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URBAN PLANNING STRATEGIES FOR PROMOTING CHILD-FRIENDLY CITIES

AN ANALYSIS OF THE 10-MINUTE CITY CONCEPT IN UTRECHT

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Preface

Dear reader,

In front of you lies my thesis for the master's program Society, Sustainability & Planning of the Faculty of Spatial Sciences at the University of Groningen. This thesis forms the end of my student time. A time in which I got to explore many interesting topics within the fields of human geography and spatial planning and a time in which I have grown as an academic researcher. And, a time in which I have personally grown during my board year and several committees and a time in which I have met so many great people.

Then I would like to grab this opportunity to thank a few people. First, Mariëlle, Sabine, and Roos for the fun times during our master's, study sessions, and group projects. Then, dr. Femke Niekerk for the support in setting up the research proposal for my thesis. Thirdly, dr. Ward Rauws for the great support and useful feedback during the process of writing my thesis. Lastly, I would like to thank the respondents of this research for their time to participate in the interviews.

Enjoy reading.

Yildiz Esmée Heeringa
June 29th, 2023

Abstract

In 2050, 70% of the world's children are expected to live in cities. However, many cities are designed without children's needs and desires considered, emphasizing the importance of creating child-friendly cities. One planning strategy that can potentially increase a city's child-friendliness is the 10-Minute City, a strategy embraced by the city of Utrecht. Hence, by combining a literature review, document and media analysis, field visits, and semi-structured interviews, this research investigates Utrecht's current performances in child-friendliness and the potential effects of the 10-Minute City on children in Utrecht. The literature shows that children's independent mobility and environmental affordances contribute to developing a child-friendly city. The 10-Minute City encompasses two main elements that can boost this development: increasing access to amenities and promoting active mobility. Respondents assume that Utrecht has sufficient amenities for children, with especially mixed-function playgrounds being successful. However, a weakness is the removal of playgrounds or play equipment due to complaints of concerned parents or nuisance complaints. To address these issues, the 10-Minute City can support the enhancement of mixed-function playgrounds, open schoolyards after school hours, raise awareness of amenities, and create additional amenities for youth to prevent them from hanging around at playgrounds. However, this may intensify the pressure on public spaces, potentially reducing green areas. Furthermore, active mobility can theoretically increase road safety and foster social interactions between residents, possibly leading to more trust and tolerance, and reducing nuisance complaints. Nevertheless, experts caution that promoting active mobility can lead to chaotic and unsafe travel situations for children. Further research could include children's experiences and neighborhood-specific strengths and weaknesses regarding child-friendliness.

Keywords: 10-Minute City, Active Mobility, Accessibility of Amenities, Child-Friendly City, Children's Independent Mobility, Environmental Affordances

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CFC = Child-Friendly City
CFCI = Child-Friendly Cities Initiative
CIM = Children's Independent Mobility
RSU 2040 = Ruimtelijke Strategie Utrecht 2040

1. Introduction

1.1 Background

With an expected number of 70% world's children living in cities by 2050, making cities child-friendly should be high on the agenda (UNICEF, 2023). However, many urban planners and policymakers do not consider children's needs and desires when developing urban policies (ITDP, 2022). Over the years, neighborhoods became car-centric, decreasing children's freedoms even more, resulting in many children spending their time indoors (Kyttä et al., 2018). Contemporary cities include danger in traffic and air and noise pollution, which leads to a decrease in children's health (both mentally and physically) since children are more vulnerable to these than adults (Gill, 2021). To put child-friendliness on the agenda of cities worldwide, UNICEF and UN-HABITAT introduced the Child-Friendly Cities Initiative (CFCI) initiative in 1996 (UNICEF, 2023a). This initiative incorporates children's needs and desires by making them active decision-makers so that their opinions will be considered in policy implementation in cities (Nasrabadi, García & Pourzakarya, 2021). Governments are supported by this initiative in realizing Child-Friendly Cities (CFC), which can be defined as cities wherein public policies, programs, and decisions are made with the voices, needs, priorities, and rights of children in mind (UNICEF, 2023c). However, the actions of one governmental department alone can only address a small percentage of the issues affecting children. Therefore, creating a CFC requires cross-sectoral collaboration between organizations and between regional and national departments or ministries (UNICEF, 2023d).

One planning strategy that has the potential to enhance a city's child-friendliness, is the 15-minute city, which has multiple variations such as the 10-Minute City or the 20-Minute City (ITDP, 2022). This research focuses on the 10-Minute City, which is a city in which all our basic needs, such as education, leisure, and shops, are within a 10-minute walk or cycle (Moreno et al., 2021; Unfccc, 2021). Moreover, the 10-minute city should ensure a more inclusive, sustainable, and safer city (Moreno et al., 2021). In 2020, this concept gained a lot of interest after the mayor of Paris stated that this model would be the future of Paris. Cars will be replaced by bikes, or even by walking, which will guarantee a more livable city for its inhabitants in which the inhabitants are within close distance of their basic needs (Winkless, 2022). The 10-Minute City reduces car traffic, increases social cohesion, and improves residents' health. These are some examples of why implementing the 10-minute city can potentially increase the child-friendliness of cities (Derr, 2015). Within the 10-minute city, walking and cycling are central components and those modes of transport are of great importance to children and caregivers. For children and caregivers, walking is the most flexible, affordable, and accessible mode of transport and stimulates physical activity and mental health. Those advocating for

CFCs, therefore, state that it is of great importance that cities are planned in such a way, that basic facilities are within a 10-minute radius and that neighborhoods are walkable (ITDP, 2022).

One of the cities that will implement the 10-minute city, is the city of Utrecht, the Netherlands. Due to the expected population growth from 350.000 in 2018 to 470.000 inhabitants in 2040 (Gemeente Utrecht, 2023), the municipality wants to ensure a livable city for everyone that grows in line with the rapid population growth. In the 'Ruimtelijke Strategie Utrecht 2040' (RSU 2040), the municipality elaborates on the plan in which they assign four new city centers. With these centers, transport, sports, education, and culture are accessible within a 10-minute walk or bike ride (Gemeente Utrecht, 2021c). The RSU 2040 is part of the more extensive 'Omgevingsvisie' of the Municipality of Utrecht. This 'Omgevingsvisie' exists of policy documents of the 'Koers', thematic policy documents, and policy documents on specific areas (Gemeente Utrecht, 2022c). With an eye on the statement of UNICEF (2023d) that creating a CFC requires cross-sectional collaboration, it is thus important that child-friendliness is integrated into all above-mentioned policies of the municipality of Utrecht, and not solely in one thematic policy that focuses on child-friendliness within the city.

1.2 Scientific relevance

For a few years, there has been increasing popularity in research on the 10-Minute City and how this concept can boost the development of urban areas into a more humane environment that is safer, more resilient, sustainable, and inclusive (Moreno et al., 2021). The 10-Minute City could improve the quality of life for all the city's inhabitants, which also includes marginalized groups such as the elderly and children (Gaglione et al., 2022). However, an understudied aspect of the concept is how children's needs and desires are included in the concept. This is confirmed by Khavarian-Garmsir et al. (2023), who state that limited attention within research on this concept and the concept itself is given to a variety of social and demographic groups. The model takes a 'one-size fits all' approach which fails to address all different demographic groups. It is therefore important to research the potential of integrating policies regarding the needs and desires of specific demographic groups, in this case, children, in policies regarding the 10-minute city. Especially in the light of urban or spatial justice, it is important to do more research on integrating all demographic groups in the 10-minute city, since the failure of this integration can be seen as an urban injustice (Fainstein, 2013). Moreover, the role of local governments is increasing nowadays, and with their autonomy, they influence the opportunities of citizens (Moroni, 2020). It is therefore of great importance that

local governments know how to integrate all demographic groups in their spatial policies, to prevent a rise of urban injustices.

1.3 Societal relevance

To ensure a high-quality life for all urban inhabitants, the desires of all demographic groups should be included in urban policies. With the rapid urbanization rate, more families with children are moving to cities, but those cities are historically built with a focus on motorized traffic instead of children's needs (Kyttä et al. 2018). This increase in motorized traffic results in public spaces filled with dangers for children (Simoneti, 2020), and since children cannot express their needs for their spatial environment on their own, it is important that adults take children's needs into account everywhere in the city and not just in designated playgrounds. However, there is limited information available on children's perception of their environment, which can result in the exclusion of children in urban planning processes (Nasrabadi, García & Pourzakarya, 2021). Thus, we should ensure that children's needs are included in all kinds of spatial policies in cities, which will lead to a city that is child-friendly and friendly for all other users (Simoneti, 2020).

One spatial policy into which children's needs should be integrated is the 10-Minute City. Integrating children's needs in the 10-Minute City would benefit children's development. By being able to walk and cycle more, taking care of their children would be easier for caretakers. More opportunities for interaction with others will be provided, caretakers and children will be more physically active, and more social connections will be established (ITDP, 2022). According to Urban95 (2023), for the optimal development of children, it is important that there are many green spaces in their environment, that there is clean air, and that facilities, such as daycare, are in proximity. All these components are central aspects of the 10-Minute City, which makes it interesting to see how this concept can support the child-friendliness of a city.

1.4 Research Aim & Research Questions

With the expected population growth in the city of Utrecht, which also means an increase in children living in the city, the municipality of Utrecht strives to become a city in which every child can move and play, as soon as it steps foot out of their house (Gemeente Utrecht, 2022a). This research, therefore, discusses Utrecht's current performances in child-friendliness, the experienced strengths and weaknesses of these, and the potential of the 10-Minute City for children in Utrecht.

Based on this research objective, the following research question is established:

How can the 10-Minute City concept support the development of Utrecht as a Child-Friendly City?

To provide this research with structure and to be able to answer the main research question, the following sub-questions are drawn up.

1. *How can the 10-Minute City and the Child-Friendly City be defined and how are they operationalized within spatial planning strategies?*
2. *What are the potential benefits and risks of the 10-Minute City for children, in terms of promoting active mobility and increasing access to services?*
3. *What are the strengths and weaknesses in current performances on child-friendliness in the city of Utrecht?*
4. *What are the potential benefits and risks of the 10-Minute City for children in Utrecht, in terms of promoting active mobility and increasing access to services?*

1.5 Reading Guide

Chapter One encompasses the introduction and the research aim. The theoretical background that forms the foundation for this research follows in Chapter Two, after which the methodology is discussed in Chapter Three. Chapter Four extensively discusses the the results of the research. The thesis ends with Chapter Five, which discusses the conclusion, policy recommendations, and reflection on the research. The references and appendices can be found at the end of the thesis.

2. Theoretical Framework

2.1 The 10-Minute City

2.1.1 Towards the Concept of the 10-Minute City

The 10-Minute City is based on chrono-urbanism, which acknowledges that travel time, especially when using motorized vehicles, negatively affects the quality of urban life (Logan et al., 2022; Moreno et al., 2021). Chrono-urbanism emphasizes proximity when designing urban facilities by considering the time it takes individuals to go between locations on foot or by bicycle (Allam et al., 2022a; Del Rosaria et al., 2022).

Urban areas have undergone substantial technological changes since World War II, including the mass production of cars and the quick growth of infrastructure geared toward them (Allam et al., 2022a; Moreno et al., 2021). As a result, motorized cars increasingly predominate in metropolitan areas, which has detrimental effects such as urban sprawl, traffic congestion, pollution, and increased traffic injuries (Allam et al., 2022a; Gössling, 2020; Moreno et al., 2021). Many cities continue to promote parking lots and car infrastructure despite these negative effects (Gössling, 2020). Due to the availability of practical solutions like cars and digital technologies, these innovations have blurred the distinction between space and time. Our lifestyles, production, and consumption are critically examined by the chrono-urbanism notion, which increases our awareness of the spatial and temporal disparity that already exists (Ma & Barbara, 2022).

The Covid-19 pandemic emphasized the vulnerabilities and deficiencies of cities, including limited access to necessities and excessive reliance on transportation (Allam et al., 2022a; Bocca, 2021; Moreno et al., 2021). To prioritize active transportation like cycling and walking, the 10-Minute City emerged as a feasible option (Allam et al., 2022a; Gaglione et al., 2022). Communities were able to access amenities while keeping social distance and developing resilience throughout the pandemic by establishing pedestrian and bike lanes (Allam et al., 2022a). This restructuring encourages neighborhood interaction, public areas, and a facility-based proximity-based strategy (Gaglione et al., 2022; Urban Mobility, 2022).

The 10-Minute City, introduced by Carlos Moreno in 2016, emerged as a solution for restructuring cities during the COVID-19 pandemic (Allam et al., 2022a). The concept holds a strong normative claim on what a city should entail, and it strives to assure that residents can reach essential amenities on foot or by bicycle in ten minutes or less (Allam et al., 2022a;

Hosford, Beairsto & Winters, 2022; Moreno et al., 2021; Urban Mobility, 2022). The idea allows flexibility in destination selection, minimizing excessive restrictions during implementation (Urban Mobility, 2022). The 10-Minute City encourages walking and cycling as the main forms of transportation, which reduces reliance on cars, resulting in benefits like decreased noise pollution, improved air quality, lower fuel emissions, and reduced traffic congestion (Gaglione et al., 2022; Logan et al., 2022; Marquet & Miralles-Guasch, 2014; Moreno et al., 2021; Urban Mobility, 2022). As fewer people drive, traffic safety may increase, resulting in fewer accidents and fatalities (Urban Mobility, 2022). Additionally, the 10-Minute City's adoption is in line with aims for sustainable development and carbon reductions worldwide (Allam et al., 2022a; Urban Mobility, 2022).

The 10-Minute City strongly emphasizes the need for attractive and safe urban environments to promote walking and cycling (Urban Mobility, 2022). In Paris, efforts are being made to promote cycling through a bicycle plan aimed at transforming the city's streets into bicycle-friendly environments by 2026. This involves reducing street parking spaces to create more room for bicycle parking, green urban spaces, and playgrounds (Urban Mobility, 2022). By converting major, car-dominating, boulevards into green urban spaces, residents can reach necessary amenities in a pleasant and secure environment (Gaglione et al., 2022).

Promoting walkability has numerous benefits. According to Marquet and Miralles-Guasch (2014), walking is a democratic form of transport that everyone can use, regardless of race, gender, or economic background. For caregivers and children, it is a flexible and practical choice (ITDP, 2022). Furthermore, Moreno et al. (2021) point out that encouraging active mobility enhances urban residents' mental and physical health (Gaglione et al., 2022; Logan et al., 2022). Advocates of the 10-Minute City argue that the proximity of amenities and the redesign of public spaces enhance the quality of life for urban residents. Because of the shorter travel distance, there are more opportunities for social interactions (Gaglione et al., 2022; Khavarian-Garmsir, Sharifi, & Sadeghi, 2023; Moreno et al., 2021). Milan provides a practical example of implementing this concept by creating attractive urban spaces such as "open squares" and "open roads" (Figure 1). These places provide extra

Figure 1. Example of an open square in Milan (C40 Cities Climate Leadership Group & City of Buenos Aires, 2022).

space for cyclists and pedestrians, encouraging social interactions (C40 Cities Climate Leadership Group & City of Buenos Aires, 2022). These 'open squares' and 'open roads' will allow for more outdoor activity with a specific focus on the city for children in which they can safely play outside (Bocca, 2021). In general, the increase in social relations between inhabitants will increase social capital since urban residents will have more trust in their neighbors, which will ultimately better the quality of life (Logan et al., 2022). According to Urban Mobility (2022), the increase in social interactions will reduce crime since more natural surveillance can take place. This natural surveillance, together with ensuring accessible and well-connected public spaces, can make children and caregivers more independent, which can improve their well-being and inclusion (Urban Mobility, 2022).

2.1.2 The Dimensions of the 10-Minute City

To achieve the goals of the 10-Minute City, four main planning principles are established which form the foundation of the concept. The 10-Minute City promotes four pillars, being: the proximity of amenities, the density of amenities, the diversity of cultures, people, and amenities, and the digitalization/ubiquity pillar that can foster inclusivity (Figure 2). Those pillars can, altogether, result in closer-knit communities (Moreno et al., 2021).

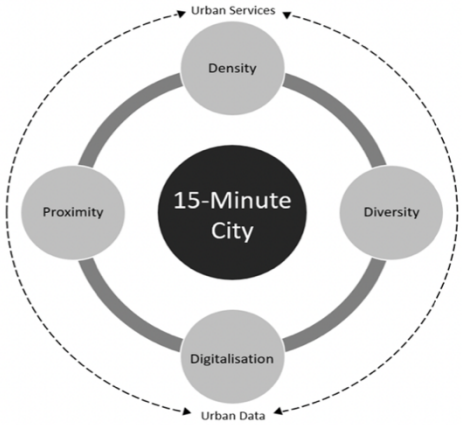

Figure 2. Conceptual Model 15-Minute City (Moreno et al., 2021).

2.1.2.1 Proximity

The proximity dimension is about the maximum travel distance and time that residents should have to undertake to reach their basic amenities (Bocca, 2021; Khavarian-Garmsir, Sharifi & Sadeghi, 2023; Urban Mobility, 2022). The dimension, therefore, has both a spatial and temporal element (Allam et al., 2022a; Moreno et al., 2021). Proximity is a critical dimension of the 10-Minute City since this dimension allows residents to have easy access from their homes to work, commerce, education, healthcare facilities, and other basic amenities in a shorter time span. The proximity dimension is a central component of Paris' 15-Minute City strategy since they will focus on becoming a city of proximities in which inhabitants should be able to reach all essential amenities within fifteen minutes of walking or cycling. Therefore, there is now a focus on developing new services in each district (Postaria, 2021). While this dimension is critical for the 10-Minute City, it must be associated with the other dimensions to be able to reach the goal of restructuring cities (Moreno et al, 2021). The proximity dimension

will support cities in combatting issues such as increasing emissions, urban sprawl, and other land-use issues. Moreover, by reducing the need to use a car, traffic injuries will decrease, social interactions between residents will increase, and cities will be stimulated to create better walking paths and bicycle lanes. (Allam et al., 2022a).

2.1.2.2 Density

In the traditional form of urban planning, density is meant in the form of high-density buildings. This brought along problems such as resources being overconsumed and huge dependence on fossil fuel to be able to power the buildings (Allam et al., 2022a; Moreno et al., 2021). Within the 10-Minute City, density refers to the high availability of basic amenities and it defines the number of people that can be accommodated by the city without overconsuming resources, infrastructure, and public space (Allam et al., 2022a; Allam et al., 2022b; Bocca, 2021). With optimized density, it is feasible to efficiently plan the area so that residents can access all their basic amenities without having to use cars (Khavarian-Garmsir, Sharifi & Sadeghi, 2023; Moreno et al., 2021; Urban Mobility, 2022). The density pillar is central to Melbourne's 20-Minute City strategy, in which they will focus on increasing the density of amenities in all neighborhoods and by creating enough local employment opportunities in all neighborhoods. Those actions will contribute to the vision of Melbourne in which they want to promote 'living locally' (Gower & Grodach, 2022; State Government of Victoria, 2016b).

2.1.2.3 Diversity

The meaning of diversity as a dimension in the 10-Minute City is twofold. First, there is a need for mixed-use neighborhoods with diversity in amenities (e.g., living, working, and commerce) (Allam et al., 2022a; Bocca, 2021; Khavarian-Garmsir, Sharifi & Sadeghi, 2023; Moreno et al., 2021; Urban Mobility, 2022). Mixed-use neighborhoods are essential for maintaining thriving urban economies, providing enough homes for all inhabitants, fostering inclusivity, and advancing sustainable lifestyles. Establishing mixed-use neighborhoods ensures optimal density and proximity to needed amenities and will allow for the creation of walkable streets and bicycle lanes throughout the city (Moreno et al., 2021). By making sure that many kinds of basic amenities are present in the neighborhood and by establishing walkable streets and bicycle paths, residents will profit from this, and they will not need to travel elsewhere for those amenities (Allam et al., 2022a; Allam et al., 2022b). Besides only focusing on a mixed-use neighborhood, cities can think of a multimodal use of amenities themselves. For instance, in Paris, schools are destined to be the capitals of the neighborhoods by transforming the school buildings (and schoolyards) into public spaces that can be used for other activities and uses after school hours (Allam et al., 2022a; Postaria, 2021). Another example of mixed-use amenities can be seen in Milan where neighborhood centers are created that allow for multiple

activities and functions where inhabitants can meet to increase social relations (Bocca, 2021). The function of public spaces will be maximized in these ways (Moreno et al., 2021). Second, there is a need for a mix of cultures and people (Allam et al., 2022a; Bocca, 2021; Khavarian-Garmsir, Sharifi & Sadeghi, 2023; Moreno et al., 2021). Cultural diversity increases the creativity and innovation of the city (Allam et al., 2022a; Allam et al., 2022b) and it promotes social cohesion, which will ultimately lead to more trust among people and more social capital (Moreno et al., 2021). These two aspects of diversity can lead to a pleasant urban environment that can attract visitors and therefore increase tourism. This will bring along many new opportunities for employment and an increase in the local economy (Moreno et al., 2021).

2.1.2.4 Ubiquity/Digitalization

In this dimension, technological developments can be used to foster inclusivity, increase citizen participation, and make the delivery of services to residents even more accessible (Bocca, 2021; Khavarian-Garmsir, Sharifi & Sadeghi, 2023; Moreno et al., 2021). An example of an attempt to increase citizen participation through digital technologies can be seen in Milan. Here they want to ensure the participation of all demographic groups by using digital tools that allow for participation and by making access to the internet a right for all citizens (Comune di Milano, 2020). Besides citizen participation, digital advancements can be used to enhance the potential of bike sharing and the feeling of safety in cities can be increased by digital tools such as cameras and sensors (Allam et al., 2022a; Moreno et al., 2021). With the increase in car dependency in a city, inequalities between residents are highlighted. The residents that can afford a car will be favored, while others without a car cannot reach certain amenities. By using technological developments, the 10-Minute City tries to combat those inequalities (Allam et al., 2022a) since it can make amenities more accessible and urban life more affordable for all residents (Allam et al., 2022b; Urban Mobility, 2022). When relating this dimension to the proximity dimension, proximity can be increased through online shopping and by making virtual communication possible, which decreases the need to commute (Moreno et al., 2021).

2.1.3 Challenges of Implementing the 10-Minute City

Besides the benefits of the 10-Minute City, some challenges can be seen when implementing the concept of which a few are discussed in this section. First, all amenities are considered equal in the 10-Minute City. This means that for all amenities the same threshold of ten minutes is set, while the acceptable travel time per amenities may differ. For example, one might consider the acceptable travel time to a hospital longer than to a supermarket (Logan et al., 2022).

Secondly, the 10-minute City based on a one-size-fits-all strategy cannot be applied to all cities because different problems that cities deal with are not universal. Every neighborhood needs a strategy that considers the specific context and needs (Khavarian-Garmsir, Sharifi & Sadeghi, 2023).

Thirdly, the concept does not distinguish different demographic groups. Different demographic groups will need different qualities of access to amenities. When we do not recognize those different groups, we might create urban areas that accommodate one group of people, while ignoring other groups (Hosford, Beairsto & Winters, 2022; Khavarian-Garmsir, Sharifi & Sadeghi, 2023; Logan et al., 2022). For example, when looking at children or parents traveling with children, we can see that their needed travel time to amenities will be longer (ITDP, 2022). So, to develop a 10-Minute City that includes all demographic groups, researchers and policymakers should estimate the needed travel time to amenities per group and take these into account when implementing the concept (Hosford, Beairsto & Winters, 2022).

Fourthly, regarding the proposed change in modes of transport in the 10-Minute City, policymakers should be aware that they have to offer alternative modes of transport (in this case, provide accessible walking paths and bicycle lanes) since a change in transport culture will otherwise not be reachable (Gössling, 2022). Especially in suburban areas, the use of cars is the norm. When no suitable alternatives are offered to suburban residents, it will be hard to get them to walk or cycle (Urban Mobility, 2022).

Lastly, while digital developments can help foster inclusivity and citizen participation (Bocca, 2021; Khavarian-Garmsir, Sharifi & Sadeghi, 2023; Moreno et al., 2021), it can also increase the digital divide. When not all citizens have the same access to the internet or other digital technologies, or when they do not have the skills or knowledge to access these, they can be excluded from social engagement or citizen participation (Ferreira, 2021). Moreover, digitalization may decrease the sense of human interaction, which can for instance result in a loss of human contact between policymakers and inhabitants, or between inhabitants themselves (Nabossa & Kaar, 2020). However, this contact with inhabitants and the involvement of inhabitants gives a clear view of their needs and desires regarding the spatial environment, since the environment can then be designed with those needs and desires in mind and inhabitants will be more tended to be satisfied with their living environment (Mourits et al., 2022).

The discussed benefits and challenges allow us to explore the potential benefits and risks of the 10-Minute City for children.

2.2 The Child-Friendly City (CFC)

2.2.1 The Child-Friendly Cities Initiative (CFCI)

Children in urban areas face various risks and challenges due to the built environment, including air pollution, limited physical activity opportunities, and restricted access to resources (Gill, 2021; Nasrabadi, García & Pourzakarya, 2021). According to Woolcock, Gleeson, and Randolph (2010), these characteristics play a role in health problems such childhood obesity and mental stress. Playgrounds and other designated places were made because of to these concerns, but they often put more emphasis on adults' needs and desires than on the needs of children (Simoneti, 2020). Urban planning decisions frequently disregard the opinions and voices of children, rendering them invisible in the process (Nasrabadi, Garca & Pourzakarya, 2021; Whitzman, Worthington & Mizrachi, 2010). The UN Convention on the Rights of the Child (1989) was developed to guarantee children's welfare and involvement in urban development (Nasrabadi, García & Pourzakarya, 2021; Whitzman, Worthington & Mizrachi, 2010). The CFCI was introduced by UNICEF in 1996 in response to the children's lack of visibility and physical difficulties (UNICEF, 2023a). The program prioritizes children's well-being and actively involves them in the urban planning process to construct livable cities (Gill, 2021; Nasrabadi, Garca & Pourzakarya, 2021). To implement the UN Convention on the Rights of the Child and provide children with a secure and welcoming environment, local governments are essential (UNICEF, 2023a; Whitzman, Worthington, and Mizrachi, 2010; Yuniastuti & Hasibuan, 2019). The CFCI recognizes children as a distinct group with unique needs and perspectives, which children themselves must directly express (Whitzman, Worthington & Mizrachi, 2010). Moreover, the initiative serves as a platform for cooperation among public and private organizations, academia, media, and children dedicated to fostering child-friendly environments (UNICEF, 2023a).

In cities, children's well-being depends on meeting their basic needs and fostering environments that foster their development. It is essential that everyone has access to necessities like affordable food, safe drinking water, and sanitary facilities, which calls for a fair allocation of resources and an adequate urban infrastructure (Gill, 2021; ITDP, 2022; Krysiak, 2020). Children's health, happiness, and quality of life are strongly influenced by the design of streets, parks, public spaces, and transportation networks (Gill, 2021; ITDP, 2022; Krysiak, 2020). Children can play, learn, exercise, and socialize in developed and green public

areas, which supports the development of their cognitive and motor skills (Yuniastuti & Hasibuan, 2019). Improved mental and physical well-being correlate to more outdoor time and active mobility (Gill, 2021; UNICEF, 2023b). Early childhood brain development is facilitated by the creation of aesthetically beautiful, safe, and socially engaging surroundings, which is beneficial for future generations as well as educational performance, health, and community cohesion (Global Designing Cities Initiative, 2020). Walkable neighborhoods and green spaces promote social interactions, trust, and a sense of safety (Gill, 2021; ITDP, 2022).

2.2.2 Defining the Child-Friendly City

According to UNICEF (2023c), a Child-Friendly City (CFC) is defined as: *"a city, town, community, or any system of local governance committed to improving the lives of children within their jurisdiction by realizing their rights as articulated in the UN Convention on the Rights of the Child"*. In other words, the rights, needs, and voices of children must be an integral element of policies and decisions made in cities, towns, or communities (UNICEF, 2023c). The CFC focuses on the right of the child to public space (Whitzman, Worthington & Mizrachi, 2010), which makes that besides the participatory approach in CFCs (Gill, 2021), child-friendliness is also about the urban and environmental elements that should be of high quality. These can, for example, be available green public spaces, various available amenities and activities, the possibilities for independent mobility, a social setting in the neighborhood, and a safe environment (Broberg, Kyttä & Fagerholm, 2013; Kyttä et al., 2018; Nasrabadi, García & Pourzakarya, 2021). Creating sidewalks, parks, squares, and other public areas in such a way that children can play and be seen in city life is known as child-friendly urban planning. It takes children's opinions and experiences carefully and works to increase their opportunities for play, exploration, and getting around their neighborhood and the larger city through planning (Gill, 2021). An example of such a child-friendly environment can be seen in playful Learning Landscapes (PLL). In PLLs, playful learning features, e.g. puzzles and games, are integrated into public spaces, such as bus stops, parks, playgrounds, or parking lots. Where those places first did not allow for much interaction between children and caregivers, the newly added environmental features allow for this opportunity (Brookings Institution, 2021). A specific example of a PLL is the Urban Thinkscape initiative in Philadelphia (Figure 3). In this case, several playful elements are added to a bus stop that

Figure 3. The puzzle wall in the urban thinkscape in Philadelphia (Playful Learning Landscapes Action Network, 2019).

allow for playful interactions between children and their caregivers. Examples are a puzzle wall at the back wall of the bus stop to stimulate children's math skills, a pattern of shoe prints that dares children to jump, hidden figures that stimulate children to work together to search for the images, and stories to develop children's reading and narrative skills (Center on the Developing Child - Harvard University, n.d.; Playful Learning Landscapes Action Network, 2019).

A spatial environment that is planned in a child-friendly manner, will automatically also be friendly for other demographic groups (Simoneti, 2020). Child-friendly urban planning can be of great value to create cities that are safe, healthy, and good environments for children (Gill, 2021), which plays an important role in children's health and well-being (Kyttä et al., 2018). One of the main goals of child-friendly urban planning is to ensure that children can safely enter all public spaces and that they can become active users of the streets to play and socialize, instead of being forced to play in a designated playground behind gates and fences (Gill, 2021).

The elements of a CFC	***The beneficial effects on children***
Sufficient access to clean water and food, appropriate housing & good air quality	▪ Beneficial effect on children's health
Being able to spend more time outdoors	▪ Beneficial for muscle/bone strengthening, weight, disease prevention, and mental health.
Well-developed & green public spaces	▪ allow for learning, playing & social interactions. ▪ Will increase children's active mobility. ▪ Will stimulate exercising and playing.

Table 1. The beneficial effects of a CFC on children's development

2.3 Operational Definition of Environmental Child-Friendliness

2.3.1 The Bullerby Model

The criteria for a child-friendly environment are relatively broad, which makes it hard to assess environments on their child-friendliness (Broberg, Kyttä & Fagerholm, 2013). A model that is developed to assess the child-friendliness of environments is the Bullerby Model by Kyttä (2004). This model contains two central criteria for environmental child-friendliness: children's independent mobility (CIM) and environmental affordances (Broberg, Kyttä & Fagerholm, 2013; Kyttä, 2004). Within the Bullerby model, the central idea is that the relationship between CIM and environmental affordances defines four separate categories of children's environment (Broberg, Kyttä & Fagerholm, 2013). Broberg, Kyttä & Fagerholm (2013) acknowledge that the Bullerby model does not incorporate all the critical elements of environmental child-friendliness, but they argue that the two chosen dimensions are among

the most important ones. Another point of attention regarding this model is given by Kyttä (2004), who states that the given model with its four environments is constantly influenced by individual experiences and children's way of living in their environment. The same environment can be considered a Bullerby environment by one child, while another child might perceive it as a cell environment. This acknowledgment and the comprehensive perspective on child-friendly environments by narrowing it down to four types of environments, make the model suitable to use in practice by planners in creating child-friendly environments (Broberg, Kyttä & Fagerholm, 2013; Kyttä, 2004). In Table 2, an overview is stated of the urban features that can either increase or decrease CIM and environmental affordances. The specific features will be discussed in chapters 2.3.2 and 2.3.3.

Increase	**Decrease**
Stimulation of active mobility	Perception of unsafety
Presence of green public spaces	Decline of amenities
Density of amenities	Heavy traffic
Strong social ties	Places for children (designed by adults)
Safe traffic situations	
Children's places (participation of children)	

Table 2. Overview of urban features that influence CIM and the environmental affordances.

2.3.2 Children's Independent Mobility

The first central criterion for environmental child-friendliness is Children's independent mobility (CIM) (Broberg, Kyttä & Fagerholm, 2013; Kyttä, 2004). CIM can be defined as the capacity of children to move around the public space independently, primarily by walking, cycling, and the use of public transport (Broberg, Kyttä & Fagerholm, 2013; Broberg, Salminen & Kyttä, 2013; Gill, 2021; Whitzman, Worthington & Mizrachi, 2010). Over the years, a decline in CIM can be seen which is due to the parental perception of dangers in traffic, stranger-danger, and a decline in amenities in neighborhoods (e.g. local schools and shops) (Fyhri et al., 2011; Kyttä, 2004; Whitzman, Worthington & Mizrachi, 2010). Heavy traffic, difficult traffic situations, and long distances to school make that children are more often driven to school by their parents, which decreases CIM (Bringolf-Isler et al., 2008; Broberg, Kyttä & Fagerholm, 2013; Gill, 2021). In addition, Whitzman, Worthington & Mizrachi (2010) state that the increased adult mobility, due to an increase in the use of motorized vehicles, resulted in a decline of CIM because of the dangers brought by those motorized vehicles. On the contrary, there are also features of a neighborhood that can stimulate CIM. Examples of this are the presence of green public spaces, residential density, a high density of amenities in the

neighborhood, public space that prioritizes pedestrians, light traffic, and enough recreational areas nearby (Broberg, Kyttä & Fagerholm, 2013). Specific physical features of a neighborhood that increase CIM can be sidewalks, bicycle lanes, junctions controlled by traffic lights, traffic-separated areas, and a well-functioning network of public transport (Broberg, Kyttä & Fagerholm, 2013; Kyttä, 2004). In Bogotá, Colombia, an example of increasing CIM by improving the public space can be seen. The city set up a program that prioritizes vulnerable road users, especially children, by only permitting safe speeds near schools and by increasing the available space for cyclists and pedestrians (Global Designing Cities Initiative, 2022). An example is the neighborhood El Inglés, where a roundabout was redeveloped by reducing the number of legs, connecting the middle of the roundabout to surrounding areas, increasing the space for cyclists and pedestrians, and reducing the traffic speed (Figure 4). This significantly reduced pedestrian crossing distances and the environment became more friendly for vulnerable road users (Global Designing Cities Initiative, 2020).

Figure 4. The roundabout in Barrio El Inglés, Bogotá (Global Designing Cities Initiative, 2020).

Besides the physical features of an environment, an increase in CIM can be seen when children become older, but another differentiation in CIM is gender-related, with girls having less freedom than boys (Kyttä, 2004; Whitzman, Worthington & Mizrachi, 2010). Strong social ties and many children in the neighborhood can also be a positive influence on CIM since peers can stimulate each other to move around independently and collective responsibility for the supervision of children can be seen among adults (Broberg, Kyttä & Fagerholm, 2013; Kyttä, 2004). Supporting CIM, and thereby also active mobility, has a positive effect on a child's physical, social, cognitive, and emotional development, but it also has a beneficial effect on the environment since children are supported to make use of sustainable transportation, which will likely proceed in adulthood (Fyhri et al., 2011; Gill, 2021; Kyttä, 2004).

2.3.3 Environmental Affordances

The second central criteria for environmental child-friendliness are environmental affordances (Broberg, Kyttä, Fagerholm, 2013; Kyttä, 2004). Affordances can be defined as the perceived possibilities and functions that are offered to a specific individual by an environmental feature (Cloward Drown & Christensen, 2014). Those possibilities and functions can be offered by physical features of the environment, and by emotional, social, and cultural features (Gill, 2021; Kyttä, 2004; Kyttä 2018). So, affordances are not the specific features of the environment, but it refers to the opportunities and activities that the environmental feature permits or affords for an individual (Hart, 1988; Kyttä, 2018). Affordances are therefore relationally specified which means that they are determined by specific environmental features in relation to the features of a specific individual, of which an example is given by Hart (1988). He gives the example of when a horizontal object is located within a specific height that falls within the leg length of an individual, that individual perceives the horizontal as climb-on-able (Hart, 1988). This relates to the statement of Kyttä (2004) that we should distinguish potential and actualized affordances. The design of features and environments may prevent certain users, such as individuals with disabilities, from actualizing the potential affordances. This can result in an environment that is unfriendly for some groups or an environment that is even excluding them (Kyttä, 2004). This can be seen in the affordances of an environment for a young child on the one hand, compared to an adult on the other hand (Heft, 1988). A concrete example of this can be seen in a distinction between places for children and children's places made by Morgenthaler et al. (2023). They elaborate on places for children as places that are designed by adults with features that they think belong in a playground and that will allow children to e.g., play, climb, run, and slide (Morgenthaler et al., 2023). These playgrounds are modified environments in which some possibilities to play are highlighted and others are minimized by adults (Kernan, 2010). On the other hand, Morgenthaler et al. (2023) describe children's places as places where children attach to the playground and where they add meaning to the playground. In the latter environment, children recognize action possibilities that allow them to e.g., slide, climb, play, and run. In this example, we can see the power an environment has to allow a child to play (Morgenthaler et al., 2023).

2.3.4 The four environments of the Bullerby Model

Four types of environments are distinguished in the Bullerby model (Figure 5). First, we can define the *Bullerby* environment in which children can move around freely which reveals the broad variety of affordances. Secondly, the *Cell* environment does not offer children the opportunity to move around in the environment, so they cannot form a personal relationship

with this environment. Thirdly, the *Wasteland* environment does offer children the opportunity of independent mobility, but no affordances are present (Broberg, Kyttä & Fagerholm, 2013; Kyttä 2004). In this *Wasteland* environment, children are allowed to walk around, cycle, or make use of public transport, however, this independent mobility solely displays the dullness of their environment (Gill, 2021). Lastly, the *Glasshouse* environment does contain external affordances, however, children are not allowed to move around independently. Children can be aware of external affordances, but for instance, mobility restrictions that are forced by their caregivers make that children do not have independent access to those environmental affordances (Broberg, Kyttä & Fagerholm, 2013; Kyttä 2004). In this *Glasshouse* environment, it might be the case that the environment is full of affordances, according to adults, but those affordances are not suitable for children, which makes the environment hard for children to independently move around (Gill, 2021).

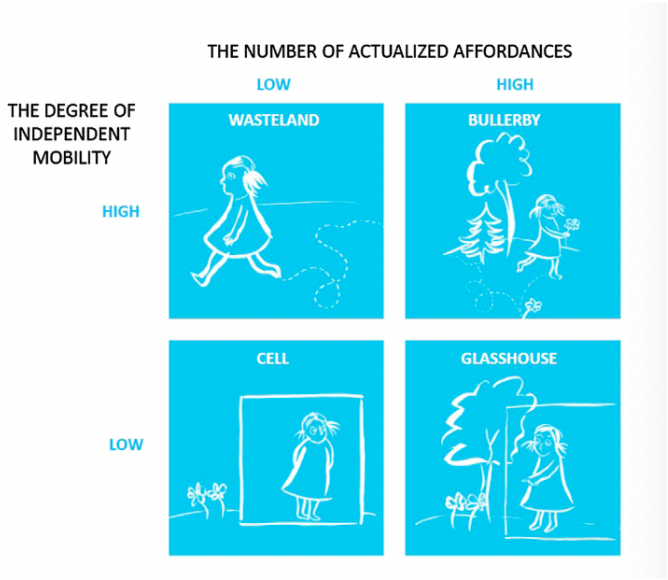

Figure 5. The Bullerby Model by Kyttä (2004).

2.4 The Potential Benefits & Risks of the 10-Minute City for Children

2.4.1 The Potential Benefits of the 10-Minute City for children

2.4.1.1 Promotion of Active Mobility

Within the 10-Minute City, several elements can contribute beneficially to children's development. The first element is the promotion of active mobility. As we have already read before, the general advantages of promoting active mobility that are stated by advocates of the 10-Minute City are the accessibility of this mode of transport for everyone, the improvements of mental and physical health of residents, the reduction of cars and thereby fuel emissions, and the stimulation of social interactions between residents which leads to stronger social relations (Gaglione et al., 2022; Khavarian-Garmsir, Sharifi & Sadeghi, 2023; Logan et al., 2022; Marquet & Miralles-Guasch, 2014; Moreno et al., 2021). When relating those stated advantages to children's development, we can see that active mobility is crucial for children's physical development since being active outdoors has beneficial effects on their weight, disease

prevention, and the strengthening of their bones and muscles (Gill, 2021; ITDP, 2022; UNICEF 2023b).

The promotion of active mobility demands safe and attractive public spaces (Urban Mobility, 2022). Well-developed and green public spaces are important for children's development since they allow children to play, learn, exercise, and socialize which will benefit children's cognitive and motor skills (ITDP, 2022; Yuniastuti & Hasibuan, 2019). More than eighty percent of a child's brain is formed before the age of three, which makes it crucial that children can grow up in such safe and attractive places, especially in those early years (ITDP, 2022). Creating aesthetic, safe, and joyful public spaces, which is a key element of the 10-Minute City, can thus have a beneficial effect on children's brain development which functions as a strong basis for their development later in life (Global Designing Cities Initiative, 2020).

Also, as mentioned before, we can see that the social interactions that are stimulated by promoting active mobility and by creating safe and attractive public spaces can lead to stronger social relations between residents (Gaglione et al., 2022). These stronger social relations can increase the levels of trust, natural surveillance, and therefore the feeling of safety (Logan et al., 2022). When caregivers perceive their environment as safe, they are potentially more tended to let their children go outdoors alone, which will increase CIM (Broberg, Kyttä & Fagerholm, 2013; ITDP, 2022; Kyttä, 2004; Urban Mobility, 2022).

The last advantage of promoting active mobility that will be discussed here is the reduction of cars, and therefore a reduction in fuel emissions. Children are highly vulnerable to environmental factors so reducing air and noise pollution can have beneficial effects on children's health (Gill, 2021; ITDP, 2022). Moreover, reducing the number of cars on the street, or reducing the maximum traffic speed, will lead to safer streets on which children can play or independently walk or cycle through the surroundings (Broberg, Kyttä & Fagerholm, 2013; ITDP, 2022; Kyttä, 2004).

2.4.1.2 Availability of Amenities

The second element of the 10-Minute City that can benefit children's development, is the proximity, diversity, and density of amenities. These dimensions of the 10-Minute City are in line with two central components of a CFC: diversity in environmental features and present amenities on the one hand, and good and safe access to play and the present amenities on the other hand (Kyttä, 2004). According to Broberg, Kyttä & Fagerholm (2013), examples of features of a neighborhood that can stimulate CIM are the presence of green public spaces, residential density, and a high density of amenities in the neighborhood. So, when there is a

high density of various amenities (the diversity and density dimension) near children's homes (the proximity dimension), parents can be more tended to let children go to these amenities themselves (an increase in CIM). However, if those amenities are not in line with children's needs and characteristics, the affordances of these amenities will be low which means that children will not have the opportunity to make use of them (Kyttä, 2004). Besides the fact that long travel distances prevent easy access to amenities for children, it can restrict caregivers that have to travel with young children to easily access those amenities, e.g. because of walking with strollers (ITDP, 2022). The proximity dimension of the 10-Minute City is, therefore, an important determinant in the extent to which children and caregivers can access amenities, and whether children are stimulated to travel independently.

2.4.2 The Potential Risks of the 10-Minute City for Children

Besides the benefits that the 10-Minute City can have on children's development, there are some potential risks for children's development attached to the implementation of the 10-Minute City. Below, some of these potential risks are discussed.

First, some risks can be seen regarding the density component of the 10-Minute City. When infill developments in a city take must take place to provide enough amenities and housing, a large pressure is put on the available public space. It might result in either the removal of green spaces or the lack of development of new green spaces. To ensure that urban green space will not be at the expense of other urban amenities, such as housing and shops, authors warn that these green spaces should be considered of equal importance as other urban amenities (Haaland & Konijnendijk van den Bosch, 2015). Moreover, the 10-Minute City speaks in terms of density and proximity, which are terms of a quantitative nature. As argued by Byrne et al. (2010), solely implementing those quantitative criteria without considering qualitative criteria may lead to urban green spaces that are not of sufficient quality and that will not be used by inhabitants. When the focus will not be put on facilitating enough green spaces of quality, we will end up with dense urban areas without green spaces, which is a negative influence on the quality of children's lives (Haaland & Konijnendijk van den Bosch, 2015).

Secondly, the 10-Minute City could potentially exacerbate existing inequalities and patterns of exclusion between neighborhoods. When resources and amenities will be allocated at the neighborhood level, it might happen that one neighborhood is advantaged over another one. In this way, existing patterns of inequality may be emphasized, potentially resulting in forms of segregation (Marchigiani & Bonfantini, 2022; Pozoukidou & Angelidou, 2022). Spatial inequalities and spatial segregation within neighborhoods can have a negative effect on social

interactions between inhabitants, potentially decreasing social cohesion (Cassiers & Kesteloot, 2012). Regarding CIM, social ties are considered an important factor. When there is an extensive network of social interactions within a neighborhood, and when neighbors trust each other, they are more easily tended to let their children independently travel through and play in their neighborhood (Lin et al., 2017).

The third risk relates to the distinction of different demographic groups. When not all demographic groups are recognized, for instance, in allocating amenities, it might result in neighborhoods that accommodate one group of people and ignore other groups (Hosford, Beairsto & Winters, 2022; Khavarian-Garmsir, Sharifi & Sadeghi, 2023; Logan et al., 2022). When relating this to child-friendly environments, it is often the case that environments are designed by adults, while the affordances for children are different from adults' affordances (Heft, 1988). So, when children are ignored in the process of implementing the 10-Minute City, it might happen that amenities for children (e.g., playgrounds) are forgotten or underdeveloped, or we might end up with playgrounds that are designed with adults' opinions and needs in mind, instead of children's views on the playground (Morgenthaler et al., 2023).

2.5 The Conceptual Model

In the theoretical framework, the concepts of the 10-Minute City and the CFC have been discussed and the potential benefits and risks of the 10-Minute City for children have been explored. Based on these potential benefits and risks, the conceptual model below (Figure 6) has been established.

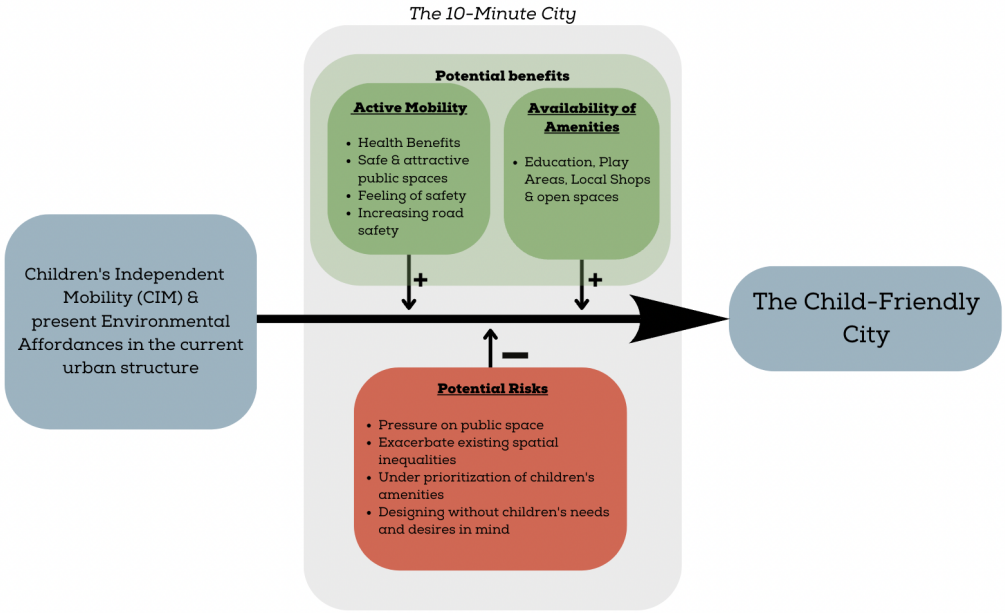

Figure 6. The conceptual model of the effects of the 10-Minute City on developing a CFC (Author, 2023).

The conceptual model shows that there are current practices to increase CIM and environmental affordances, developing in a CFC (Broberg, Kyttä & Fagerholm, 2013). Based on the literature, it is expected that the 10-Minute City can both have a positive and negative on this development. Positive effects include the promotion of active mobility, improvement of health, the increase of road safety and the feeling of safety, the creation of attractive and safe public spaces, and the increase in the availability of amenities for children. However, the 10-Minute City can also bring along negative effects for children. This can be reduced green places due to the pressure on public space, the exacerbation of spatial inequalities, and the under-prioritization or designing children's amenities without taking their needs and desires into account. These negative effects can potentially have an inhibiting effect on the development of a CFC.

3.Methodology

3.1 Research Design

This explorative research makes use of a single case study and a triangulation of the research findings. Triangulation strengthens the research outcome and combining methods will allow for a broader understanding of the topic (Flick, 2018). In this research, the combination of methods allows us to add value to the findings of the document analysis and gives a deeper understanding of the experiences and opinions of the involved actors. Case study research is especially relevant for research that focuses on exploring "*how*" and "*why*" certain social phenomena work the way they do (Yin, 2018). When further specifying this to a single case study approach, we can obtain a deep understanding of the studied case by using several research methods (Lune & Berg, 2017). In the case of this research, we want to obtain a deep understanding of the city of Utrecht, since we specifically want to determine *how* child-friendliness is integrated into spatial policies here and *how* the 10-minute city can support child-friendliness in these specific policies. While this research gives us findings for the city of Utrecht, these results cannot be generalized to other cities. Since case study research is performed in an explicit setting, the results might not be applicable in other cities since they provide us with context-dependent knowledge (Clifford et al., 2016).

To provide the research with structure, four sub-questions are drawn up that together led to an answer to the main research question: "*How can the 10-Minute City concept support the development of Utrecht as a Child-Friendly City?"* (Figure 7). To answer the first and second sub-question, a literature review is conducted. This literature review forms the basis for the document analysis, the interview guide, and the deductive code tree. To answer the third sub-question, first a document analysis, and an explorative interview with a key player in the policy implementation of 'Utrecht: de 10 Minuten Stad' were performed. After which semi-structured in-depth interviews (with an interview guide based on the document analysis), a media analysis, and field visits followed. The fourth question is also answered based on the interviews.

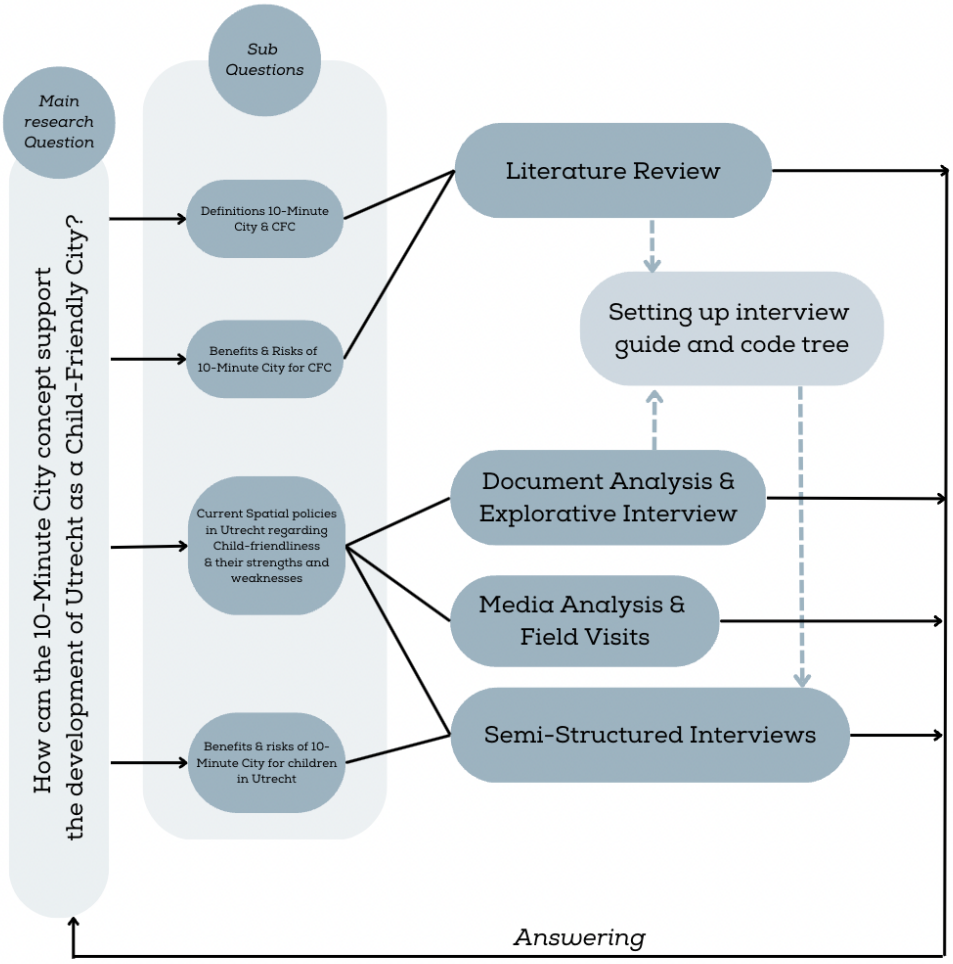

Figure 7. Overview of the used research methods in relation to the sub-questions (Author, 2023)

3.2 Case Selection & Description

The implementation of the 10-Minute City in Utrecht (the RSU 2040), together with Utrecht's aim to become a city in which children can play and move as soon as they step foot out of their house (Gemeente Utrecht, 2022a), makes the city an interesting case study to research the potential strengths of this concept in developing a CFC. The results of this research may help Utrecht in identifying the potential shortcomings of including children in their spatial policies and the way in which they can use their RSU 2040 to strengthen the development of a CFC. Moreover, the results of this research can be a lesson for other cities that are aiming to become CFCs or that will implement the 10-Minute City.

The city of Utrecht is the capital city of the province of Utrecht and is located in the middle of the Netherlands (Figure 8). Over the coming years, Utrecht is expecting a population growth of 350.000 inhabitants in 2018 to 470.000 in 2040. Due to this expected growth, a prognosis has been made that in Utrecht, approximately 60.000 extra dwellings are necessary between 2019 and 2040 (Gemeente Utrecht, 2023). The expected population growth means that we can expect an increase in the demographic group '0-18 years old', as can be seen in Table 3 (Gemeente Utrecht, 2022b). Especially the number of children in the age group 0-3 will increase rapidly with an increase of 26 percent by 2040. For the age group 4-11, we will first see a slight decline which is due to a decline in the age group 0-3 during previous years. However, with the expected growth of the age group 0-3 in the coming years, we can expect a growth of the age group 4-11 from approximately 2030 onwards (Gemeente Utrecht, 2022b).

Figure 8. Map of the location of Utrecht (Author, 2023).

Age	**2022**	**2025**	**2030**	**2035**	**2040**
0-3 years	17.467	17.758	19.478	21.509	22.034
4-11 years	31.199	30.386	31.152	34.357	36.608
12-17 years	21.809	22.734	22.633	22.709	24.197
18-23 years	35.702	37.174	42.102	44.377	44.477
Total population Utrecht	361.742	372.393	409.452	449.156	470.989

Table 3. Expected population growth in Utrecht (Gemeente Utrecht, 2022b; edited by author).

3.3 Data Collection

3.3.1 Literature Review

This research's initial step was the literature review which functioned as the theoretical basis of this research and was used to set up the interview guide and the deductive code tree. The literature review focused on 'Child-Friendly Cities', '10-Minute City' (or '15-Minute City'),

'Active Mobility, and 'Children's Independent Mobility'. For the review, the used databases for searching academic literature were SmartCat, Scopus, and Google Scholar. While searching for relevant articles, the most recent articles were selected to ensure higher accuracy, and the selected articles are mainly written from a viewpoint from Western society, which is most relevant for the case study of this research. Furthermore, the research incorporated grey literature in the form of research reports from independent research organizations, such as the Institute for Transportation & Development Policy (ITDP) and EIT Urban Mobility. The references of the studied literature were also scanned to find more suitable literature, called snowballing. The result of the literature review is a conceptual model, that illustrates the relationships between the studied concepts.

3.3.2 Document Analysis

With a document analysis, relevant institutional documents are analyzed to gain a better understanding of the studied case and its context (Bowen, 2009). It is a suitable method for this research since the selected policy documents can give us insights into (I) the specific spatial policies the municipality of Utrecht has in place to promote child-friendliness, and (II) the real-life examples of the implementation of child-friendliness in spatial policies, and the successes and barriers that are experienced with this. To strengthen the validity and credibility of this research, the document analysis is triangulated with other research methods that are discussed below (Bowen, 2009). The documents were analyzed before conducting the semi-structured interviews since the interview guide was based on this analysis. The analyzed documents in this research include policy documents of the Municipality of Utrecht without an academic basis, which are stated in Table 4.

Name document	**Source**
Actualisatie Groenstructuurplan 2017-2030	Gemeente Utrecht (2018)
Gezondheid voor iedereen: Volksgezondheidsbeleid Utrecht 2019-2023	Gemeente Utrecht (2019)
Groenstructuurplan	Gemeente Utrecht (2007)
Handboek Openbare Ruimte (HOR)	Gemeente Utrecht (2021a)
Kadernota kwaliteit openbare ruimte	Gemeente Utrecht (2016)
Leefbare stad en maatschappelijke voorzieningen	Gemeente Utrecht (2020)
Mobiliteitsplan 2040	Gemeente Utrecht (2021b)
Ruimtelijke Strategie Utrecht 2040	Gemeente Utrecht (2021c)
Spelen in je eigen buurt, ontwerpvisie speelruimte Utrecht	Gemeente Utrecht (2022)

Table 4. Analyzed documents in the document analysis.

3.3.3 Media Analysis & Field Visits

After the document analysis has shown Utrecht's specific performances in child-friendliness, a media analysis and field visits were performed. Those methods allow the developing of a narrative on the perceived strengths and weaknesses regarding those performances. The news articles were gathered via NexisUni and were used to support some of the claims made by respondents in Chapter 4. An overview of the news articles can be found in Table 5. The news articles and interviews provided the researcher with several interesting locations to visit in Utrecht. With field visits to these locations, information that was gathered in the interviews could be verified and the researcher was able to gain a deeper contextual understanding of the researched area. In the result section, pictures of several locations will be shown to illustrate the discussed topic.

News Article	Author	Source
Bewoners moeten initiatief nemen voor leefstraten in de stad.	-	DUIC (2019)
Leefstraat: geen auto's en veel spellen deze zomer in de Duifstraat.	-	DUIC (2016)
Merwedekanaalzone: groene en duurzame wijk in hartje Utrecht.	-	Straatbeeld (2020)
Omwonenden eisen onafhankelijk onderzoek na fataal busongeluk met 7-jarig meisje: ik durf hier nooit meer over te steken.	Nelissen, C.	RTV Utrecht (2023)
Utrecht wil Speelplaats voor ieder kind binnen 200 meter: buitenspelen is essentieel.	Langejan, S.	AD (2021)
Utrechtse conflictspeeltuin Lauwerhof wordt na jaren gebakkelei verkleind.	Van Rossum du Chattel, M.	RTV Utrecht (2023)
Wethouder over speeltoestel in Zuilen: hoop dat buurt in harmonie verder kan.	-	DUIC (2020)
Wie trekt er aan het langste eind in het Utrechtse speeltuintje aan de Lauwerhof?	Verhagen, A.	RTV Utrecht (2022)

Table 5. Analyzed news articles in the media analysis.

3.3.4 Semi-Structured Interviews

Semi-structured interviews allow the researcher to gain more detailed information on the researched topic since it will show underlying reasons which cannot be observed by performing quantitative research (Clifford et al., 2016). In the case of this research, the interviews will allow us to gather the personal experiences and ideas of the interviewees regarding the implementation of the 10-minute city and child-friendliness in the city of Utrecht. Those experiences and ideas can often not be found in the policy documents themselves, so interviews are, together with field visits and the media analysis, a good method to obtain those

experiences and ideas. By performing the interviews in a semi-structured manner, the structure is added to the interviews by using an interview guide, to ensure that the needed data will be collected during the interviews (Clifford et al., 2016). In the case of this research, the semi-structured form of interviewing made sure that all the analyzed documents about the 10-Minute City and child-friendliness were discussed, but there was space and time during the interviews in which interviewees could come up with other items that they considered important for the researched topic. The interview guide (Appendix 1 & 2) was based on the literature review and the results of the document analysis. The interviewees are recruited by using a purposive sampling method so that they could be selected based on pre-set criteria (Clifford et al., 2016). In the case of this research, the interviewees had to be either involved in the RSU 2040, or they had to be an expert on child-friendly environments or be involved in policies regarding play spaces in the municipality of Utrecht. The recruitment took place via LinkedIn and e-mail. In Table 6, an overview is given of the performed interviews together with the information of the respondents.

Interview	Code	Function	Organization	Date
Explorative Interview*	R1	Former Alderman of Spatial Planning *Voormalig Wethouder Ruimtelijke Ordening*	Municipality of Utrecht	March 22nd, 2023
Interview 1	R2	Senior Executive Specialist, Department: Play *Senior Uitvoerend Vakspecialist, afdeling Spelen*	Municipality of Utrecht	May 3rd, 2023
Interview 2	R3	Head Impact *Hoofd Impact*	Jantje Beton	May 8th, 2023
Interview 3	R4	Former member Board of Directors *Voormalig Lid Directieraad*	Municipality of Utrecht	May 8th, 2023
Interview 4	R1	Former Alderman of Spatial Planning *Voormalig Wethouder Ruimtelijke Ordening*	Municipality of Utrecht	May 9th, 2023
Interview 5	R5	Innovation Strategist *Innovatiestrateeg*	Municipality of Amsterdam	May 9th, 2023
Interview 6**	R6	Member/Inhabitant *Lid/Inwoner*	Wijkplatform Overvecht	May 15th, 2023
Interview 6**	R7	Treasurer/Inhabitant *Penningmeester/Inwoner*	Wijkplatform Overvecht	May 15th, 2023
Interview 7	R8	Department Maintenance of Public Space *Afdeling Beheer Openbare Ruimte*	Municipality of Utrecht	May 15th, 2023
Interview 8	R9	Designer & Advisor *Ontwerper & Adviseur*	OBB Spelmakers + Ruimtedenkers	May 17th, 2023
Interview 9**	R10	Advisor Sport Clubs *Sportclubadviseur*	SportUtrecht	May 25th, 2023
Interview 9**	R11	Health & Movement Coach *Beweegmakelaar*	SportUtrecht	May 25th, 2023
Interview 10	R12	Policy Advisor & Project leader Healthy Living Environment *Beleidsadviseur & Projectleider Gezond Leefklimaat*	Municipality of Utrecht	June 1st, 2023

Table 6. Overview of Respondents of the Semi-Structured in-depth interviews.

*Interview 1 was held as an explorative interview to gain more insights into the topic and to obtain the names of other potential respondents.

** Both interview 6 and interview 9 were held with two respondents simultaneously.

3.4 Data Analysis

A thorough analysis of the obtained interview data is essential to the research project and is essential to be able to produce high-quality results and conclusions (Green et al., 2007). This is why the interviews were all audio recorded using the Dictaphone application on an iPhone. These recordings were transcribed using O'Transcribe. After which the transcripts were coded in Atlas.ti. For coding the transcripts, deductive code trees have been set up based on the theoretical framework and the document analysis (Appendix 4). When topics were discussed during the interviews that were not included in the deductive code tree, these topics were added to the inductive codebook (Appendix 5). After setting up the code trees based on the theoretical framework and reading the selected documents, the documents were again analyzed but now coded manually to be able to link the gathered information from the interviews to specific parts of the policy documents.

3.5 Ethical Considerations

While performing research, it is important to behave ethically because the rights of people, communities, and environments that are either involved in or impacted by our research, are protected by ethical behavior. Moreover, by behaving ethically, we gain public trust and trust within research communities (Clifford et al., 2016). Before performing the interviews, a consent form (Appendix 3) was sent out to the interviewees. In this consent form, the aim of the research is described and an explanation of the way the obtained data will be used is given. Moreover, at the start of the interview, the interviewees were asked whether they agreed that their name and function were used in the research and whether the interview could be audio recorded. Before and after the interview, the interviewees were thanked for their time and effort. Also, the transcripts were sent to the interviewees so that they could check these for falsifications or inaccuracies in the content. The transcripts are stored in a secured folder and when the transcripts were adjusted and the data was processed in the research, the audio recordings were deleted.

Another ethical consideration that is worth mentioning is the positionality of the researcher and its potential effect on the research outcome. Examples of personal characteristics of the researcher that can influence the research outcome are gender, age, personal experiences, beliefs, etc. (Berger, 2015). In the case of this research, for example, the researcher's age. The research is largely about the needs and desires of children, while the researcher is neither a child nor a parent. This could be beneficial in the sense that it can offer an objective stance in the research, but it can make it difficult to fully comprehend the real needs and desires of children in Utrecht.

4. Utrecht's Performances in Child-Friendliness & the Potentials of the 10-Minute City

Based on the document analysis, media analysis, field visits, and semi-structured in-depth interviews, Utrecht's performances in child-friendliness are discussed and the main strengths and weaknesses are identified. Moreover, the potential benefits and risks of the 10-Minute City for children in Utrecht are discussed.

4.1 Child-Friendliness in Spatial Policies in Utrecht

This section discusses Utrecht's performances in child-friendliness based on the urban features that influence CIM and environmental affordances (Table 2). Per feature, the relevant spatial policies of the municipality of Utrecht are discussed, after which the strengths and weaknesses of these are discussed. To obtain a clear overview of the strengths and weaknesses, each section ends with a diagram in which qualitative values are given to the topics.

4.1.1 Presence of Amenities for Children in Utrecht

4.1.1.1 Play Spaces in Utrecht

To address play spaces, Utrecht has a specific policy in place called: 'Spelen in je eigen buurt: ontwerpvisie speelruimte Utrecht' (Gemeente Utrecht, 2022a). The policy aims to meet the 'Utrechtse Norm' and to create enough play spaces in each 'speelbuurt'. 'Speelbuurten' are designated areas with defined boundaries (e.g. busy roads), enabling children to move around independently in such an area. Moreover, the municipality conducts scans to assess the available play spaces and their quality. These scans identify areas that require attention, prioritizing the neighborhoods that need to most attention. The municipality acknowledges the pressure on public space and the decreasing number of children playing outside, so they emphasize the importance of providing play spaces near children (Gemeente Utrecht, 2022; R12).

The Municipality of Utrecht aims to adhere to the 'Utrechtse Norm', which is a standard that reserves at least five percent of public space for playing and sports (Gemeente Utrecht, 2021a; Gemeente Utrecht, 2022a; Langejan, 2021). This standard is considered important for ensuring sufficient play spaces by multiple experts on playing, which can be seen in the following quotes of R3: *"In this way, you can put a claim on the fact that there has to be enough space to play for children"* and of R11: *"It is good that there is such a standard because I do believe that those are elements that will be taken away the first"*. However, these experts

also show concerns about the practical implementation and the possible neglect of the quality of play spaces. The first issue that was brought up by one of the experts is that play spaces are theoretically available, but not practically usable due to for example parked bikes: *"If there are squares everywhere in the city on which you can play, but there are many bikes parked there and no action is taken for this, then the space is there in theory, but it is not available in practice" (*R10). The second issue being raised by the experts is the potential neglect of the quality of play spaces, or the unawareness of children about the present play spaces, resulting in the play spaces not being utilized by children. A concrete example given by one of the experts is that small grass fields are also considered play spaces, while children do not recognize them since those are mostly used by dog owners to walk their dogs (R8). The experts argue that there is a need to consider both quantity and quality in creating play spaces.

"We are constantly searching for standards in the Netherlands, but the children in the Netherlands are not searching for standards, they just want to play outside. They need play spaces of good quality, not a set number of play spaces" (R9).

"When you only focus on the number of squared meters of play space… I mean the play spaces should also be safe and attractive for children, and reachable. There is more to it than only the question of whether you reached the standard" (R3).

While there are many play spaces present in Utrecht, there are examples of the removal of play spaces due to nuisance (DUIC, 2020). Several experts on playing state that the municipality has a lot of understanding for inhabitants with complaints, while the interests of children are in those cases ignored (R8; R10; R11). This concern can be seen in the following statement of R10: *When you look at how the city is designed, then a lot is spoken with inhabitants, mainly inhabitants that are afraid of the nuisance. That is leading in how we design places instead of how we invite children and youth in it".*

An example of a playground in which much play equipment will be removed because of nuisance is the playground in Lauwerhof (Figure 9). This playground is in the middle of several residences and was brought up by many respondents and media articles (Van Rossum du Chattel, 2023; Verhagen, 2022). As Respondent 8 elaborates: *"Back in the days there was a playground … which they renovated. it was a mini playground for the smallest kids… However, people complained because there was nuisance of the children,*

Figure 9. Playground in Lauwerhof.

because they yelled at 3 PM, yes that is what children do…. And then the politics got involved."

According to several experts on playing, well-visited place spaces in Utrecht are places where multiple functions come together. As respondent 3 states: *"Places where activities are organized and where you can grab a cup of coffee or something to drink. That is also a meeting place for parents. It is good that there are such places. That is a huge plus in a municipality because they offer more, where children can play longer"* (R3). One example of this that is mentioned often is the Griftpark. where children can play in the playground and where there is a petting zoo, café-restaurant, and skating/sports place for youth (Figure 10).

Figure 10. Impression of the amenities in the Griftpark (f.l.t.r. skate park, restaurant, playground, and mini farm).

These playgrounds allow children to discover more and more play equipment is present due to which children will generally play for a longer time here. The designer of playgrounds (R9) elaborates on such a playground by referring to the meeting opportunities for parents, which strengthens the social ties in the neighborhood. As read in the literature, these social ties are an important element that increases CIM (Broberg, Kyttä & Fagerholm, 2013; Kyttä, 2004).

"A good place is in Lombok, at the Leidsevaart there is a mill and there is a playground. It functions very well… there is a café, things are organized there, and SportUtrecht has a program there. There is a soccer place and a playground. It is not big but there always are people… it functions so well because of the social structure… and it is aligned with wishes of the inhabitants" (R9).

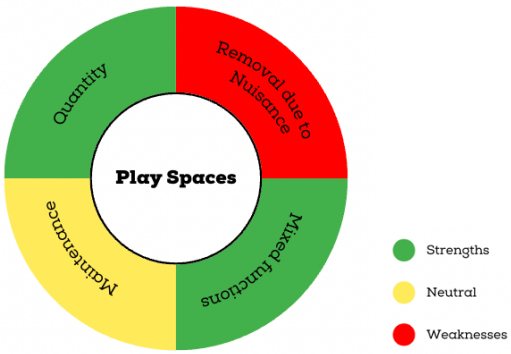

Figure 11. Strengths & Weaknesses of play spaces in Utrecht.

So, while the Municipality of Utrecht strives to meet the 'Utrechtse Norm', experts are critical of this standard being used by the municipality and they show concerns about the quality of play spaces. Raised issues are play spaces being available in theory but not practically usable, the neglect of the quality of play spaces, and the removal of play spaces due to complaints (so prioritizing the complaints of inhabitants over children's needs). Experts highlight the value of play spaces that offer mixed functions and serve as meeting places for parents, increasing social ties in the neighborhood.

4.1.1.2 Participation of Inhabitants in Creating and Maintaining Amenities in Utrecht

In the policy document 'Leefbare Stad en Maatschappelijke Voorzieningen', the municipality of Utrecht highlights that it is important to let inhabitants, so children as well, participate in creating and maintaining amenities in their neighborhood. This allows for customized solutions based on the specific needs and desires of inhabitants (Gemeente Utrecht, 2020). It is notable that in the policy document 'Spelen in je eigen Buurt: ontwerpvisie speelruimte Utrecht', no participation of children is included (Gemeente Utrecht, 2022a; R12).

While no participation took place in the phase of drawing up the policy, it did take place in the implementation phase (R12). According to a policy advisor (R9), the implementation stage is the most valuable phase in which participation can take place. Almost all respondents acknowledge the importance of participation since it will, amongst others, create a sense of ownership of the play spaces, an important aspect according to Morgenthaler et al. (2023), due to which children will be more likely to play here (R8). Also, with participation, more details about people's wishes will be obtained by discussing the plans with them, which increases the quality of the play spaces (R3; R12).

According to the respondents, the municipality does make good use of participation with inhabitants in some cases, but this is mostly done via initiatives of the inhabitants themselves. This can be seen in the following statement by R11: "Now *it is too often with initiative requests of the inhabitants themselves if they want to improve a place. But those ways are not known for everyone… so for children that also play a lot outside, but their parents don't know about these structures, they don't have a say"*. This makes that if participation is included in spatial projects in Utrecht, this is mostly done with inhabitants who know how to reach the local politics, which excludes other inhabitants (R6; R9; R11).

R9, a policy advisor, emphasizes that it is important to include expert knowledge in implementing the policy on playgrounds and that the municipality should not only rely on the

input of inhabitants. An example of a project in which the municipality relied too heavily on the input of inhabitants is given by R9: "*In Leidsche Rijn everyone wanted play spaces for babies and very young children, so all spaces were the same with a seesaw and small slide… so the municipality thought they did the participation very well and all play spaces were according to inhabitants' wishes, everyone was happy. However, five years later the children grew and needed bigger play spaces, but those weren't there because the parents didn't think of this*".

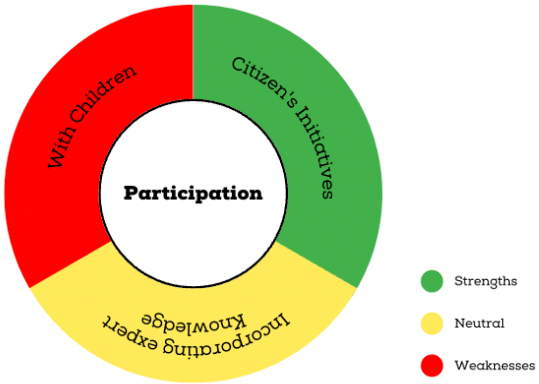

Figure 12. Strengths & Weaknesses of participation in Utrecht.

To sum up, it is striking to see that the municipality acknowledges the importance of participation, but no participation is incorporated in the policy on playgrounds (R9; R12). This can partly be explained by the fact that the municipality deems the implementation phase of this policy the most important phase to include the input of children and inhabitants. Also, much participation is done via citizen's initiatives which can potentially exclude inhabitants. Lastly, interesting is that the municipality sometimes does not incorporate its own expert knowledge, but mostly relies on the input of inhabitants, resulting in playgrounds that are not future proof.

4.1.1.3 The Accessibility of Amenities for children in Utrecht

Utrecht strives to increase the amenities for education, well-being, culture, play, sports, and social interaction in line with the expected population growth. In doing this, they prioritize maintaining a balance between living, working, and recreation (Gemeente Utrecht, 2019). Furthermore, they aim at a balanced spread of amenities over the city, ensuring physical accessibility, and creating inviting places for inhabitants (Gemeente Utrecht, 2020)

In general, the respondents think that there is a good supply of amenities for children in Utrecht. According to them, there are many play spaces, sports amenities, educational amenities, and bigger facilities like Ballorig or the Nijntje Museum (R1; R2; R6; R8, R12).

According to experts on playing, the problem is not necessarily the presence of amenities, but children are not aware of the possibilities in their neighborhood, or children are not stimulated enough to go outside. This can be seen in the following statements.

"I think that the amenities are there, but more must happen to get children outside, the physical aspect isn't enough...." (R3).

"I think that it is not always visible for children that a lot happens, that a lot is organized. There are many places that children can go to, but they don't always know how to find these... There is now a platform 'Ik doe mee in Utrecht', a pilot in Noordwest, to make activities more visible" (R11).

Regarding the balanced spread of amenities over the city, R9 and R12 argue that the municipality is taking good steps in reducing the inequalities in the presence of amenities in neighborhoods. Some respondents do argue that there are still inequalities between neighborhoods in the city, but this is not always considered a bad thing since the supply of amenities should be in line with the demographics and physical features of the neighborhood (R9; R12).

"I think a difference between neighborhoods is good, it is good that there is a logic in this. This is in line with the equality of opportunities that we want to stimulate, and, in some neighborhoods, there are more impulses necessary" (R12).

"In Utrecht, there are unequal investments to ensure equal opportunities in the city. Utrecht is doing well in this, but it has such different neighborhoods... we should look per neighborhood ... to see what is missing for children" (R9).

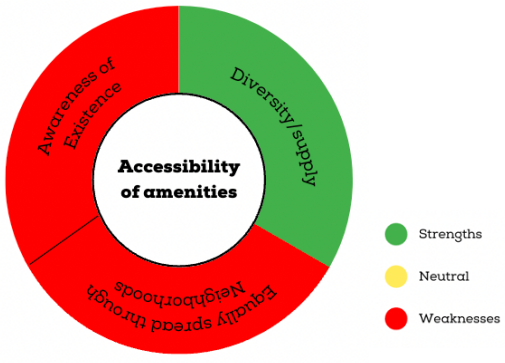

Figure 13. Strengths & Weaknesses the accessibility of amenities in Utrecht.

Concluding, we can see that despite Utrecht's availability of child-friendly services, there is a need to raise awareness of them and encourage kids to use them. The municipality is also working to equalize the allocation of amenities throughout neighborhoods while considering

the neighborhoods' physical and demographic characteristics. Interesting here is that the affordability of amenities was not discussed by the respondents, while this is an element that also influences the accessibility of amenities.

4.1.2 Green Public Spaces in Utrecht

The municipality of Utrecht has high ambitions concerning green public space (Gemeente Utrecht 2016; 2018; 2021a) and they acknowledge that the opportunities to play, do sports, and meet other people in green public space are crucial in a densifying city (Gemeente Utrecht, 2020). Therefore, the municipality strives to create more green within the current urban structure (e.g. create greener playgrounds and schoolyards (Gemeente Utrecht, 2022a)), but it will also create more green areas adjacent to the city and make those areas well accessible for people living in the city (Gemeente Utrecht, 2018).

Despite Utrecht's high ambitions regarding green public space, which is important for children's development (Gill, 2021), a few concerns arose regarding the intensification of green spaces in the city. The first concern is about maintenance, on which R2, who is responsible for the maintenance of playgrounds, elaborates by giving the example of grass being placed as the substrate of many play spaces: "*For grass, more maintenance is necessary, and it will become muddy, which makes the place unplayable for children and parents often don't like children coming home covered in mud". R*8, of the Department of Maintenance of Public Space, elaborates on this by stating: "Not *everywhere where children play, green is desired… that has to do with the maintenance. When you create a beautiful play space with a lot of nature, and it will be used a lot, yeah then soon enough it won't be a beautiful green play space, but a brown one because everything will be covered in mud".*

The municipality's relatively small budget for the maintenance of public space was also mentioned in relation to the maintenance of green public space. In 2021, the available budget, of which a large part is reserved for maintaining green public space, was 55.4 million euros, while the needed budget was 76.4 million euros (Gemeente Utrecht, 2022c). Especially the respondents involved in the maintenance of public spaces believe that the municipality should make more money available to maintain the green public space since the maintenance of these spaces requires both more time and more maintenance workers. This can be seen in the following statement by R8: *"The green ambitions of the municipality are sky high that also implies that more maintenance is necessary, but how will you do that without people? … you need more people to mow the grass, to sow the grass. The market is very tight, there aren't a lot of people available for this".*

Secondly, respondents are concerned about the issue of dog poop on grass fields, which makes them less suitable for children to play on. At a few places, a sign is placed which says that dogs are not allowed on the field (Figure 14), since the field is meant as a play space, but this is not seen often. This is stated by R6: "*There are many places in Overvecht where children can or want to play, but they don't do it because many dog owners use it as a toilet for their dogs*". A potential solution for this is given by R2, who states that some kind of play equipment can be placed on this grass field, to make it clear to children that they can play here and to dog owners that this is not a place where their dog can poop.

Figure 14. Sign that dogs are not allowed at the playground.

The third concern is given by R3 and R10, who state that there is a lot of green public space in the city, but that it serves other purposes than playing or relaxing. These several purposes can be seen in the policies of the municipality as well, in which they discuss the recreational, environmental, and ecological purposes of green.

"But to what extent did they consider that you can actually stay in the green areas? We sometimes see that it is just green to look at, or that it has a climate goal." (R3).

"You often see that there is a lot of attention for the ecological worth of grass. That means that it can be mowed less often and that you then cannot play there because the grass is not suitable." (R10).

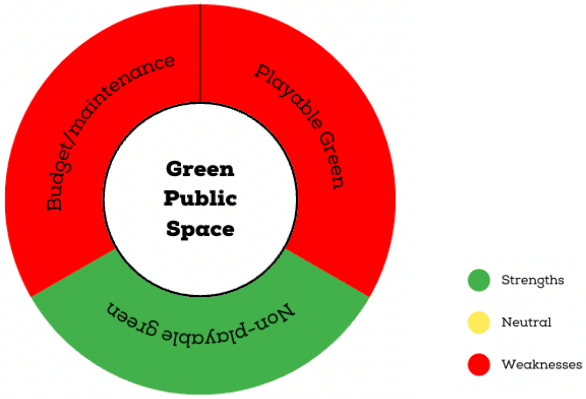

Figure 15. Strengths & Weaknesses of Green Public Space in Utrecht.

The main findings here show us that the municipality has high ambitions regarding green public space, but that respondents state concerns about the maintenance and the available budget for this. Secondly, the problem of dog poop on the grass fields was brought up as a problem often. The last concern is the multiple considerations regarding green that the municipality must consider (green for environmental, ecological, and recreational purposes). According to the interviewed experts, green places for children to play are lacking, while there is a lot of green that serves ecological purposes.

4.1.3 Safety in Utrecht

4.1.3.1 Road Safety

The municipality of Utrecht focuses on promoting active mobility to improve road safety. Cyclists and pedestrians are prioritized, with public transport as an appealing alternative, the maximum speed of cards will be lowered in living areas, and they aim at car-free streets around schools (Gemeente Utrecht, 2019; 2021a). In the 'Mobiliteitsplan 2040' the promotion of active mobility has a central role, emphasizing the accessibility of amenities for pedestrians, with a specific notion of caregivers with strollers (Gemeente Utrecht, 2021b). These actions can improve road and social safety, while also having a positive effect on the environment (Gemeente Utrecht 2019; 2021a; 2021b). Also, there are plans to design low-traffic neighborhoods, of which the Merwedekanaalzone is an example. This neighborhood will be low-traffic, with even car-free places as well. Parking garages will be located at the edges of the neighborhood, shared mobility will be present, and public transport connections will be established to necessary amenities. In the neighborhood, there will be a focus on developing many green areas, which makes it a pleasant environment to cycle or walk (Straatbeeld, 2020).

While the municipality has high ambitions regarding promoting active mobility, which can enhance CIM (Broberg, Kyttä & Fagerholm, 2013), according to R1 and R4, the situation in Utrecht is not safe enough for children to independently ride their bicycles. This is because many traffic rules are being removed to make biking and the fast pace of electric bikes as easy as possible.

> *"Utrecht is not a bike city for 8 minus and 88 plus years. For those people cycling in the city is too dangerous, too vulnerable… for children in the city to cycle without risks… that takes quite a bit… Children and elderly need the protection [*of traffic rules]*"* (R4).

> *"Is Utrecht a child-friendly bike city? No not in rush hour"* (R1).

Another point of concern raised by half of the respondents is the safety of roads leading toward play spaces (Nelissen, 2023). Most respondents think the play spaces themselves are safe enough, but reaching the play spaces is an extensive problem. R3 mentions the many main roads through the city as a danger for children, and R5 talks about the heavy traffic and the fast bicycles being a reason to be afraid of letting their children play outside. A specific example that is mentioned in several interviews, is the traffic situation in the neighborhood Overvecht (Figure 16). According to an inhabitant of Overvecht (R7), it is the mobility in the neighborhood that makes it not safe to let your children play outside.

"In Overvecht you do have quite nice sports parks and amenities. But you must cross an extremely busy road to get there." (R10).

"In Overvecht they made a bicycle street of a large road… to reduce the speed of cars. But despite those changes, I wouldn't let my child cross the road there, it is just too busy. You have those large square roads through the neighborhood. For children, there are almost no safe road crossings." (R7).

Figure 16. Large roads with no zebra crossings leading to the park in Overvecht.

Another initiative to reduce car traffic in the city, mentioned by R3 and R4, is the 'leefstraten' (*Living streets)*. This initiative can be carried out in the streets of Utrecht during the summer holiday (R3) and will create an environment that invites children to play and move, in which meeting up with each other plays a central role (R4). These streets must be initiated by inhabitants and the municipality will help facilitate the living streets (DUIC, 2016; DUIC 2019).

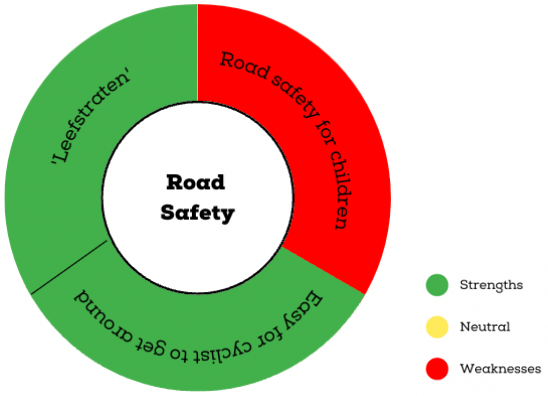

Figure 17. Strengths & Weaknesses of road safety in Utrecht.

The main findings illustrate that the municipality is prioritizing active mobility to improve road safety. However, respondents raised concerns about the safety of the roads for children, especially during rush hour. This is because electric bicycles are going through the city at a fast pace and many rules for cyclists were removed, resulting in chaotic traffic situations. Especially children not able to reach playgrounds safely, due to heavy traffic and inadequate road crossings, is stated as a major concern. Initiatives such as 'Leefstraten' are mentioned as ways to reduce car traffic and create child-friendly environments.

4.1.3.2 Perception of Safety

The respondents draw attention to Utrecht's shortage of facilities for young people (12 to 18 years old). The municipality acknowledges the value of offering areas for youth to hang out and play sports (Gemeente Utrecht, 2019), but the respondents are dissatisfied with the options (R2; R3; R8; R9). This causes problems like youth gathering in playgrounds, frustrating inhabitants, and affecting the perceived safety of these areas. R9 brings up the fact that these problems have caused children to be dislocated.

> *"The 12 – 18-year-olds in Utrecht have very limited space, socially and physically. They [youth] are sent away often…. In many parks are many playgrounds, but the youth deserve a lot of attention in this regard"* (R9).

R9 elaborates on this by stating that if a person does not feel socially safe somewhere, that person will not go to the specific place. Multiple respondents agree that stronger social ties increase the feeling of safety, which positively affects the extent to which children play outside (and are allowed to go outside). This phenomenon is confirmed by the literature of this research (Broberg, Kyttä & Fagerholm, 2013; Kyttä, 2004).

"In general, you see that if people feel involved and safe and if they know each other… that there is a larger feeling of safety and children will play outside more. If there are other children, then more children will follow. That is important" (R3).

Another problem that arose was the perception of unsafe playgrounds. An example is given by an inhabitant of Overvecht (R6), who states that wooden equipment is great for children, but since parents perceived it as unsafe, it was removed. More respondents elaborate on this by stating that parents are afraid that their children will come home covered in mud, or that they will fall off the play equipment. Those parents report the perceived unsafety at the municipality, and with the voice of those scared parents being dominant, it results in traditional playgrounds with just a few basic play elements (Figure 18), in which children are restricted in adventurous play (R2; R6; R8; R9). This results in 'places for children' instead of 'children's places', making it more likely for children to not use this playground, which therefore limits the options for children to play outside (Morgenthaler et al., 2023).

Figure 18. Example of a basic playground that is not adventurous for children.

"So inhabitants want to protect their children too much and they deprive children of risky playing. With that, they create unsafe children, because they can't do anything independently. They think they are safe until they are released at a certain moment…And those parents, are often the parents who know how to find the municipality" (R9).

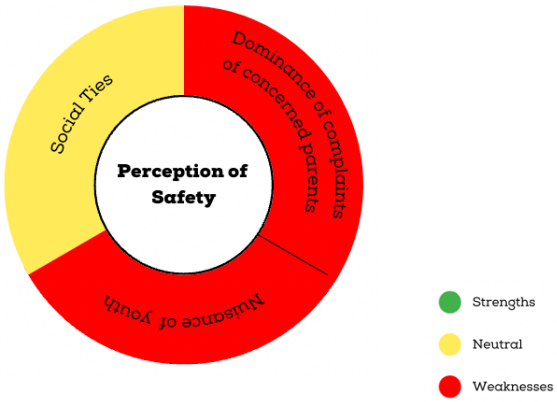

Figure 19. Strengths & Weaknesses of the perception of safety in Utrecht

To sum up, there is a lack of amenities for youth, resulting in them gathering in playgrounds. This results in a feeling of unsafety for inhabitants and children are dislocated from playgrounds. Respondents acknowledge that developing strong social ties is important to

increase the feeling of safety. Lastly, regarding play equipment in playgrounds, there is a dominance of complaints from concerned parents, resulting in dull playgrounds in which risky play is not stimulated.

4.2 The 10-Minute City in Utrecht

The municipality of Utrecht has established the 'Ruimtelijke Strategie Utrecht: 2040' (RSU 2040) to ensure a livable city that accommodates the expected population growth. The 10-Minute City is central to this strategy, aiming at developing multiple new city centers (Figure 20) (Gemeente Utrecht, 2021c). The designated locations for these centers are areas where a lot of development is already taking place and/or areas with a lot of free space. These centers present a mix of living, working, amenities, and green public spaces. This ensures that more amenities will be in closer proximity to Utrecht's' inhabitants, hence, a shorter travel time for the residents to those destinations (Gemeente Utrecht, 2021c).

Figure 20. Map with the current city center of Utrecht on the left & map with multiple new city centers on the right (Gemeente Utrecht, 2021).

To ensure that a diverse mix of amenities will be created, and no amenities will be forgotten, the municipality of Utrecht developed the 'Barcode' (Figure 21). This barcode shows, amongst others, the needed amount of green public space, the number of schools, and the number of sports facilities per number of residences. With the current pressure on public space, the barcode should ensure a diverse mix of amenities (Gemeente Utrecht, 2021c; R1; R5).

Figure 21. Utrechtse Barcode (Gemeente Utrecht, 2021c).

The RSU 2040 aims at shifting the focus from cars to prioritizing active mobility and the use of public transport. It emphasizes the importance of investing in a safe, accessible, and space-

efficient network for pedestrians and cyclists. To increase the possibilities for using public transport, and to relieve the pressure of Utrecht Central Station, a new public transport network will be created at the edges of the city. In this network, it will be easy to transfer between different modes of transportation (Gemeente Utrecht, 2021c; R4).

Besides creating new city centers and focusing on mobility, the RSU 2040 Utrecht wants to foster social relations between residents. The idea is to prioritize cyclists and pedestrians and to create green and attractive public spaces to offer more spaces where residents can interact (Gemeente Utrecht, 2021c; R4; R5).

4.3 The Potential Benefits of the 10-Minute City Concept for Children in Utrecht

This section elaborates on the potential benefits of the 10-Minute City for children in Utrecht. As discussed in Chapter 2.4, the main elements of the 10-Minute City that benefit children are the increase of amenities and the promotion of active mobility. Therefore, this chapter discusses how those elements can contribute beneficially to the perceived strengths and weaknesses discussed in Chapter 4.1. In Table 7, a schematic overview of the potential benefits (discussed in Chapter 4.3) and risks (Chapter 4.4) of the 10-Minute City is given.

Specific urban features that influences child-friendliness	Discussed strengths & weaknesses	Benefits of 10-Minute City	Risks of 10-Minute City
Play spaces	Quantity		
	Mixed functions	X	
	Maintenance		
	Removal due to nuisance	X	
Participation	With children		
	Citizen's Initiatives		
	incorporating expert knowledge		
Accessibility of amenities	Diversity & Supply		
	Awareness of amenities	X	
	Equally spread through neighborhoods	X	X
Green Public Space	Maintenance	X	X
	Non-playable green	X	X
	Playable green	X	X
Road Safety	Leefstraten	X	
	Easy for cyclists	X	
	road safety for children	X	X
Perception of Safety	Nuisance of Youth	X	X
	Social Ties	X	
	Dominance of complaints of concerned parents	X	

Table 7. Overview of the potential benefits and risks of the 10-Minute City for children in Utrecht.

Interesting here is that participation was not discussed often in relation to the 10-Minute City in Utrecht. This may partly be explained by the fact that no persons involved in the participation trajectories of the municipality were interviewed. A policy maker (R12) and policy advisor (R9) argue that the most valuable stage for participation is the implementation phase instead of the phase of drawing up the policy. In this research, there were no respondents included that are implementing the policies, which is why information regarding participation presumably is missing.

4.3.1 Increase of Amenities in Utrecht

As can be seen in Chapters 4.1.1.1 and 4.1.1.3, the overall feeling of the respondents is that there are already enough amenities for children. This can for instance be seen in a statement made by R8: *"Playing has always been a kind of 10-minute thing. Because… a playground… Utrecht has an action radius of 200 – 400 meters in which a child should be able to walk from its home… that is not even 5 minutes. So, I don't believe it is very relevant for playing"*. While the number of and the distance to playgrounds are considered sufficient, there are several other aspects to which the increase of amenities within the 10-Minute City can contribute. Those are discussed below.

4.3.1.1 Increasing the Number of Amenities for Youth

While there are enough amenities for children, this is different for other age groups. As mentioned in Chapter 4.1.3.2, there is a lack of amenities for youth in the city of Utrecht. Resulting in youth hanging around in playgrounds, causing displacement of children from playgrounds to other areas (R2; R3; R8; R9). As two experts on playing (R3; R8) mention, the 10-Minute City will not be relevant for children in the case of adding amenities. But they do argue that it will be relevant for youth (12–18 years old) since amenities for them are lacking, leaving youth with no place to gather. Especially sports facilities are mentioned by the experts as suitable amenities for youth to meet each other. Within the RSU 2040, the municipality states that enough space will be reserved for sports and that those places are spread over the city and accessible to everyone (Gemeente Utrecht, 2021c; R4). R8, an expert on playing, elaborates on this by stating: *"I think it is mostly relevant for the older youth. And then specifically for the special breeches of sports. Think for instance about the skaters, that is a group, yes, they must travel a lot for it [for a place to skate]"*.

So, increasing the number of amenities in general, with a specific notion in the RSU 2040 to increase the available sports amenities, will increase the number of amenities for youth. This

will potentially solve the problem of the nuisance of youth in playgrounds, which can reduce the displacement of children from these playgrounds.

4.3.1.2 Multi-Functional Use of Amenities

In the RSU 2040, the multi-functional use of space and facilities is an important notion (Gemeente Utrecht, 2021c; R4). With this, several functions are combined in one place, which saves space and creates a livelier city (Gemeente Utrecht, 2021c). During the interviews, several ways of multifunctional use of space were discussed by the experts on playing, which are already put into place in Utrecht, but to which the respondents involved in writing the RSU 2040 argue that the 10-Minute City can positively contribute.

As described in Chapter 4.1.1.1, respondents argue that playgrounds that serve multiple functions, e.g., a meeting place for parents and sports facilities, are a great success in Utrecht. Those places attract more children and parents, and they are perceived as livelier and more attractive places. R11, a health and movement coach, elaborates on this: *"There are great examples in other cities where a park is combined with playing, and doing sports, and with meeting people, etc. Where you thus bring several interests together in one place".*

The second example of a multi-functional use of amenities is opening schoolyards after school. In some places, this is already done in Utrecht since schoolyards take up a lot of space, and this space can now be used to create more play spaces in the city (R1; R3; R4; R5; R6). This approach has several benefits according to respondents. It will decrease the distance that children must cover to get to a play space, and it is a familiar place for children to go to.

"When you design it in a good way, that will cause a decrease in distance of course. They are already located in the neighborhoods" (R10).

"It is important that a square at a school is an anchor point in the neighborhood where children grow up and spend a lot of time. It is in their DNA, and it makes the place a familiar place" (R12).

Thirdly, specific elements in playgrounds and parks can be used multi-functional as well. In doing so, existing elements in public spaces can serve multiple functions without needing to create more (Figure 22). This is explained by Respondent 9, designer of and advisor on playgrounds: *"We stick moving signs on existing elements in public space. So, you don't have to create separate fitness equipment, but let's say there is a bench, and*

Figure 22. Example of adding a 'movement' element to a park.

you stick a sign on it with the movements people can do there. With that, it suddenly becomes moving equipment".

So, in short, several examples of successful multi-functional use of places are mentioned by inhabitants and experts on playing (R3; R6; R11). The respondents involved in setting up the 'RSU 2040' (R1; R4; R5) argue that the 10-Minute City can contribute to these existing practices since the multi-functional use of amenities is an important notion. By creating more multi-functional play spaces, additional play spaces can be created without needing more space.

4.3.1.3 Increasing Awareness of Amenities

As discussed in Chapter 4.1.1.3, the problem is not necessarily that there are not enough amenities for children, the problem is more that children are not aware of those amenities, or they do not know what to do there.

Within the 'RSU 2040' there is a focus on creating societal amenities (e.g. neighborhood centers) which are well accessible for inhabitants, and which invite inhabitants to meet up with each other (Gemeente Utrecht, 2021c). According to two experts on playing (R3 & R8), those societal amenities and social partners (such as SportUtrecht), are the way to make children familiar with the opportunities they have in their neighborhood. Respondent 8 states that those social partners are important since they can organize initiatives in the neighborhood to draw children to the amenities: "*The 10-Minute City can contribute, but then I don't speak about the physical play spaces…. I mainly speak about the other amenities and what social partners can do. What can initiatives do to draw more children to their buildings?"* (R8). R3 elaborates on that: *"By using neighborhood volunteers or coaches we can teach children… for instance playing hide and seek… to make them come home with fun stories… that will stimulate children to go outside".*

So, with the notion in the RSU 2040 of creating more societal amenities, the awareness of amenities and activities can potentially be improved. To reach this, the municipality and social partners should actively use the creation of new societal amenities as a platform to organize initiatives to increase awareness.

4.3.1.4 Addressing Inequalities between Neighborhoods

As discussed in Chapter 4.1.1.3, there are differences between neighborhoods in Utrecht regarding the spread of amenities. These inequalities are not always considered bad since the supply of amenities should be in line with the characteristics of the neighborhood. With the RSU 2040, the municipality of Utrecht aims at developing high-quality amenities on the

neighborhood and city levels. With the RSU 2040 the present amenities in neighborhoods can be analyzed, to see what amenities are missing, which is stated by the Innovation Strategist of the RSU 2040: *"The RSU thinks about what is possible and how the neighborhood is organized. And does it comply with the 10 minutes or not? Or are we a big residential neighborhood without other amenities? How can we solve that [the lack of other amenities]?"(R4).* By doing this, the municipality wants to limit the inequalities between inhabitants by allowing them the same opportunities regarding amenities (Gemeente Utrecht, 2021c). Ensuring a diverse supply of amenities in each neighborhood also implies amenities for children, such as schools and playgrounds, so that children throughout the whole city have the same opportunities (R11).

In short, most respondents argue that the 10-Minute City can contribute positively to the existing inequalities between neighborhoods since the concept can ensure equal opportunities for inhabitants (and children as well) regarding the available amenities. However, these results only elaborate on the inequalities between neighborhoods and not on inequalities within communities. From the literature, it is seen that especially inequalities within neighborhoods have a negative effect on social interactions, potentially decreasing CIM (Cassiers & Kesteloot, 2012; Lin et al., 2017). It would therefore be interesting to see how the 10-Minute City can contribute to inequalities within neighborhoods since this is expected to have the most influence on CIM.

4.3.2 The Promotion of Active Mobility

4.3.2.1 Improving Road Safety

While Utrecht is already making great steps in the promotion of active mobility, there are still many dangerous traffic situations for children in the city (as can be read in Chapter 4.1.3.1). This is why almost all respondents argue that the 10-Minute City can hugely contribute to road safety in Utrecht. As R4 states: *What you now see is that the RSU pushes a bit to the fact that more space should be available for quiet places and for slower traffic flows. That is exactly the tilt that should come here".* By switching the focus from cars to active mobility, the roads towards play spaces are expected to become safer, so that children can independently reach these places (R3). R12 states that the promotion of active mobility will "*hugely increase the action radius"* of children, in other words, increases CIM (Broberg, Kyttä & Fagerholm, 2013; Kyttä, 2004.

Besides the increase in CIM, the promotion of active mobility will increase the number of potential play spaces children can use as well (so increase the environmental affordances

(Broberg, Kyttä, Fagerholm, 2013; Kyttä, 2004)). R12, a policy maker, relates this to the 'Speelbuurten' that are mentioned in Chapter 4.1.1.1: "*for example the … 'Speelbuurten', where a busy road forms a barrier and thus a boundary between two neighborhoods. When those neighborhoods are not that big and there are not many children living in this neighborhood, you would like to see these neighborhoods as one. So, when you can remove that barrier, you will have the impact you are looking for. You make a play space in one neighborhood available for children of the other".*

In Chapter 4.1.3.1, the 'Leefstraten' were discussed. Those are according to several respondents a great imitative and the promotion of active mobility, and therefore a reduction in car use, can ensure more of these streets. Moreover, the 'Leefstraten; are only seasonal (during the summer holiday break), so by promoting active mobility, these streets can hopefully exist throughout the whole year. R5 and R7 elaborate on this:

"By having places where no motorized traffic is allowed, it will be safe to stay there, it invites, and it challenges to be there more" (R5).

"You see it in our neighborhood, a lot of the streets have a dead end. You see that children make use of that. Then they will start playing on the street again" (R7).

In short, with the central aim in the RSU 2040 to promote active mobility, roads toward play spaces are expected to become safer, due to which children can potentially reach more play spaces. Moreover, car-free streets like the 'Leefstraten' can be enhanced by making this a yearly initiative. All those stated benefits of the 10-Minute City on road safety are confirmed by Broberg, Kyttä & Fagerholm (2013); ITDP (2022); Kyttä (2004).

4.3.2.2 Enhancing Social Ties in Utrecht

As stated in the RSU 2040 (Gemeente Utrecht, 2021c), social interactions in neighborhoods in Utrecht will be increased in multiple ways. First, through the promotion of active mobility and the proximity of amenities, inhabitants are expected to use their cars less. Allowing them to meet each other while walking through their neighborhood (Gemeente Utrecht, 2021c). R9 elaborates on this: *"The proximity of amenities and the more human nature of public space, people will be more human, less anonymous put away in car traffic and working elsewhere, so people will have connections, they are socially stronger connected. That contributes to social safety".*

Second, there will be a shift of focus from public space used to move oneself from point A to B, to a public space to stay and meet people (Gemeente Utrecht, 2021c). The focus on creating a green and pleasant public space to stay in will increase and stimulate the social interactions

between inhabitants, which can enhance social ties and the feeling of safety (R4; R5). According to several respondents, this expected increase in social interactions has a beneficial effect on the extent to which children are allowed to play outside. This can be seen in the following statements:

"…Where there is a stronger social structure… everyone knows each other there. Then they say, yes, my child can play here because Henk from around the corner, he will watch my child… the effect of a child being allowed to play outside, purely has to do with whether neighbors know each other" (R9).

"That people know who lives in their neighborhood and when something is safe or not. The involvement between neighbors, hugely contributes to the safety" (R4).

"*What is important as well, is to keep meeting each other and knowing what is happening. The social cohesion in a specific neighborhood, often contributes to a more positive experienced social safety"* (R11).

A specific beneficial effect of stronger social ties can be a decrease in reports of nuisance (as discussed in Chapter 4.3.1.2). Several respondents stated that increased social interactions can contribute to more tolerance and acceptance among inhabitants. When inhabitants tolerate each other more, it could be that less nuisance is experienced by inhabitants. This can be seen in the following statement:

*"When a field is not necessarily named a soccer field, but children do play soccer there, it can be experienced annoying in surrounding houses. But that is more a task for social cohesion. So, getting to know each other, know what each other's needs are, and tolerate each other more" (*R11).

So, by promoting active mobility and creating pleasant public spaces to stay in, it is expected that inhabitants will use their cars less. Since inhabitants are now expected to spend more time outdoors, more social interactions will occur and this can potentially lead to stronger social ties, more trust, and more tolerance. As a result, parents might lead their children to play outside more and a reduction in nuisance complaints can be expected. Those findings are confirmed by Broberg, Kyttä & Fagerholm (2013); ITDP (2022); Kyttä (2004); Urban Mobility (2022).

4.3.2.3 Improving Green Public Space

One of the big challenges in Utrecht is to maintain and improve the current green structure in the city. With the aim of the RSU 2040 to create more quiet places in the city and more space for green structures (R4), more space to move starts arising, due to which more space to play arises for children (R10). The importance of reserving enough green public space can be seen

in a statement of R5: *"The densification of the city … more people will be in the same place, but we don't have extremely more available space… So, it is very important to create a very good public space. The green structure is the most important aspect of this."*

According to R4, greening the city can be combined well with recreation and playing, and it can even strengthen each other. An example of where green and playing can strengthen each other is given by R8: *"You can always use playgrounds very well for green goals. I mean a playground is eminently a place to plant an extra tree, even if it is only for climate adaptation and creating shade. I think that this is how Utrecht should deal with it. Utrecht really should turn the complexity into creative things".*

Almost all respondents do agree that improving the green living environment, which is an important aspect of the 10-Minute City, is beneficial for children's development. Specific benefits for children can be seen in the following statements:

"The green structure does not only have a connecting element and a health element. It contributes to heat stress… and to space for relaxation" (R5).

When you are in contact with nature as a child… so when you cuddle animals at the petting zoo, when you put your hands in the soil, put soil in your mouth, such things, you will become more resilient in your system" (R9).

A green living environment is proven to be a healthier environment than a stone, gray one. This also applies to children. You learn more about nature, with nature. It stimulates more" (R12).

Besides the abovementioned benefits of a greener living environment, the 10-Minute City can contribute to the experienced weaknesses regarding green spaces in Utrecht (Chapter 4.1.2). From the discussed information in Chapter 4.1.2, it becomes clear that the available budget for green, the maintenance of green, and the lack of diverse purposes that are served by green public spaces, are the main concerns. Especially the latter concern can be addressed by the 10-Minute City according to some respondents. For example, R1 speaks about the multiple scales on which the municipality wants to improve the green structure: *"What we have of the green space, we will qualitatively improve that. That already starts at street level… so fewer parking spaces and more green… on the neighborhood level you want to go to the improvement of parks and on the city level to the very green areas, and recreation areas, to the outskirts of the city. You want to get those outskirt regions to the inner city".* In the RSU 2040, there is elaborated on these multiple scales. On the level of individual houses, rooftops, facades, and gardens will be greened, for ecological and climate purposes. On the level of the

streets, a focus will be on green squares, play spaces, and parks, so that residents have a place to meet each other, play, and relax. On the level of the city, routes to bigger parks and green areas outside of the city will be improved, to make it easier for residents to reach these areas (Gemeente Utrecht, 2021c). When this focus on diverse green public spaces will be maintained, this can potentially solve the concern of the lack of diverse green spaces.

The key findings here show us that it is a challenge in Utrecht to preserve and improve green public spaces. The RSU 2040 aims at improving the number of quiet and pleasant green spaces, which benefits children's development and well-being (which is confirmed by ITDP (2022); Yuniastuti & Hasibuan (2019)). By Utrecht's aim at creating distinct green spaces on various levels, from individuals' homes to streets, and city-wide routes, the 10-Minute City can address the weaknesses in Utrecht's green spaces.

4.4 The Potential Risks of the 10-minute City Concept for Children in Utrecht

Besides the many benefits of the 10-Minute City for children in Utrecht, the respondents also came up with several risks. Being: the fast pace of bicycles, the pressure on public space, the challenges around opening school yards, and creating a monotonous environment.

4.4.1 Fast (Electric) Bicycles & Chaotic Traffic Situation

The promotion of active mobility might bring along chaotic traffic situations, which can be dangerous for children. A former member of the Board of Directors of the municipality (R4) elaborates on this by saying that the municipality scratched many rules for cyclists so that cyclists could get around easier, which would promote cycling. However, soon they found out that children need those rules since they protect children from unsafe situations. This can be seen in the following statement: *"The rules are not for the people who can oversee everything easily. Yes, those people are very dominant in the city, also on their bikes… but all the children and elderly need protection. So, you carefully must think about whether it is smart to comply with the big majority when you are focusing on systems that are there to create a city for everyone… There is often said that we are an inclusive city… but you then must make rules that can decrease the space for people who don't need the rules"* (R4). In the city, more and more electric bicycles are being used which go through the city at a fast pace. This fast pace of (electric) bikes and the chaotic traffic situations this can bring along, is mentioned a few times by respondents, as can be seen in the following statements:

"When we decrease the car-use, it won't be a child-friendly cycle city soon. That has to do with the busyness and the fast bikes and electric bikes. So, we do try to get the mopeds off the cycle paths, which makes cycle paths less dangerous for the normal cyclists" (R1).

"What we are doing now is the same as we did with the car. We make sure that everyone can ride their bike as fast as possible through the city, that's what's happening right now with all the bike highways. And yeah, with that we make the bike the new car, which is very stupid." (R9).

"And at the same time, it is a risk because the bike is such a success here, that they displace pedestrians which lead to dangerous situations because they are in each other's way" (R4).

4.4.2 Pressure on Public Space

Besides the challenges around promoting active mobility, the pressure on public space is mentioned a lot by the respondents. Most of them argue that the municipality has too many ambitions compared to the available space to achieve those ambitions (R10). Especially sports fields are mentioned as the biggest challenges. Those are often relatively big, which makes it hard to create them within the 10-minute radius (R1). Most respondents are afraid that this pressure on public space will reduce the green public space, which is confirmed by Haaland & Konijnendijk van den Bosch (2015). This can be seen in a statement of R8: *"With the 10-Minute City, we must put a lot of amenities in the city. Everything needs to be nearby; therefore, we won't have space for green anymore. We can better have widely set up cities because then we have more green and we can live in between the green…. But the space we gave to mobility takes a lot of space… if you look at the space that is there in Utrecht to make sure that people can reach destinations, that is immense. While the space to make people stay at a certain spot is way smaller"*. While green public space has a lot of benefits, such as climate adaptation, health benefits, and a decrease in heat stress, it is seen as the largest expense (R5). This is confirmed in the following statement of the former Alderman (R1): *"A residence is profitable, a shopping area is profitable… such a development can carry its own, but with green that is of course never the case. Green doesn't pay itself"*.

4.4.3 Vandalism and Nuisance on Schoolyards

As discussed in Chapter 4.3.1.2, opening schoolyards outside school hours for children as a public play space can increase the number of play spaces in neighborhoods. While the benefits do outweigh the challenges according to respondents, opening school yards may lead to forms of vandalism and an increase in nuisance complaints (R1; R4; R5; R9; R12). This can be seen in a statement of R5: *"…Nuisance, that is an important one. You don't hold control over people… Destruction, yelling, such things, hanging around. I mean everyone should have a place of course… but people look for the places where there is the least surveillance. And*

schoolyards, they are often in the shadow edge of course". Related to the potential chance of vandalism, a policy maker (R12) explains that it is difficult to determine who is responsible for the schoolyard in legal terms. According to this respondent, it is hard to determine who needs to do something when vandalism happens and who must pay for the damage. Moreover, R9 is worried that opening schoolyards as play spaces may lead to the fact that children are not playing at various playgrounds anymore, but that they will stick to only the schoolyards. R9 states: *"The disadvantage is that children only see one place during the day… they are then dependent on that one place and explore less in the neighborhood… Children will be brought to school, and they will stay there, they are there from 8 AM till 6 PM, so for ten hours they are at the same spot… that is not fully free play".*

4.4.4 Creation of Monotonous Neighborhoods

Some respondents mention the fear of creating monotonous neighborhoods when a one-size-fits-all approach is chosen when carrying out the vision of the 10-Minute City (R4; R9; R10). R4, innovation strategist of the RSU 2040 elaborates on this: *"It could be a risk that we will organize it too systematical and monotonously everywhere and that all neighborhoods should be the same".* R4 also states: *"But earlier I said something about how not all neighborhoods should be completely equal. And there are also differences between neighborhoods in the city in how mobile people are and how and where they work, whether they work in the city or not, or if they often come to the city".* According to R10 investments should be made in the disadvantaged neighborhoods, instead of making the same investments in every neighborhood. R10 continues by explaining that a dialogue with caregivers and children should be held, to determine the exact investments and developments that should happen in a neighborhood.

5 Conclusion

5.1 Key Findings

This research explores the potential benefits of the 10-Minute City on the child-friendliness of the city of Utrecht. The central idea within the 10-Minute City is that in urban regions, inhabitants should be able to access all their basic amenities within ten minutes walking or cycling. To achieve this, active mobility is promoted, and access to amenities is enhanced (Moreno et al., 2021). The expectation is that the 10-Minute City benefits CIM and the environmental affordances, which enhances the child-friendliness of an urban environment according to the Bullerby Model (Broberg, Kyttä & Fagerholm, 2013; Kyttä, 2004). Specific features that influence these are the promotion of active mobility, the presence of green public space, the density of amenities, strong social ties, the feeling of safety, and safe traffic situations.

Combining theories on child-friendly environments with principles of the 10-Minute City, this research identifies several potential benefits and risks of the 10-Minute City for children. First, the promotion of active mobility requires safe and attractive places, which are important for children's development (ITDP, 2022; Yuniastuti & Hasibuan, 2019). Second, the reduction of cars benefits children's health and can ensure safer traffic situations (Gill, 2021; ITDP, 2022). Third, since amenities will be near residents' homes, more social interactions between neighbors can occur, potentially resulting in more tolerance and trust, and an improved feeling of safety (Broberg, Kyttä & Fagerholm, 2013; Kyttä, 2004). However, a number of risks for children's development might occur due to the 10-Minute City. The increase in amenities might put a large pressure on public space which can be detrimental to green public space which in turn decreases the opportunities for children to play (Haaland & Konijnendijk van den Bosch, 2015). Moreover, due to the one-size-fits-all approach of the 10-Minute City, existing inequalities between neighborhoods might be exacerbated (Marchigiani & Bonfantini, 2022; Pozoukidou & Angelidou, 2022), and it might happen that the present amenities in the city do not accommodate all demographic groups. The latter might result in a lack of amenities for children or amenities for children that are designed by adults without taking children's needs and desires into account (Morgenthaler et al., 2023).

These theoretically identified benefits and risks have been empirically studied in the city of Utrecht, which has the vision to become a 10-Minute City by the year 2040. The research is performed by doing a literature review, document analysis, media analysis, field visits, and semi-structured interviews. In the following paragraphs, I will present the main conclusions based on the two aspects of the 10-Minute City that influence child-friendliness: access to

amenities and the promotion of active mobility. Per urban feature, Utrecht's performance on child-friendliness and the potential risks and benefits of the 10-Minute City to the performance of the features are discussed (Table 7).

Overall, respondents were positive about the access to amenities in the municipality of Utrecht, which has a beneficial effect on both CIM and environmental affordances (Broberg, Kyttä & Fagerholm, 2013). The results show that the playgrounds with multiple amenities are well-visited by children and parents (such as the Griftpark in Figure 9). A good example to create more play spaces is that several schoolyards in Utrecht are opened as play spaces after school hours. However, there are some concerns regarding the access to amenities in Utrecht that may prevent children from actualizing their environmental affordances (Kyttä, 2004), such as the removal of playgrounds due to nuisance complaints, focus on quantity over quality, grass fields primarily being used for dog walking, inequalities between neighborhoods, and children's unawareness of the present amenities. Also, there are examples in Utrecht where adventurous play equipment was removed since some concerned parents perceived it as unsafe. The voice of these concerned parents was dominant here, resulting in the play equipment being replaced by less adventurous equipment, which leads to places for children designed by adults and children being less likely to use them (Morgenthaler et al., 2023).

In line with the 10-Minute City, the municipality of Utrecht is focusing on the supply and equal spread of amenities in multiple policy documents. The increase in access to amenities in Utrecht is expected to benefit the supply of amenities for children (Kyttä, 2004). The results, however, show that respondents feel that this supply is already sufficient, while the supply of amenities for other age groups, youth in this case, is lacking, resulting in youth hanging around at playgrounds. From the results appears that especially the presence of youth at playgrounds, due to a lack of amenities for them, is a problem. Their presence might make parents perceive the playground as unsafe and can result in hesitancy to let their children go there, which prevents children from actualizing their affordances (Broberg, Kyttä & Fagerholm, 2013). So, increasing the amenities for youth might have a beneficial effect on children being able to actualize their affordances. Another additional benefit found in the empirical research is the notion of creating more mixed-use amenities. This can strengthen the successes that can already be experienced in Utrecht, such as the mixed-use playgrounds in several parks which boosts the quality of the park, and the opening of schoolyards to increase the number of play spaces. Another benefit that was not expected is that the 10-Minute City can be used to increase children's awareness of amenities. Besides the planning aspect of the concept, it can be used as a communication strategy and the number of societal amenities can be increased to draw children to these amenities and learn them about the possibilities in their neighborhood. The

last benefit, not specifically mentioned in the literature, is that increasing amenities throughout the whole city might solve the inequalities between neighborhoods currently experienced regarding the supply of amenities.

Yet, increasing the supply of amenities in support of the 10-Minute City may pose risks to the child-friendliness of Utrecht. Namely, based on the findings of Haaland & Konijnendijk van den Bosch (2015), increasing amenities puts a lot of pressure on public space, which may result in priority being given to the development of for instance houses and shops over green public space since those are more profitable. This may counteract Utrecht's high ambitions for improving green public space. Several respondents already feel like green public spaces in Utrecht are under pressure since they believe that those are mostly serving ecological purposes or are used by dog owners to walk their dogs. This results in less 'playable' green, therefore potentially restricting children from actualizing their affordances (Kyttä, 2004). Also, the empirical research shows that the example of opening schoolyards after school hours, which is solely considered a benefit in the literature (Allam et al., 2022a; Postaria, 2021), can result in forms of vandalism and more nuisance complaints because no surveillance is present outside school hours. Lastly, since the 10-Minute City takes on a one-size-fits-all approach, it might happen that we start treating every neighborhood the same and place the same amenities in every neighborhood, resulting in monotonous neighborhoods which do not accommodate all demographic groups. This last risk is confirmed by Hosford, Beairsto & Winters (2022); Khavarian-Garmsir, Sharifi & Sadeghi (2023); Logan et al. (2022).

Concerning road safety and the promotion of active mobility, the municipality of Utrecht gives active mobility a prominent role in several policies, which is beneficial for CIM (Broberg, Kyttä & Fagerholm, 2013). An example of this is the creation of 'Leefstraten' during the summer holiday in which cars are prohibited. However, according to experts, measures to promote active mobility may lead to chaotic or unsafe situations for children. For example, when traffic rules for cyclists are removed to make cycling easier. Moreover, experts express that the car is still rather dominant in the city, resulting in dangerous roads with heavy traffic that must be crossed by children to reach the playgrounds. These dangers will decrease CIM and restrict children from actualizing their affordances.

The promotion of active mobility, in line with the 10-Minute City, in Utrecht has several benefits which align with the expected benefits from the literature. Active mobility leads to reduced car use, which results in safer roads toward playgrounds. Because of this, children can more easily go independently to the playgrounds (increasing CIM), and they can more easily go to playgrounds a bit further away, which expands their options (increase in environmental

affordances). Also, active mobility improves social ties since inhabitants can get in contact easier while walking or cycling. Stronger social ties may lead to more tolerance and trust among inhabitants (Gaglione et al., 2022), which can potentially decrease the complaints of nuisance which is a current problem in Utrecht. In the end, playgrounds may potentially not be removed due to this decrease. Stronger social ties may lead to parents perceiving their neighborhood as safer, due to which they will let their children play outside more, which increases CIM (Brobert, Kyttä & Fagerholm, 2013). Lastly, active mobility demands safe and green environments through which people can cycle and walk (Urban Mobility, 2022). In Utrecht, there will be a focus on creating more green in the city, and with the focus on creating more diverse green environments, this can contribute to the experienced lack of 'playable' green.

The promotion of active mobility brings along a potential risk for children in Utrecht, which was not expected based on the literature. While the promotion of active mobility was primarily considered a benefit in the literature (Gill, 2021; Urban Mobility, 2022), the empirical research shows that experts assume that promoting active mobility results in many electric bicycles driving at a fast pace, the creation of bicycle 'highways' through the city, and many traffic rules aimed at cyclists being removed. They argue that this results in chaotic traffic situations, which does not improve road safety for children, potentially decreasing CIM.

Based on the results of this research, an adapted version of the conceptual model from Chapter 2.5. has been created (Figure 23). The adapted version includes the specific ways in which the 10-Minute City can contribute to the experienced strengths and weaknesses regarding child-friendliness in Utrecht.

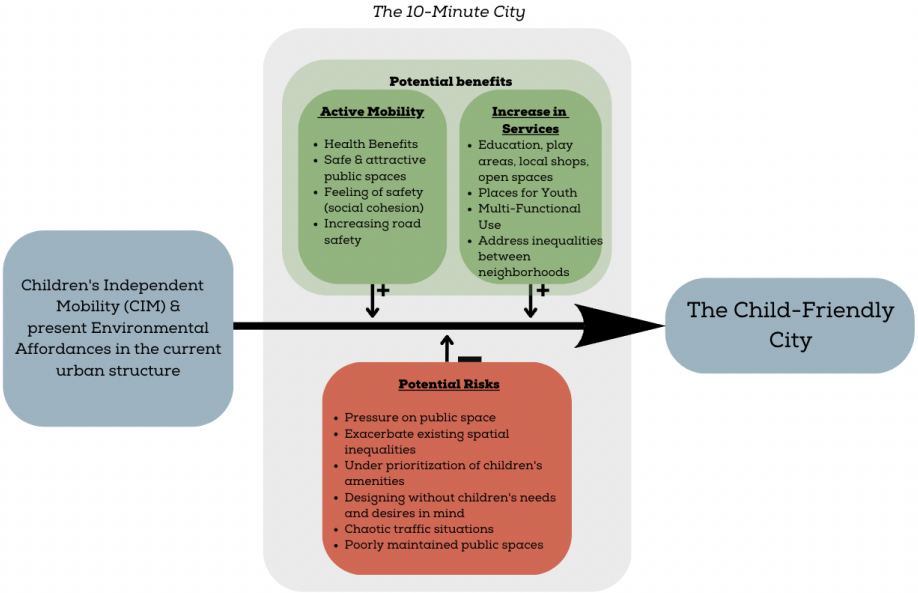

Figure 23. Adapted Conceptual Model Specifically for the City of Utrecht.

5.2 Policy Recommendations

As mentioned before, the RSU 2040 is an overarching vision for the city of Utrecht, which is implemented in environmental- and zoning plans. This makes the execution of the RSU 2040 not completely fixed, so the insights of this research can contribute to the execution of this vision. Based on the results of this research, several recommendations for the city of Utrecht can be made.

First, we can see that all the ambitions that the municipality has will put a large pressure on public space. A concrete example in which the municipality can relieve some of this pressure is by creating more multi-functional places in which a playground comes together with a park, a restaurant, a place for youth, etc. Those places are perceived by the respondents as the most successful play spaces in Utrecht, and this will contribute largely to the quality of play spaces here. These places can also increase the number of amenities for youth. By creating more of those multi-functional places and by increasing the number of youth amenities in general, youth can have their own spot, resulting in fewer youth at playgrounds.

With the increased attention and budget that is put into the 10-Minute City vision in Utrecht (Gemeente Utrecht, 2021c), it can function as a platform to inform inhabitants about the present amenities. For instance, the municipality can create maps in which inhabitants can see which amenities and activities are present within ten minutes of their homes. Moreover, the municipality should ensure the presence of societal amenities (e.g. neighborhood centers) in which social partners such as SportUtrecht can help to increase children's awareness of amenities. These social partners can inform parents about the benefits of adventurous play, potentially decreasing the complaints of concerned parents about this play equipment. Moreover, investing in social activities and amenities can potentially increase social interactions. By creating more opportunities for inhabitants to increase their social interactions, more trust and tolerance among inhabitants can arise and the number of nuisance complaints potentially declines.

Regarding the promotion of active mobility, the municipality should be aware that an increase in active mobility does not necessarily mean a safer environment for children in which they can independently move around. By keeping traffic rules in place, instead of removing them, the environment might be safer for children to independently move around. A focus can be laid on creating traffic-restricted areas in which pedestrians are prioritized instead of cyclists and more safe crossings for pedestrians should be created throughout the city so that children can reach playgrounds easier.

5.3 Limitations of the Research & Further Research Directions

The knowledge gap stated by Khavarian-Garmsir et al. (2023), implies that there is limited attention to the variety of demographic groups in the 10-Minute City and that more research is needed on this topic. This research partially covers this research gap by revealing the potential benefits and risks of the 10-Minute City for children in Utrecht. While these are valuable insights for the city of Utrecht, the results cannot be generalized, since they are context dependent. However, this research can function as a foundation for research on other case studies, or research on the potential benefits and risks of the 10-Minute City for other demographic groups.

When looking at the case study of this research, it becomes clear that there are many differences and inequalities between neighborhoods in Utrecht. So, while this research gives a valuable general insight into the potential benefits and risks for children throughout the whole city, the specific experienced strengths and weaknesses of child-friendliness may differ per neighborhood. To be able to draw up policy recommendations on the ways in which the 10-Minute City may boost child-friendliness in a specific neighborhood, it would be valuable to perform this research in each specific neighborhood.

When reflecting on the used research method, the combination of the methods was suitable to answer the research question. The document analysis at first allowed the researcher to obtain more knowledge on the manners that child-friendliness is integrated into the spatial policies of Utrecht, after which the researcher could ask specific questions about these in the interviews. Using two separate interview guides based on the expertise of the interviewees was useful since not all experts in child-friendliness were aware of the specific content of the 10-Minute City, and the other way around. However, the researcher mainly spoke to policymakers and experts, with just one interview with inhabitants. Children were left out of the research due to time constraints and practical challenges. But since this research is partly about the perceived strengths and weaknesses regarding child-friendliness, it would be valuable to speak with parents and children to gain more insights into their specific experiences of them to gain a fuller image of the perceived strengths and weaknesses. Since respondents brought up many different specific examples from the city of Utrecht, a potential way to do this is by holding walking interviews. In this way, children and inhabitants can immediately show the researcher specific places in their neighborhood.

5.4 Personal Reflection

Finally, I would like to reflect on my personal process of writing this master's thesis. Since the beginning of my master's, my interest in child-friendly cities was sparked already. Because of this, deciding on an overall theme went relatively smoothly. However, during the development of my research proposal and the theoretical framework, I soon stumbled upon the challenge that hardly any literature was available on the effects of the 10-Minute City on children was available. Because these effects could not be found in the literature, many brainstorming sessions about the potential benefits and risks followed. Luckily, with the help of Ward Rauws and Viviana Cordero in guiding me onto the right path, I was able to identify several benefits and risks of the 10-Minute City for children that set the basis for my empirical research. Another struggle for me while writing the thesis was time management since I had to work many hours at my job beside it. During one of the supervision meetings, Ward Rauws gave me the advice to divide my to-do list into very small parts, to be able to 'celebrate' my successes each day, instead of falling behind on all the tasks I should have done in one day. This advice made sure that I never wrote a theoretical framework this effectively and I will take this lesson with me during my future career. I can definitely look back on a smooth process of writing my thesis and I am very proud of the result that is laying in front of me.

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Appendices

Overview Appendices

Appendix 1 – Interview Guide 1: 10-Minute City

Introductie
Hallo, mijn naam is Yildiz Heeringa, ik ben 25 jaar oud en ik ben op dit moment in de afrondende fase van mijn master Society, Sustainability and Planning aan de Faculteit Ruimtelijke Wetenschappen in Groningen. Allereerst natuurlijk hartelijk dank voor uw tijd en medewerking aan dit onderzoek. Vervolgens wil ik u vragen of u ermee akkoord gaat dat dit interview voor verwerkingsdoeleinden wordt opgenomen. Mocht u tijdens het interview vragen en/of opmerkingen hebben, dan kunt u die natuurlijk altijd stellen. Tot slot wil ik u garanderen dat u het interview ten alle tijden kunt stoppen indien gewenst.

Heeft u voordat wij beginnen met het interview nog vragen en/of opmerkingen?

Introductievragen
1. Kunt u uzelf kort voorstellen en vertellen wat uw rol binnen de *organisatie* was/is?
2. Wat was/is uw betrokkenheid bij de visie van de 10-minuten stad in Utrecht? Waarom is deze visie volgens u belangrijk?
3. Wat is in uw ogen een kindvriendelijke stad? Waarom is dit volgens u belangrijk?
4. Hoe kan de 10-minuten stad bijdragen aan een kindvriendelijker Utrecht?
    a. *Kleven er aan de 10-minuten stad ook risico's voor kinderen?*

De Groene Stad
5. Hoe draagt de 10-minuten stad bij aan groene openbare ruimte?
    a. Hoe worden de behoeftes en percepties van kinderen op het gebied van groene openbare ruimte meegenomen in de visie van de 10-minuten stad?
    b. Kunt u hier concrete voorbeelden van noemen?
        - *Inrichting van het groen*
        - *Voordelen van groene leefomgeving*

De Verbonden Stad
6. Op welke manieren vergroot de 10-minuten stad de actieve mobiliteit van de inwoners?
    a. Hoe worden de behoeftes en percepties van kinderen op het gebied van actieve mobiliteit meegenomen in de visie van de 10-minuten stad?
    b. Kunt u hier concrete voorbeelden van noemen?
        - *Veiligheid op de weg*
        - *Autoluwe/-vrije straten*

De Compacte Stad
7. Hoe zorgt de 10-minuten stad ervoor dat er genoeg te doen is voor inwoners in hun eigen buurt?
    a. Hoe worden de behoeftes en percepties van kinderen op het gebied van voorzieningen meegenomen in de visie van de 10-minuten stad?
    b. Kunt u concrete voorbeelden noemen?
        - *Multifunctioneel gebruik faciliteiten (bijv. schoolpleinen)*
        - *Faciliteiten voor kinderen (scholen, speeltuinen, etc.)*
        - *Schaarse ruimte*

De Inclusieve Stad
8. Een van de thema's binnen de visie 'de 10-minuten stad' in Utrecht is het zijn van een inclusieve stad waarin iedereen welkom is en zich welkom moet voelen. Op welke manier draagt de 10-minuten stad hieraan bij?
    a. Hoe worden de behoeftes en percepties van kinderen op het gebied van inclusiviteit meegenomen in de visie van de 10-minuten stad?
    b. Kunt u concrete voorbeelden noemen?
        - *Participatie kinderen*
        - *Ruimtelijke ongelijkheden*

Afsluitende vragen

9. Is er nog iets wat in uw ogen belangrijk is voor mijn onderzoek, maar wat we niet besproken hebben?
10. Zou u nog andere personen weten die ook door middel van een interview een interessante bijdrage kunnen vormen voor mijn onderzoek?
11. Weet u nog andere nuttige documenten die van belang kunnen zijn voor mijn onderzoek?
12. Heeft u zelf nog vragen en/of opmerkingen?

Appendix 2 – Interview Guide 2: Child-Friendliness

Introductie

Hallo, mijn naam is Yildiz Heeringa, ik ben 25 jaar oud en ik ben op dit moment in de afrondende fase van mijn master Society, Sustainability and Planning aan de Faculteit Ruimtelijke Wetenschappen in Groningen. Allereerst natuurlijk hartelijk dank voor uw tijd en medewerking aan dit onderzoek. Vervolgens wil ik u vragen of u ermee akkoord gaat dat dit interview voor verwerkingsdoeleinden wordt opgenomen. Mocht u tijdens het interview vragen en/of opmerkingen hebben, dan kunt u die natuurlijk altijd stellen. Tot slot wil ik u garanderen dat u het interview ten alle tijden kunt stoppen indien gewenst.

Heeft u voordat wij beginnen met het interview nog vragen en/of opmerkingen?

Introductievragen

13. Kunt u uzelf kort voorstellen en vertellen wat uw rol binnen de *organisatie* was/is?
14. Wat is in uw ogen een kindvriendelijke stad? Waarom is dit volgens u belangrijk?

Speelruimte

15. Hoe kijkt u naar het huidige speelruimte beleid van de gemeente Utrecht?
    - *Utrechtse Norm*
    - *Informele Speelruimte*
    - *Participatie Kinderen*
    - *Speelbuurten*
    a. Hoe wordt de speelruimte in uw ogen meegenomen in het concept van de 10-minuten stad in Utrecht?
    b. Kunt u hier concrete voorbeelden van noemen?

Groene leefomgeving

16. Hoe wordt er in Utrecht een groene openbare ruimte voor kinderen gecreëerd?
    a. Kunt u concrete voorbeelden noemen?
        - *Behoeftes van kinderen*
        - *Inrichting van het groen*
        - *Voordelen van groene leefomgeving*
    b. Draagt de 10-minuten stad in Utrecht bij aan deze projecten? En zo ja, hoe?

Voorzieningen

17. Is er in de buurt genoeg te doen voor kinderen in Utrecht?
    a. Zit er verschil tussen buurten?
    b. Kunt u concrete voorbeelden noemen in Utrecht?
        i. *Toegankelijkheid voorzieningen (tijd/geld)*
        ii. *Multifunctioneel gebruik van faciliteiten (bijv. schoolpleinen)*
    c. Draagt de 10-minuten stad in Utrecht bij aan deze voorzieningen? En zo ja, hoe?

Veilige leefomgeving

18. Hoe wordt geprobeerd een veilige omgeving voor kinderen te creëren in Utrecht?
    a. Kunt u concrete voorbeelden noemen in Utrecht?
        i. *Autovrije/-luwe straten*
        ii. *Voorrang fietsers & voetgangers*
        iii. *Sociale veiligheid*
    b. Draagt de 10-minuten stad in Utrecht bij aan de veilige leefomgeving voor kinderen? En zo ja, hoe?

Afsluitende vragen

19. Is er nog iets wat in uw ogen belangrijk is voor mijn onderzoek, maar wat we niet besproken hebben?
20. Zou u nog andere personen weten die ook door middel van een interview een interessante bijdrage kunnen vormen voor mijn onderzoek?
21. Weet u nog andere nuttige documenten die van belang kunnen zijn voor mijn onderzoek?
22. Heeft u zelf nog vragen en/of opmerkingen?

Appendix 3 – Consent Form Interviews

Betreft: Onderzoek in het kader van mijn masterscriptie naar de mate waarin kindvriendelijkheid is meegenomen in huidige ruimtelijke beleidsplannen van de Gemeente Utrecht en hoe de 10-minuten stad hierin kan ondersteunen.

Beste (naam),

Allereerst hartelijk bedankt dat u de tijd wilt nemen om mee te werken dit interview en mij daarbij helpt bij mijn onderzoek. Het doel van het interview is om met u te bespreken in welke mate u denkt dat kindvriendelijkheid op dit moment is meegenomen in huidige ruimtelijke beleidsplannen van de Gemeente Utrecht. Daarnaast is het doel van het interview om met u te reflecteren op hoe de 10-minuten stad de ontwikkeling van een kindvriendelijke stad kan ondersteunen.

Het interview zal plaatsvinden op: (datum) om (tijdstip), te (plaats). Als u met onderstaande voorwaarden instemt, zal het interview worden opgenomen en worden de resultaten verwerkt in het onderzoek. Het interview zal ongeveer een uur gaan duren.

Mocht u nog vragen hebben, dan kunt u contact met mij opnemen via y.e.heeringa@student.rug.nl.

Hierbij verklaar ik dat:

Mijn deelname aan het onderzoek geheel vrijwillig is en ik begrijp dat ik op ieder moment kan besluiten te stoppen.	Ja / nee
De resultaten mogen worden verwerkt in het onderzoek.	Ja / Nee
Ik toestemming geef om het interview op te nemen.*	Ja /Nee
Ik toestemming geef voor gebruik van de naam van mijn functie in het onderzoek (uw eigen naam zal nergens vermeld worden).	Ja / Nee

indien ja, naam van functie die genoemd mag worden: .....

.....

Ik mij te allen tijde kan terugtrekken uit het onderzoek. Ja / Nee

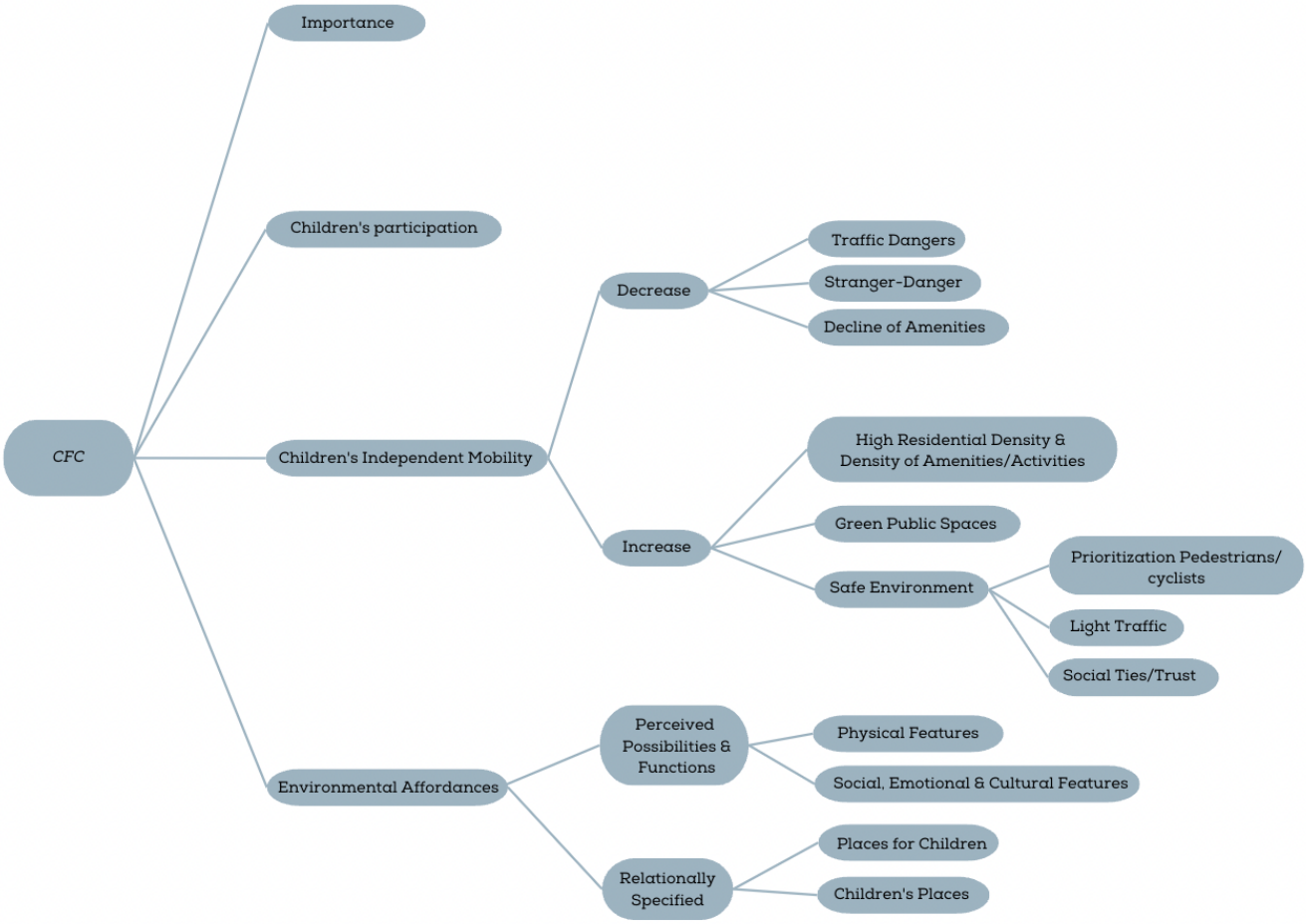
Datum: .....

Handtekening: .....

*De opname zal na uitwerking van het interview vernietigd worden.

Appendix 4 – Deductive Code Trees

Code Tree: Child-Friendly City



Code Tree: Benefits & Risks of 10-Minute City for Children

Appendix 5 – Inductive Code Book

Concept	Code Group	Specific Codes that were used
Child-Friendly City	Strengths of child-friendliness in Utrecht	Speelruimtescan Utrechtse Norm
	Weaknesses of child-friendliness in Utrecht	Lack of maintenance Nuisance complaints Parents' perception of unsafe playgrounds Youth on playgrounds Existing inequalities between neighborhoods
	Other	Examples of child-friendly locations Communication between departments municipality