Prosperity (Iceland) **Voter turnout** • Registered to vote – DC Kids Count (USA) • % of eligible voters – DC Kids Count (USA) • % of the voting-age population who turns out to vote – Upward Mobility Data Dashboard (USA) • Young adults who voted in the last presidential/midterm election – Kids Count Data Center (USA)
Peer outcomes and social safety	**Educational attainment, enrolment, performance and attitudes** • % of 9- to 11- and 11- to 16-year-olds who like school, who think it is important to make an effort in education – Dashboard on Children's Prosperity (Iceland) • % of students/primary school students having repeated a year/at least a year of school – Children's Living Conditions in Metropolitan France (France); Provinces in Figures (Belgium) • % of secondary school pupils having repeated at least two years of school – Provinces in Figures (Belgium) • % of children (age 5-17) not enrolled in school – Ohio Children's Opportunity Index (USA); Kids Count Data Center (USA) • % of youth who have dropped out – Ohio Children's Opportunity Index (USA); Kids Count Data Center (USA); Neighbourhoods Where Children Are Happy (Korea); Provinces in Figures (Belgium) • % of high school freshman dropouts – Dashboard on Children's Prosperity (Iceland) • % of secondary school students by track and in vocational education – Provinces in Figures (Belgium) • Test scores (school readiness/reading/maths proficiency) – Child Opportunity Index (USA); Ohio Children's Opportunity Index (USA); Keeping Track of New York City's Children (USA); DC Kids Count (USA); Child Well-being Dashboard Waterloo (Canada); Kids Count Data Center (USA); Neighbourhoods Where Children Are Happy (Korea) • AP[8]/IB[9] Participation and Passing AP/IB Exams – DC Kids Count (USA); Child Opportunity Index (USA) • High school graduation rate (on time) – Ohio Children's Opportunity Index (USA); Child Opportunity Index (USA); Keeping Track of New York City's Children (USA); DC Kids Count (USA); Kids Count Data Center (USA); Upward Mobility Data Dashboard (USA) • 20- to 24-year-olds with Year 12 or equivalent highest year of school completed – Child Development Atlas (Western Australia) • Post-secondary enrolment rates – DC Kids Count; Kids Count Data Center (USA) • Higher education enrolment in nearby institutions – Child Opportunity Index (USA) **Youth unemployment** • Youth unemployment – Keeping Track of New York City's Children (USA); Kids Count Data Center (USA); Provinces in Figures (Belgium) • Teen idleness – Keeping Track of New York City's Children (USA); Kids Count Data Center (USA) • % of 15- to17-year-olds/16- to 19-year-olds not in education, employment or training (NEET) – Children's Living Conditions in Metropolitan France (France); Dashboard on Children's Prosperity (Iceland) **At-risk behaviour**

[8] Advanced Placement (AP) exams are standardized tests in the United States administered by the College Board. They are associated with AP courses, which are college-level classes offered in high schools. AP exams allow students to demonstrate their mastery of advanced coursework, and strong scores can sometimes earn them college credit or advanced placement in college courses;

[9] International Baccalaureate exams are part of the IB Diploma Programme, a globally recognized educational program designed to prepare students for university.

Framework area	Indicators employed by other initiatives
	• Suspensions (in-school and out-of-school) – DC Kids Count (USA); Kids Count Data Center (USA) • Expulsions – DC Kids Count (USA); Kids Count Data Center (USA)Teens who abused alcohol or drugs in the past year – Kids Count Data Center (USA) • % of 14- to 16-year-olds who consumed cannabis recently, who used nicotine patches recently – Dashboard on Children's Prosperity (Iceland) • % of youths who start having sex before the age of 16 – Dashboard on Children's Prosperity (Iceland) • % of 14- to 16-year-olds who use a condom during intercourse – Dashboard on Children's Prosperity (Iceland) • % of 11- to 16-year-olds who have viewed porn recently, have been in a fight recently, have used cigarettes or electronic cigarettes recently, drunk alcohol recently – Dashboard on Children's Prosperity (Iceland) **Teen Pregnancies** • Teen birth rate – Keeping Track of New York City's Children (USA); Child Development Atlas (Western Australia); DC Kids Count (USA); Kids Count Data Center (USA); Children's Living Conditions in Metropolitan France (France) • Children Born to Mothers Aged 20-24 years – Child Development Atlas (Western Australia) • % of 15- to 17- year-old girls who have had an abortion – Children's Living Conditions in Metropolitan France (France) **Juvenile offences** • Number of offences by selected juvenile offence type and age group – Child Development Atlas (Western Australia) • Number of distinct juvenile offenders by selected offence type and age group– Child Development Atlas (Western Australia); Kids Count Data Center (USA) • Juvenile arrests per 100,000 juveniles – Dashboard on Children's Prosperity (Iceland) • Number of children reported to child protection due to at-risk behaviour – Dashboard on Children's Prosperity (Iceland) • School arrests – DC Kids Count (USA) • Police use of force incidents involving minors – DC Kids Count (USA) • Police stops of minors – DC Kids Count (USA) **Social safety** • % of 12- to 16-year-olds who feel safe in their neighbourhood, who feel safe at home – Dashboard on Children's Prosperity (Iceland) • % of 9- to 11- and 11- to 16-year-olds who have been bullied recently – Dashboard on Children's Prosperity (Iceland) • Children who live in unsafe communities – Kids Count Data Center (USA) • Child crime victimisation rate – Neighbourhoods Where Children Are Happy (Korea) • Per person rates of burglary, larceny-theft, and motor-vehicle theft incidents/drug crime incidents/drunkenness and driving under the influence incidents/homicide, assault and sexual assault incidents, robbery incidents – Ohio Children's Opportunity Index (USA) • Violent Felony Rate – Keeping Track of New York City's Children (USA) • Death caused by injury, numbers of reported property crimes per 100,000 people – Upward Mobility Data Dashboard (USA)
Basic services for children	
Health care services	**Parental health and pregnancy and birth outcomes** • Proportion of parents enrolled in Medicaid with a primary severe mental illness diagnosis – Ohio Children's Opportunity Index (USA) • Proportion of families with a parent served by Medicaid who has a substance use disorder diagnosis – Ohio Children's Opportunity Index (USA) • Births to mothers with a mental illness diagnosis - Child Development Atlas (Western Australia) • Proportion of infants born to Medicaid-enrolled women with severe maternal morbidity – Ohio Children's Opportunity Index (USA) • Mothers who smoked tobacco at any time during pregnancy – Child Development Atlas (Western Australia); Kids Count Data Center (USA) • Prenatal care in 1st trimester – DC Kids Count (USA) • Parental deaths due to pregnancy/childbirth – DC Kids Count (USA)

Framework area	Indicators employed by other initiatives
	• Infant mortality rate – Ohio Children's Opportunity Index (USA); Keeping Track of New York City's Children (USA); Child Development Atlas (Western Australia); DC Kids Count (USA); Kids Count Data Center (USA) • Low birth weight babies – Keeping Track of New York City's Children (USA); Child Development Atlas (Western Australia); Child Well-being Dashboard Waterloo (Canada); Kids Count Data Center (USA); Upward Mobility Data Dashboard (USA); Children's Living Conditions in Metropolitan France (France) • Proportion of infants born preterm – Ohio Children's Opportunity Index (USA); Child Development Atlas (Western Australia); Kids Count Data Center (USA) **Early development outcomes** • Children developmentally vulnerable or at risk on the Australian Early Development Census domains - Child Development Atlas (Western Australia) • Children developmentally vulnerable or at risk on 1 or 2 or more of the Australian Early Development Census domains - Child Development Atlas (Western Australia) • Children developmentally 'on track' on the Australian Early Development Census Domains/ Healthy babies, healthy children (HBHC) screen – Child Development Atlas (Western Australia); Child Well-being Dashboard Waterloo (Canada) • Proportion of Medicaid infants, children and youth who show certain health or developmental problems or treatments – Ohio Children's Opportunity Index (USA); Kids Count Data Center (USA) **Child health and behavioural outcomes** • Obesity rates among children – Neighbourhoods Where Children Are Happy (Korea) • % of 11- to 16-year-olds who do the recommended physical activity – Dashboard on Children's Prosperity (Iceland) • Proportion of Medicaid infants and children who meet continuous enrollment criteria for medical, well-child visits – Ohio Children's Opportunity Index (USA) • Children/young people with a disability - Child Development Atlas (Western Australia) • Children/young people with chronic conditions - Child Development Atlas (Western Australia) • Child mortality - Child Development Atlas (Western Australia); Kids Count Data Center (USA) • Suicide rate - Child Development Atlas (Western Australia) • Children and young people with a mental illness diagnosis - Child Development Atlas (Western Australia); Kids Count Data Center (USA) • Children/young people with a substance abuse disorder - Child Development Atlas (Western Australia) • Children/young people with alcohol and other drug related injuries - Child Development Atlas (Western Australia) **Access to health care services** • Number of people per primary care physician – Upward Mobility Data Dashboard (USA) • Number of pediatricians per 100 000 inhabitants – Children's Living Conditions in Metropolitan France (France) • Medicare benefits per 100 people aged 0-24 years - Child Development Atlas (Western Australia) • % of all Medicaid behavioral health/primary care visits for children that meet access criteria – Ohio Children's Opportunity Index (USA) • Hospitalisations for children and young people - Child Development Atlas (Western Australia) • Emergency Department Presentations that were Mental Health Related in Children and Young People - Child Development Atlas (Western Australia); Children's Living Conditions in Metropolitan France (France) • Emergency department presentations for deliberate self-harm in children and young people - Child Development Atlas (Western Australia); Children's Living Conditions in Metropolitan France (France) • Rate of emergency department presentations in children/young people - Child Development Atlas (Western Australia); Children's Living Conditions in Metropolitan France (France) • % of children and young people who attended a GP in a given year - Child Development Atlas (Western Australia); Children's Living Conditions in Metropolitan France (France) • Number of GP attendances by patients per 100 people aged 0-24 years/per inhabitant - Child Development Atlas (Western Australia); Children's Living Conditions in Metropolitan France (France)% of children under active supervision by a dentist – Dashboard on Children's Prosperity (Iceland)

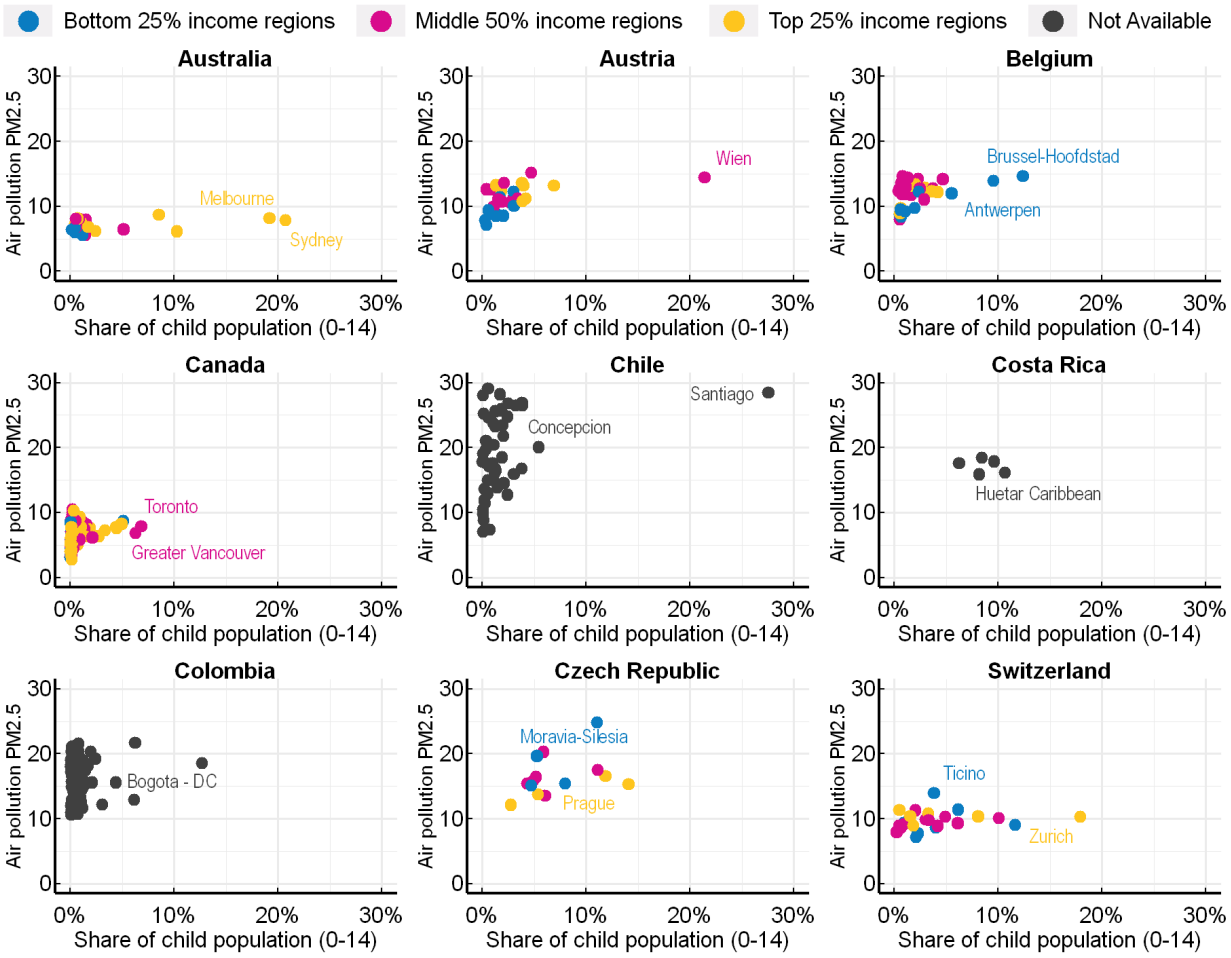
Framework area	Indicators employed by other initiatives
	• % of children who attended a pediatrician over the course of the year – Children's Living Conditions in Metropolitan France (France) • % of children who attended an ophthalmologist over the course of the year – Children's Living Conditions in Metropolitan France (France)% of children participating in mental health groups – Neighbourhoods Where Children Are Happy (Korea) • % of children who attended a psychiatrist over the course of the year – Children's Living Conditions in Metropolitan France (France) • Preventative care visit in the last year, by health insurance type (public, private) – DC Kids Count (USA) • Children who have received preventive dental care in the past year – Kids Count Data Center (USA); Children's Living Conditions in Metropolitan France (France) • Children whose teeth are in excellent or very good condition – Kids Count Data Center (USA) • % of children fully immunised by selected age group – Child Development Atlas (Western Australia); DC Kids Count; Kids Count Data Center (USA); Dashboard on Children's Prosperity (Iceland) • % of children prescribed psychoactive drugs – Children's Living Conditions in Metropolitan France (France)
Education and care services	**Enrollment and access to education and care services** • Number of ECEC centres – Child Opportunity Index (USA); number of certified, high-quality ECEC centres – Child Opportunity Index (USA); number of formal ECEC centres within a 15-minute radius – Children's Living Conditions in Metropolitan France (France); capacity of centre- and home-based ECEC (spaces vs children in the area) - Child Well-being Dashboard Waterloo (Canada); Provinces in Figures (Belgium) • ECEC enrollment rates – Child Opportunity Index (USA); Keeping Track of New York City's Children (USA); Child Development Atlas (Western Australia); DC Kids Count (USA); Kids Count Data Center (USA); Neighbourhoods Where Children Are Happy (Korea); Upward Mobility Data Dashboard (USA) • Infants & Toddlers for Every Licensed Childcare Slot – DC Kids Count (USA) • % of places of afterschool care for children aged 3 to 11 – Provinces in Figures (Belgium) • Childcare places for infants and young children with income rate (considering parental income) – Provinces in Figures (Belgium) • % of childcare places for infants and young children by type of institutional arrangement – Provinces in Figures (Belgium) • Standardized distance to nearest school – Ohio Children's Opportunity Index (USA); Children's Living Conditions in Metropolitan France (France) **School performance** • School performance index – Ohio Children's Opportunity Index (USA) • School's value added – Ohio Children's Opportunity Index (USA) • Average per year improvement among public school students between the 3rd and 8th grades (USA) in nationally standardised state assessments for English Language Arts – Upward Mobility Data Dashboard (USA) **School environments** • Per-pupil educational expenditures – Kids Count Data Center (USA) • % of pre-school teachers in kindergarten staff – Dashboard on Children's Prosperity (Iceland) • Number of nursery school staff per child – Dashboard on Children's Prosperity (Iceland) • Student-to-staff ratio – Children's Living Conditions in Metropolitan France (France) • Student-counselor ratio – DC Kids Count (USA) • Student-security officer ratio – DC Kids Count (USA) • Teacher experience – Child Opportunity Index (USA); DC Kids Count (USA) • Average annual salary of early educators at childcare providers – DC Kids Count (USA) • % of 9- to 11- and 11- to 16-year-olds who can turn to an adult at school – Dashboard on Children's Prosperity (Iceland) • % and number of inflow and outflow of primary and secondary school students – Provinces in Figures (Belgium) • % of special needs students in pre-primary, primary and secondary education – Provinces in Figures (Belgium) • % of 9- to 11- and 11- to 16-year-olds who often experience disruptive noise in the classroom – Dashboard on Children's Prosperity (Iceland)

Framework area	Indicators employed by other initiatives
	• % of 11- to 16-year-olds who feel unsafe in school toilets – Dashboard on Children's Prosperity (Iceland)
Child and family support services	**Availability of child and family support services** • Children below age 3 whose parents did not receive a home visit – DC Kids Count (USA) • Children-to-counsellor ratios at local child protection agencies – Neighbourhoods Where Children Are Happy (Korea) **Violence and abuse** • Emergency Department presentations (all causes) – Child Development Atlas (Western Australia) • Calls children made to a designated helpline – Child Development Atlas (Western Australia); DC Kids Count (USA) • Children who are subject to at least one substantiated or indicated maltreatment report – DC Kids Count (USA) • Rates of reoccurring child abuse – Neighbourhoods Where Children Are Happy (Korea) • Number of children who were reported to child protection, reported to child protection due to violence – Dashboard on Children's Prosperity (Iceland) • % of 13- to 16-year-olds who have suffered sexual violence, who have experienced domestic violence, have experienced digital sexual violence, or told about sexual or domestic violence that they have experienced – Dashboard on Children's Prosperity (Iceland)

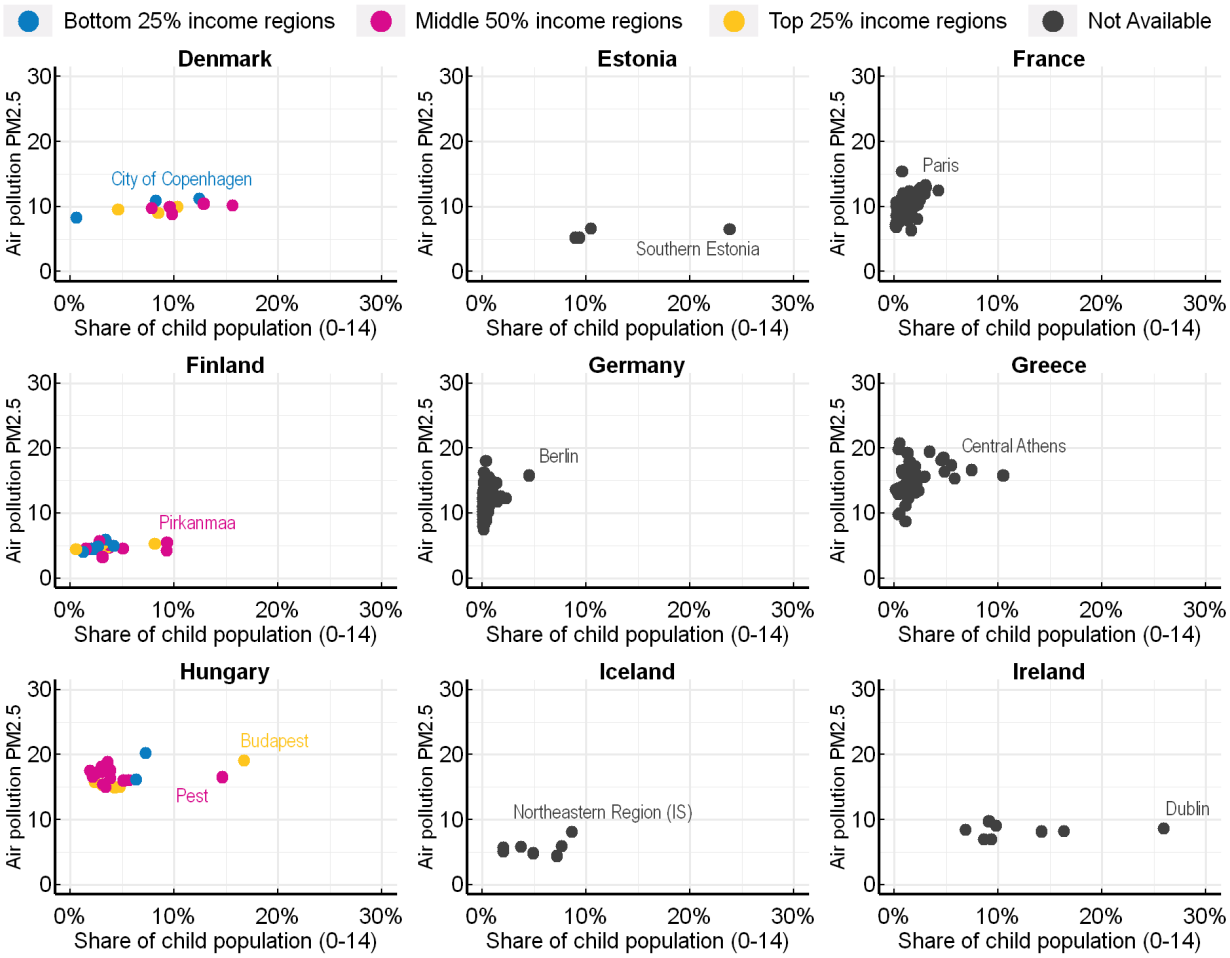
Annex B. Regional disparities in children's environments

Figure B.1. Regional disparities in children's exposure to air pollution

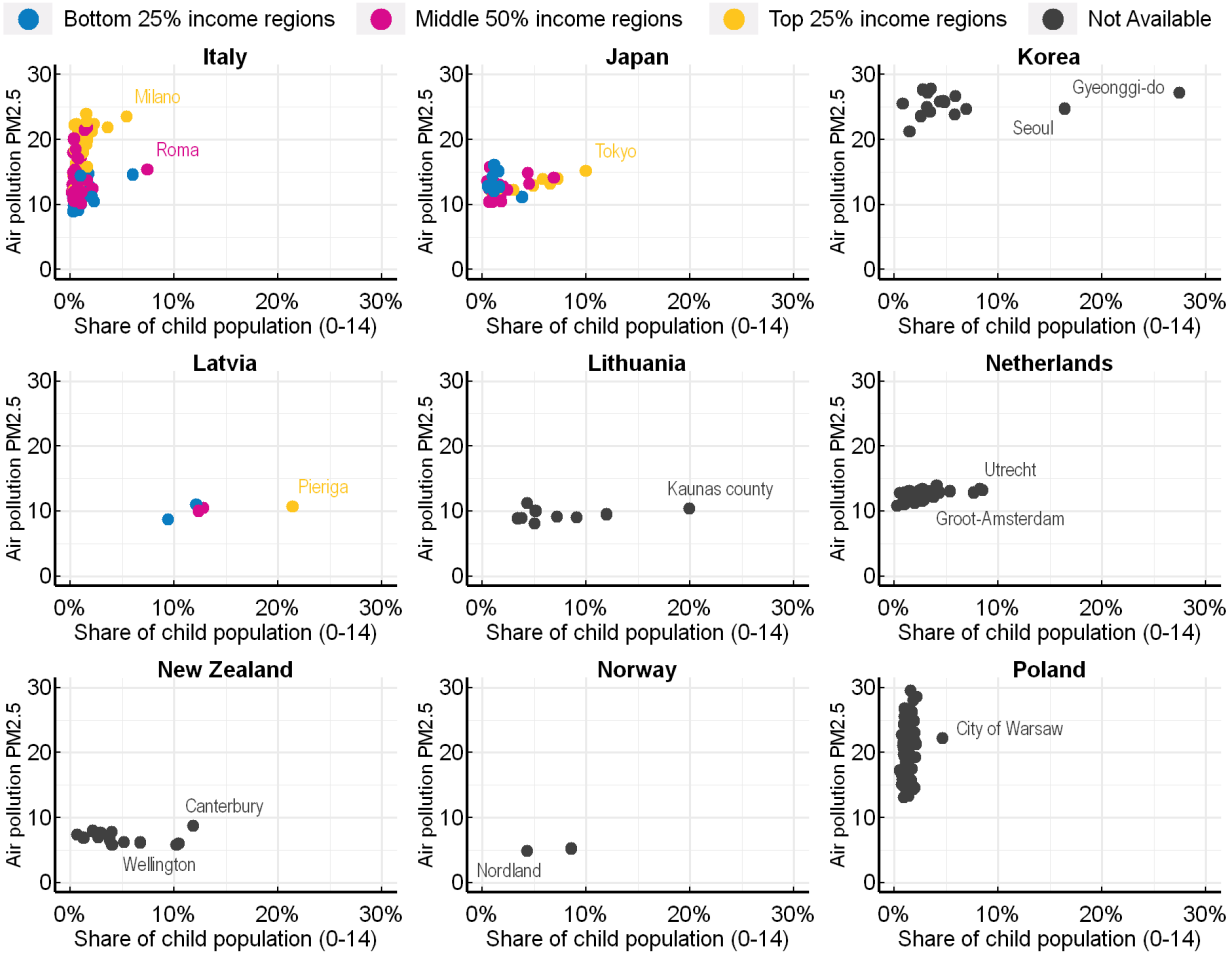
Panel A: Average regional fine particles pollution and share of children under age 15



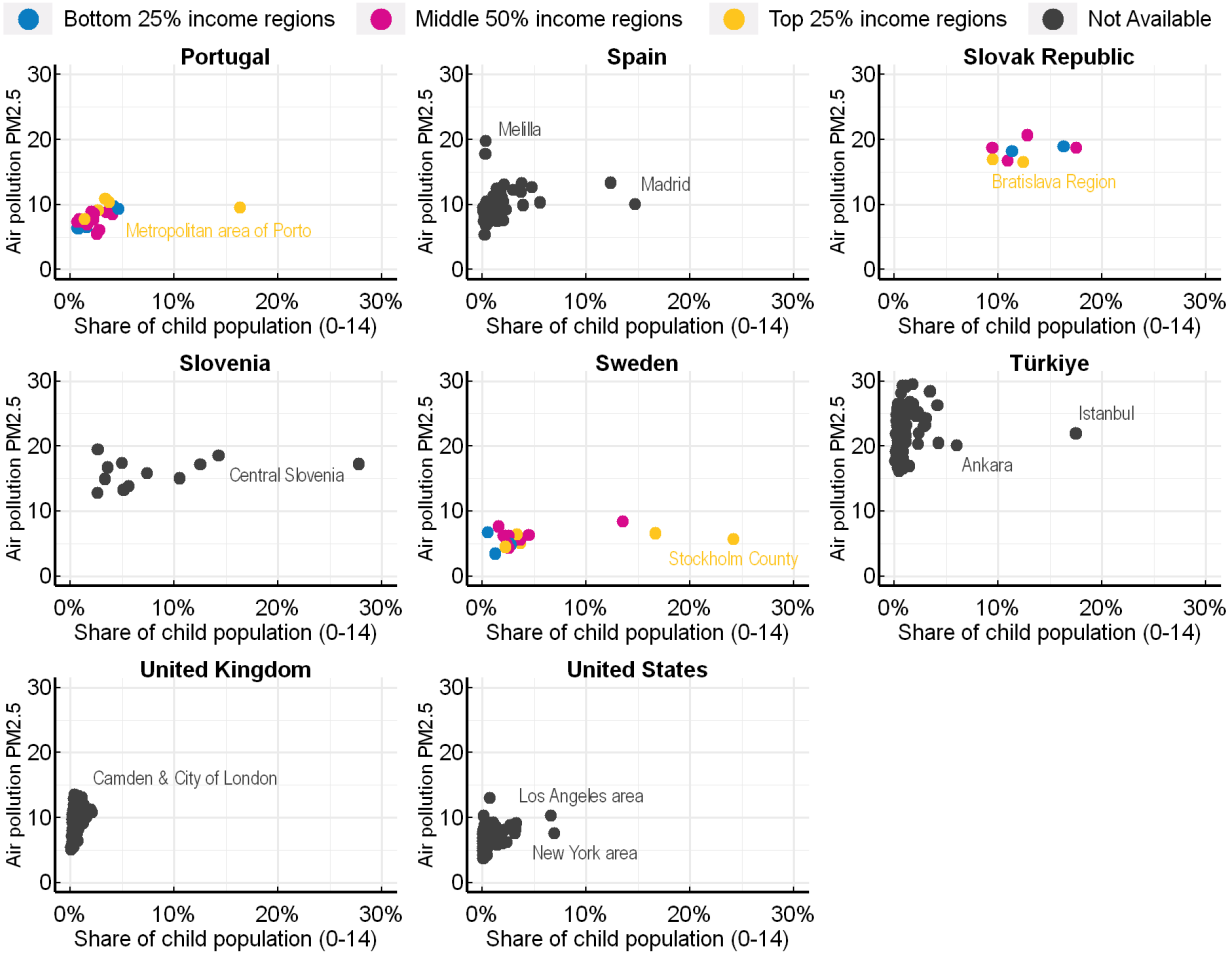
Panel B: Average regional fine particles pollution and share of children under age 15



Panel C: Average regional fine particles pollution and share of children under age 15



Panel D: Average regional fine particles pollution and share of children under age 15

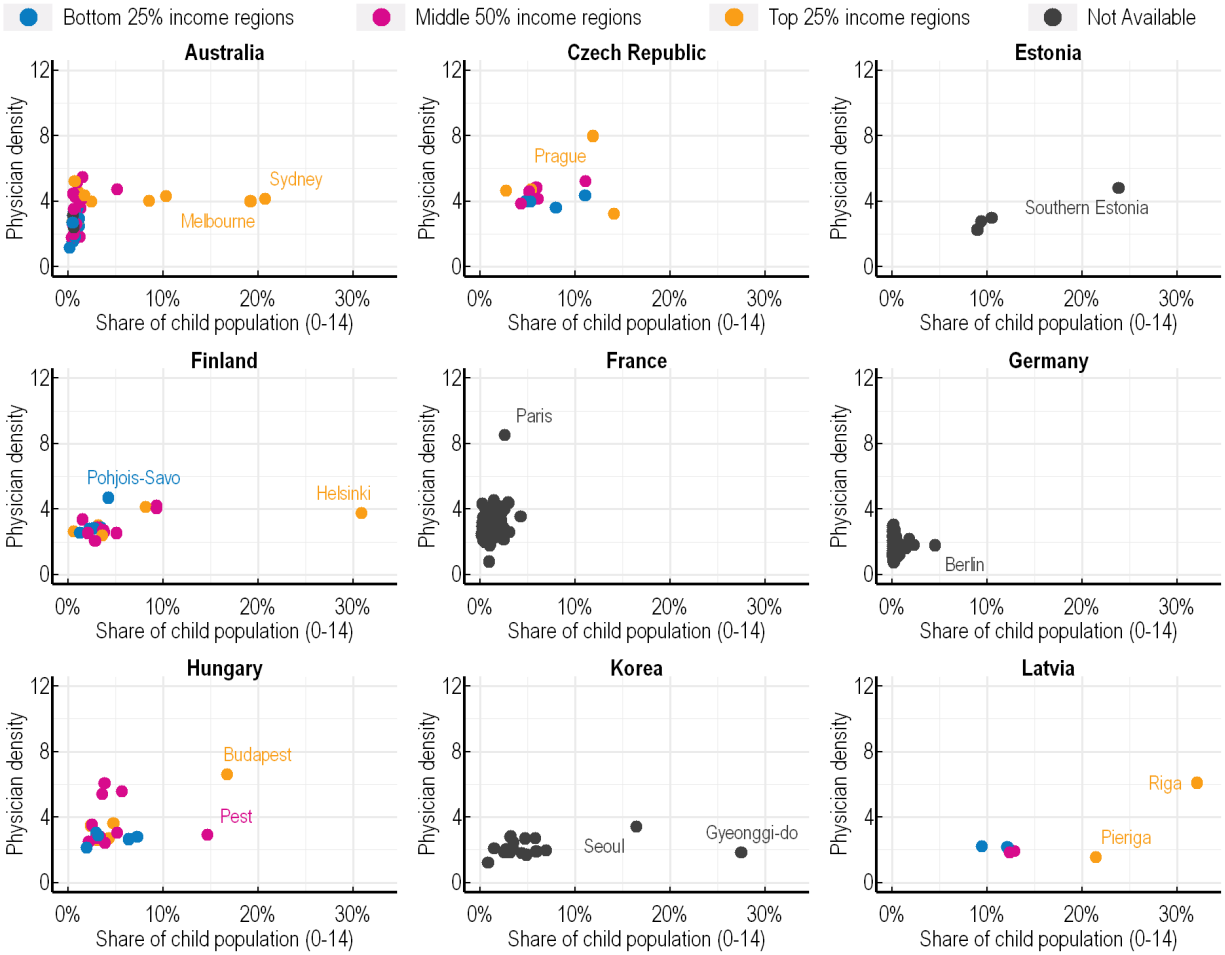


Note: The regional average concentration of fine particles is measured in milligrams per cubic meter. The share of children is estimated in each region as the percentage of children in that region in the total number of children in the country. Income regions are defined by their relative rank in mean household disposable income among all regions in the country. Income data for Austria and Australia are based on individual disposable income, for Switzerland on household gross income, and for Hungary and Italy on individual employment outcome. Income data for Canada, Italy and Japan are from 2016, 2018 and 2019, respectively.

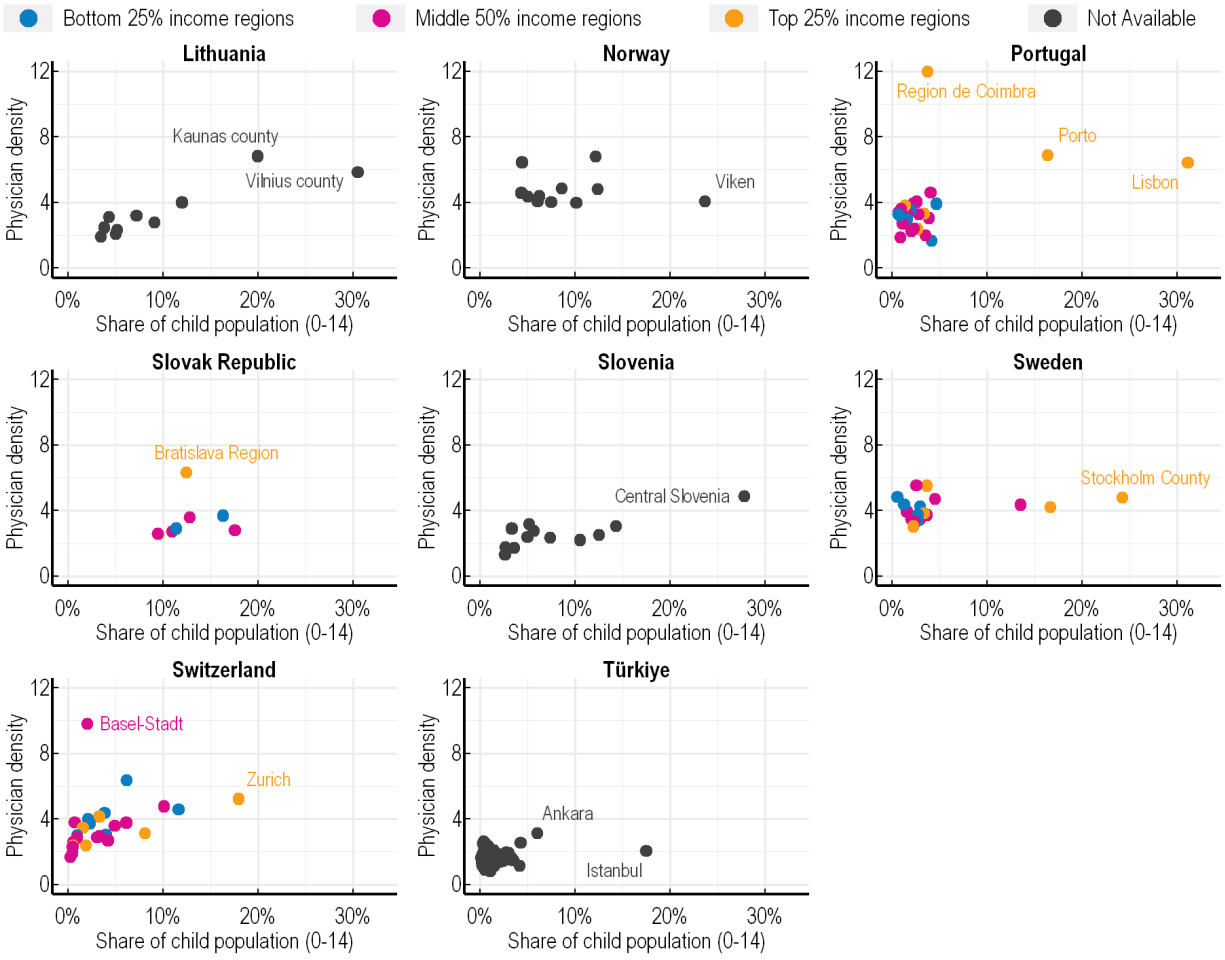
Source: Own calculations based on Königs et al. (forthcoming[183]), "The geography of income inequalities in OECD countries" and OECD (2024[178]), *Regions and Cities databases*.

Figure B.2. Regional disparities in children's access to physicians

Panel A: Regional physician density per 1 000 inhabitants and share of children under age 15



Panel B: Regional physician density per 1 000 inhabitants and share of children under age 15



Note: The density of physicians is calculated per region and measured per 1 000 inhabitants. The share of children is estimated in each region as the percentage of children in that region in the total number of children in the country. Income regions are defined by their relative rank in mean household disposable income among all regions in the country. Income data for Australia are based on individual disposable income, for Switzerland on household gross income, and for Hungary on individual employment outcome.
Source: Own calculations based on Königs et al. (forthcoming[183]) The geography of income inequalities in OECD countries and OECD (2024[178]) Regions and Cities databases.