A PRESCHOOL INSIDE AN OLDER ADULT RESIDENTIAL COMMUNITY

Future directions towards intergenerational living in the city of London

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POLITECNICO
MILANO 1863

"A person is a person because of people" Zulu proverb.

Figure 1. YOU today/YOU tomorrow (Bruce Mau, 2016)

DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my supervisor.

Haya Arafa

20/06/2022

ABSTRACT

Loneliness and social isolation of older adults are serious problems affecting a significant number of people in the UK. Research has linked social isolation and loneliness to higher physical and mental illness risks. Concurrently, UK's childcare system is leaving working parents financially crippled as they confront the increasingly more complex challenge of enhancing children's social interaction and cognitive performance. This study aims to propose an intergenerational model that develops a spatial pattern to enhance children's social interaction and cognitive performance and solves the problems of loneliness and social isolation for the elderly. This is done by integrating urban sociology and urban policy to propose an integrated urban community that would socially impact human interactions and develop a transformation for the compact city of London's urban growth. In the first part, I start with a theoretical investigation of the research problems and their consequences. Then, I draw on existing literature and investigate empirical evidence on intergenerational programs' impact on the target groups. In the second part, I explain the spatial aspects and their impact on users. In the third part, I evaluate existing and provisional inputs for urban planning and policymaking and explore the opportunity for future provision. I then develop a framework that focuses on the 'physical form' and the 'social impact' within the city of London, which helps evaluate the impact of 'intergenerational living' as a potential solution for the imminent tremendous socio-demographic changes in the UK. The chapter discusses how integrated communities can help the compact city principle and could improve the urban development of a highly dense city. In the Fieldwork, I test the theoretical framework through questionnaires to primary users of the space and interviews with experts. Additionally, the study analyzes the London borough of Barnet as a potential site for planning and implementation of the project. The results of the study show that creating an intergenerational model can enhance children's and older adults' social interaction and cognitive performance. Also, planning integrated communities can help reduce loneliness and social isolation for older adults. I conclude that the intergenerational model can improve children's academic performance, knowledge, and language development. Considering the rapidly ageing population problem in the UK, space-efficient households in an integrated community can help fix the housing demand problem in the coming years. Similarly, increasing supply of childcare and early year services can mitigate availability and affordability problems. The findings of the study lay the groundwork for new perspectives on planning and policy directions toward

inclusive mixed-use land policies that help the compact city's land density and urban growth while having a positive impact on its inhabitants.

ITALIAN ABSTRACT

La solitudine e l'isolamento sociale degli adulti anziani sono problemi che riguardano un numero significativo di persone in UK. La ricerca ha collegato l'isolamento sociale e la solitudine a rischi più alti di malattia fisica e mentale. Allo stesso tempo, i servizi per l'infanzia in UK lasciano i genitori paralizzati dal punto di vista finanziario mentre affrontano sfide sempre più crescenti in termini di investimento nelle relazioni sociali e nelle performance cognitive dei figli. Il presente studio ha l'obiettivo di proporre un modello intergenerazionale che sviluppi un modello spaziale per stimolare le interazioni sociali dei bambini, le loro performance cognitive e allo stesso tempo per risolvere i problemi di solitudine e di isolamento sociale che affrontano molti anziani. Tale obiettivo è perseguito integrando la sociologia urbano con lo studio delle politiche urbane per proporre una comunità integrata urbana che abbia un impatto sulle interazioni sociali e sviluppi un modello di trasformazione per la crescita urbana della città compatta di Londra. Nella prima parte, il lavoro si basa sulla letteratura esistente e sulle evidenze empiriche sull' impatto dei programmi intergenerazionali sui gruppi target. Nella seconda parte, la tesi spiega gli aspetti spaziali e il loro impatto sui beneficiari. La terza parte valuta gli input esistenti e provvisori per la pianificazione urbana e la costruzione di politiche, ed esplora le opportunità future. Dopo di che, sviluppa uno schema che si focalizza sulla "forma fisica" e l' "impatto sociale" nella città di Londra, che aiuta a valutare l'impatto del "vivere intergenerazionale" come una potenziale soluzione per gli imminenti cambiamenti socio-demografici. Il capitolo discute come le comunità integrate possono favorire il principio della città compatta e possono migliorare lo sviluppo di una città molto densa. Nel capitolo chiamato "Fieldwork", lo schema teorico viene testato attraverso questionari ai beneficiari degli spazi stessi e attraverso interviste con esperti. In più lo studio analizza il distretto di London di Barnet come un sito potenziale per la pianificazione e l'implementazione del progetto. I risultati dello studio mostrano che creare un modello intergenerazionale può agevolare l'interazione e la performance cognitiva di bambini e anziani.

Inoltre, pianificare comunità integrate può aiutare a ridurre la solitudine e l'isolamento sociale per gli anziani. Lo studio conclude che il modello intergenerazionale può migliorare la performance accademica dei bambini, la conoscenza e lo sviluppo del linguaggio. Considerando il rapido invecchiamento della popolazione in UK, le comunità integrate possono contribuire a risolvere il problema di domanda di abitazioni che si concretizzerà negli anni futuri. Allo stesso

modo, aumentare l'offerta di servizi per i bambini può mitigare i problemi di copertura e di accesso. I risultati dello studio gettano le basi per una nuova prospettiva rispetto alla pianificazione e alle politiche verso un uso misto e inclusivo del patrimonio immobiliare e terriero che aiuti la città compatta nella sua crescita avendo allo stesso tempo un impatto positivo sui suoi abitanti.

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GLOSSARY OF TERMS

Older Adults

1.   According to the United Nations, an older adult is someone who is 60+ years old. Sometimes families or communities use the term to define a family status, health conditions related to age, or a physical appearance which is more a socio-culture definition.

Third age

2.   The (U3A) University of the Third Age that offered study opportunities to active seniors. It was founded by Peter Laslett who was an academic. In 1989 he published a very influential book called A Fresh Map of Life: The Emergence of the Third Age defining the term: An era after retirement with health, positive attitude, and enthusiasm.

Preschoolers

3.   According to Wikipedia, a preschooler in the UK and US from 2 to 5 years old. Preschool is very important for children's development through social interactions, cognitive and psychological and physical development as children who attend preschool learn how the world by interacting with others and through play.

Intergenerational living

4.   As stated in Intergenerational housing, it is a model including of younger and older residents.

Nursing Home/ Care Homes (UK)

5.   As indicated by (NIH) National Institute of Ageing in the US is also called skilled nursing facilities that provide a wide range of care services that focus on medical care and health more than assisted living facilities.

Assisted Living

6.   As indicated by (NIH) National Institute of Ageing in the US assisted living is for people who need help with everyday tasks, but not as much help as a nursing home can

provide, with fewer residents paying more for higher levels of care.

Residential Care

7.　　Wikipedia describes residential care as long-term care that is provided to adults or children in a residential facility instead of their own home.

Dementia

8.　　According to (WHO) World Health Organization, Dementia is a disorder in which there is a decline in cognitive function beyond what one can expect as a consequence of biological aging. In addition to memory and thinking, it impacts orientation, comprehension, calculation, learning capacity, language, and judgment.

Attention deficit hyperactivity disorder (ADHD)

9.　　According to (NHS) National Health Service in the UK. Inattention deficit hyperactivity disorder manifests as symptoms like being restless and having difficulty concentrating.

Autism Spectrum Disorder (ASD)

10.　　According to (CDC) Center for disease control and prevention, autism spectrum disorder is a developmental disability that can adversely affect a person's social, communication and behavioral functioning.

Post Traumatic Stress Disorder

Anxiety disorder

11.　　According to (NHS) Anxiety disorders are a type of mental health condition. A feeling of unease, such as worry or fear makes it difficult to get through your day. Symptoms include feelings of nervousness, panic, and fear as well as sweating and a rapid heartbeat.

Group based providers

12.　　Registered childcare providers operating in non-domestic premises (as identified by Ofsted). Group-based care for children under school age included full day and sessional care. Including private group-based providers (companies who run profit and non-profit and Voluntary group-based providers (community groups, charities, or religious groups).

School-based providers

13.   These include preschools and kindergartens offered by state funded or independent schools (identified from the School Census).

Childminders

14.   As indicated by the Ofsted register, listed childminders operating in domestic settings (in ther homes) , for a reward but not including agencies.

ECEC

15.   According to the Parliament in the UK. Early Childhood Education and Care (ECEC) refers to education and childcare provided in regulated settings from birth to the start of primary school.

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INTRODUCTION

In an ageing society, it is increasingly challenging to keep older adults from getting depressed, feeling lonely, or socially included in society. At the same time, enhancing children's social interaction and behavior has become and will become even more complex in the future. Research in urban planning and policy-making can provide innovative solutions and functional frameworks for thinking beyond traditional parameters for planning spaces that are inclusive, promote subjective wellbeing and foster social cohesion. The study is working towards the Sustainable Development goals. The thesis will address two SDG objectives: "Good health and well-being" and "Quality education" by exploring the idea of integrating a preschool inside an older adults' retired residential community. The study is proposing a model that will help in solving the problem of loneliness, social isolation, and boredom that can af¬fect older adults' mental health as well as integrating a preschool inside the same community that can impact children's social skills and cognitive development. This research will focus on urban sociology; The study of life and human interaction in urban areas (Varma & Yadav, 2019). The research studies specific challenges and problems for older adults and children in urban areas to provide urban planning and policy-making inputs.

Research Problem

The total population of people aged 65+ living in the UK is estimated to be 12.3 million (ONS, 2020a). The data reveal that more than 4 million people (34%) in the UK over the age of 65 live alone, and more than a million older people say they go for over a month without speaking to a friend, neighbour or family member (Age, 2019a). The issue is that in the next 10 years, nearly 2 million people aged over 50 are expected to feel lonely in the UK unless measures are taken to prevent it (Age, 2018). The concept of loneliness for retired adults has been a common problem for the last decades, which can lead to depression. On the other hand, in the modern era, a huge number of parents are making career sacrifices due to problems of where to leave their children while working. According to Office for National Statistics in the UK (2019a), over half of the mothers (56.2%) said they had made a change to their employment for childcare reasons, compared with (22.4%) of fathers. The high cost of childcare in the UK is causing many issues for parents. Among them, it's influencing the low birth rate and has made

it difficult for mothers to advance in their careers (P T S, 2022).

Proposing an intergenerational program that combines a series of serviced residential apartments with facilities for retired older adults and an integrated preschool in the same community. Children and older adults can impact each other positively (Gualano et al., 2018), (Age Mobility, 2018), (Rosebrook, 2002), (Evan Briggs, 2017). The "Get along" concept is where both generations share the common areas and service facilities under one roof while having their own private spaces. The thesis proposes an integrated model of inclusion by combining scientific approaches to create impactful spaces and experiences that encourage social interaction and enhance cognitive performance for very young and old.

Research aim

The study aims to propose an intergenerational model that develops a spatial pattern that can enhance children's social interaction and cognitive performance while solving the problems of loneliness and social isolation for the old. This is done by integrating urban sociology and urban policy by proposing an integrated urban community that would socially impact human interactions and develop a transformation for the compact city of London's urban growth. This research is an attempt to establish 'intergenerational living' as a viable forward-looking solution for the upcoming tremendous socio-demographic changes in the United Kingdom. Another motive behind the study is evaluating existing and provisional inputs for urban planning and policy-making and developing a framework that focuses on the 'physical form' and the 'social impact' to comfort and encourage those in need.

Research Objectives

Indicate the importance of studying the issue.

Discover how social relationships can impact children and older adults in their lives and the impact on society.

Analyze the needs & wants of both targeted groups and examine how they can be linked in one space?

Generate information about the impact of social interaction between older adults and children in relation to spatial contexts.

Explain the relationship between urban policy and a healthy environment.

Analyze policy directions of older adults' housing & childcare facilities in London.

Study a sample of each age group and examine how they feel about the intergenerational provision.

Identify sociological and spatial variables that mothers look for when choosing a preschool.

Understand the psychological and spatial perspective of home for older adults.

Analyze the benefits of intergenerational living and understanding the limitations.

Identify the risks of the compact city of London and the implications on the housing market.

Explore how integrated communities can affect the density of the compact city principle.

Describe and proposing a site in London where the project can be implemented.

Expected Results

Needs and practices for better ageing.

Needs and practices or better future for children.

Better implications for developed urban cities.

Policy Recommendations.

Strategies and actions (Urban sociology & urban policy).

Research Question

The main research question that this research aims to answer is; Can creating an intergenerational living for children and older adults enhance their social interaction and cognitive performance?

The secondary research question is: Can urban planning and policy making use promote inter-action to comfort and encourage those in need?

Summary of Chapters

The research work is divided into seven chapters. **Chapter 1** includes the research for-malities (Introduction, problem statement, research aims, objectives, expected results and the research question). Consequently, **chapter 2** constitutes the theoretical framework by studying individually the two age groups (children and older adults) and then analyzing them together through data, evidence, theories and case studies. The chapter begins by explaining how hu-mans depend on relationships, especially older adults who are prone to loneliness and social isolation. Then elaborates on the difference between loneliness and social isolation and how it could affect the quality of life, mental health and physical health. The data elaborates the facts and depicts the implications of loneliness and social isolation on physical and mental health in the coming years if not tackled. It is shown by (Sutin et al., 2020), how it could increase the risks of diseases such as dementia by 40% and explained by (Age, 2019), how it could affect the chances of depression and premature death for older people. As (McDaid et al., 2017), urge to tackle the problem of loneliness earlier to be able to save more than half of health care ex-penses in the future. The importance of mental health is tackled in the research by explaining how loneliness and social isolation contribute to the risks of depression affecting a considerate amount of older people in the UK (Royal College of Psychiatrists, 2018). WHO (2017) ex-plains the rise of mental diseases among older people discussing how it must be taken seriously as physical health. The statistics shows that mental and neurological disorders affect (20%) of adults aged 60+ while disability problems affect only (6.6%). The role of social interaction constitutes part of the research and how it could decrease the chances of depression (Royal College of Nursing, 2021), and reduce the risk of dementia (Sutin et al., 2020). This section continues by explaining the socio-culture changes, clarifying the changes in the dynamics of the ageing process in the developing world, concentrating on retired older adults and how the human ageing process is slowing down in most developed countries. The theory of the 'third age' of personal achievement and fulfillment by the English historian and sociologist Peter Laslett (1991) is analyzed in relation to the cycle of life.

Simultaneously, this chapter continues by studying the other age group (children 2-5 years old), focusing on children in the modern era and explaining the changes in their movement patterns and why they spend more time indoors? The role of technology is presented in this chapter, its impact on disrupting children's social skills, and how it transformed children compared to 10 -20 years ago. Children's time in front of a screen has risen considerably in recent years. Studies by Downey & Gibbs (2020) and (Kraut et al., 1998) are analyzed to show how the internet may result in reduced communication between family members, fewer social networks; depression may occur, loneliness in some circumstances and distraction. Furthermore, difficulty in organizing and completing tasks and hyperactivity (Ra et al., 2018).

The relationship between social relationships and children's mental health builds another argument and how the early years of social interaction can have a long-term impact on a child's development. This part show and analyzes different studies of children with high and low social skills and how it affects their performance, well-being and behavior when they grow up. Socially isolated children can hardly obtain a college degree and are more prone to psychological distress (Lacey et al., 2014). Children with a high level of social, emotional, and behavioral well-being perform better academically and are more engaged in school (Department for Education, 2012).

The theoretical framework continues to explain the benefits of early childhood education and care (ECEC) for children and mothers. The benefits include improving a child's cognitive, positive behavior, social and educational outcomes in the short and long term (Blanden et al., 2019). Children who attend ECEC are more prepared for school, attaining a good level of development that helps their learning capabilities (Becker, 2011) and helps them boost their confidence and social skills, which prepare them for the workplace in the future (Sim et al., 2018). Several factors are analyzed to determine the role of quality ECEC on a child's personal and professional development. Long-term studies are also examined, showing that ECEC improved the lives of children from disadvantaged households significantly and helps narrow the gap between different social groups (Stipek & Ryan, 1997) (Sylva et al., 2013).

The role of ECEC constitutes another part of the research to benefit mothers as over half of mothers (56.2%) have made career changes due to childcare affordability and availability

(ONS, 2019). The employment rates of working and workless mothers are studied in the UK. There has been a continuous increase in mothers' employment in the past and the coming years. The ONS data is analyzed to identify the total number of children who attend a sort of ECEC, which shows that almost half (46%) of 0-4 children in the UK attend childcare, preschool and early year services.

In order to comprehend why more than half of children do not attend a sort of ECEC, the problems of ECEC are analyzed in the UK as it has been found that (97%) believe that childcare is too expensive and (96%) suppose that the government is not doing enough to provide parents with the cost support or the availability of childcare (PTS, Women's Budget Group, et al., 2019). The childcare affordability and availability problems influence low birth rates and other issues like parents cutting down costs on necessary expenses (P T S, 2022).

In the next part of the chapter, residential and care homes are being analyzed in the UK, anticipating the demand for caring facilities in the future and how older people's care needs become more complex when they age. As (30%) of older people receive little or no support for their needs and (37%) depend on friends and their families (Triggle, 2018). However, it is explained by Clapham (2005, p. 235) that the concept of home theory in a series of meaningful activities that cannot be met in a residential or care home facility. At the same time, it is also explained that not all older adults have a positive attitude towards home and prefer to live in a residential care rather than being isolated. One important aspect identified is that older people will continue moving to places that accommodate their needs. Other solutions such as home adaptations, moving to retirement villages, and hiring a carer at home are also discussed in this part.

The chapter continues with the literature review about what happens when the very young and old interact? The chapter explores case studies about intergenerational programs, analyzing the impact on children and older. The analyzed case studies include intergenerational care (a nursery inside a care home), children visiting care homes for certain hours a day, and intergenerational communities that bring different generations together. The case studies analyzed how the interaction between the two age groups enhanced social interaction and cognitive performance with other beneficial outcomes. The studies depict how social interaction decreases loneliness, delays mental decline, lowers blood pressure, boosts mental health, and reduces the risk of diseases for older adults. The case studies show that children's social skills, academic

performance, vocabulary, language, positive social behavior, less anxiety, and perception of ageing are developed.

The demographics analysis comes next, in which the study of ageing in the UK is analyzed through data by the office for national statistics, United Nations population prospects and world development indicators. Studying the population and the percentage of people aged 65+ and showing the changes in the life expectancy and comparing it with children. In 2050, the population of older people aged 65+ is expected to reach a quarter (25%) of the UK's fast-rising population (United Nations, 2019). The chapter concludes with a literature hypothesis, summarizing all the issues tackled in the literature and representing a root cause analysis that traces down the underlying cause and effect relationship of the core issues observed in older adults and children in the literature to a root cause of an "Urban Policy Failure." For both age groups.

Chapter 3 discusses what do the preliminary results of the analyzed case studies in the literature review show about the proposed idea? The chapter is dedicated to explaining the proposed solution and introducing the idea that the thesis is exploring. It aims to give a deeper understanding of the concept of integrating a preschool inside an older adults' residential community. Explaining the "Get along" concept between the two age groups, the harmonious shared spaces provision, and the setting of the private spaces. The chapter describes the model of having serviced residential apartments targeted specifically for retired older adults who can live independently. One of the objectives is to help them live independently with a fixed form of mental support that the community and children will provide, and the specialized services offered for their needs.

Moreover, having an integrated preschool in the same community where they share common services, amenities and open space but have individual private entities for each group's privacy. The chapter explains how both age groups will benefit from this model. It discusses how the housing market will be highly challenging to accommodate all the older people and satisfy their needs in the coming years. At the same time, address the issues of quality and affordable childcare facilities for parents. It also points out from an urban development perspective how this integrated model is sustainable for the city's urban development and explains how planning the site well will prevent social isolation by explaining the spatial provision when planning the site. Furthermore, it emphasizes how children need to be part of the real world, how this model will

help them, and how planning the setting and the community from a spatial perspective can help children's education and development. The children's interactions with older people will be planned with dedicated spaces that will be planned accordingly to the children's education and development goals. The goal is to propose a sustainable integrated model to develop a spatial pattern that can enhance children's social interaction behavior, academic performance and cognitive performance and solve the problem of loneliness and social isolation for the old.

Chapter 4 discusses why the city of London has been chosen for the project location. The vast urban growth of the city is explained, which triggered the idea of the integration. The chapter discusses how this idea could be a possible solution for a densely populated city. This part analyzes how London became the most dynamic economic city in the UK with an overview of why people migrated to London in the first place? The chapter begins by zooming out to understand the global urbanization force that has challenged the world's economic, social, and environmental regeneration. It analyzes urbanization from a global perspective and then zooms in on the city of London's transformations. The shift of the growing population and how it will be having an unprecedented negative impact on cities in the coming years, not only problems related to urban growth, economy and environmental issues but also social implications. The chapter continues by providing an overview of examples and experiments from previous projects and research on how urban policy can impact a healthy environment and can positively impact urban communities. Urging planners, designers and builders to integrate the social aspect as a key element in urban development.

A brief history is discussed of how the compact city approach is adopted in London and the benefits and risks of a compact city, emphasizing the consequences on housing prices. Assessing housing demand by focusing on how demographic shifts will affect the housing demand in the coming years of 'the ageing population.' The chapter continues by explaining why there should be a reason for a new policy direction toward integrated communities and reviewing how integrated communities can help the compact city principle and could be a possible solution for improving the urban development of a high-density city. This has been done by analyzing London's spatial development and policy framework provisions for childcare facilities and older adults' housing by spotting the opportunity in the Greater London Authority developmental plan. The new provision could be implemented by making the best use of land policy and adopting an inclusive design approach. One hundred thousand childcare places are estimated

to be needed between 2016 and 2041 in London (GLA, 2018). Placing childcare facilities and nurseries in older adults' accommodations can create a vibrant, inclusive community that supports intergenerational connections. Suitable housing can keep older people healthy, allow them to live independently and reduce their need for social care services (Age, 2018). Having a lot of smaller households in an integrated community with a preschool can save up a lot of land use and incorporate the model in several areas.

Chapter 5 is dedicated to the fieldwork and the empirical analysis, which aims to give an illustrative perspective from the two age groups and experts. Different methods are used in the fieldwork to gather qualitative and quantitative data. First, the questionnaire method is used to reach a broader audience to determine insights from (82) mothers about children and (104) older adults, then evaluate the data and draw conclusions. The second method is more in-depth interviews to acquire more profound insights, obtain a point of view and analyze experts' perceptions about the subject. Thematic analysis is used to organize the data after the collection and then represent the data under themes (Creswell & Creswell, 1994). The thematic analysis of mother's questionnaires, older adults' questionnaires, and Interviews are grouped under four interconnected themes under one objective: Can creating an intergenerational program benefit the two age groups? The secondary aim is to understand the spatial and sociological needs, issues, and aspirations each group faces (The older adults in their homes and children in their ECEC setting) to be implemented in the proposed intergenerational model.

Chapter 6 is dedicated to the site recommendation; it shows the criteria of the site selection that would be successful when implementing the project. The data by the national census data on age demographics are aggregated by borough sourced from the Office for National Statistics (2021). They are studied and analyzed to understand the possible sites where the areas where both age groups are cumulated. Then the data is visualized using ArcGIS to merge both data sets based on borough name. The areas where both age groups are cumulated the most are analyzed and a chosen site is selected based on the 8 Interconnected Domains of Urban Life framework by the WHO Age-friendly cities. As a result, the borough of barnet Barnet is recommended as a site for the intergenerational model because it's a high population area of older adults and children and because it falls into the category of an age-friendly city plus other factors that are analyzed (such as density, new developments, ideal for families and environmental

characteristics).

Chapter 7 is dedicated to the conclusion of the thesis. It identifies the summary of the obtained results reflecting on the literature and the research question. The chapter aims to give a comprehensive critical perspective of the gathered data and put it into clear reflections that reference the main findings. It highlights the importance of innovative thinking in the role of urban planning and how policy directions are essential to reduce these risks in overcrowded cities and disconnected communities. The chapter discusses the future of developing cities depending on the theory of the five lessons for urban policy, "Infrastructure – Housing - Urban Land - Employment and Education - City finances." (Glaeser, 2017). The chapter concluded with clear urban policy recommendations that can be implemented in two parts. A) Better use of space to better implications for developed urban cities. B) Best strategic planning for urban communities. The last part of the chapter is dedicated to the study's limitations and suggestions for further research.

2. LITERATURE REVIEW
2.1 Older Adults
2.1.1 The facts of loneliness

Human well-being depends on social relationships, especially for older adults who are prone to loneliness and social isolation (Figure 2). The problem with loneliness is that it significantly affects the quality of life and one's mental health (Age, 2018). In the UK, 17% of older adults say they do not speak to family, friends, or neighbors more than once a week, and 11% report this contact is only once a month or even less (Davidson & Rossall, 2015). There are ways to overcome loneliness if a person lives alone; Watching TV or having pets are considered the primary sources of company or entertainment for more than five million older people (almost 49%) in the UK (Davidson & Rossall, 2015). The issue is that in the next 10 years, nearly 2 million people aged over 50 are expected to feel lonely in the UK unless measures are taken to prevent it (Age, 2018).

Figure 2. The dynamics of unspoken conversation.

Source: Image courtesy of Yusaini Usulludin, Flickr

Later life in the United Kingdom fact sheet (2019) distinguished between loneliness and social isolation, clarifying how they have different meanings but are still correlated. Loneliness is a subjective feeling. It is never desired and is measured by the person's social relationships. While social isolation is an objective measure as it's about the number of relationships and not quality which can be increased if one decides so. People may choose to have fewer contacts to their desire (social isolation), while others may also have many relationships as they can and still feel lonely (Loneliness). Sociability plays an essential role in protecting people from the experience of psychological distress. Studies in the US indicate that loneliness increases the risk of dementia by 40% (Sutin et al., 2020). The risk of depression increases when a person is lonely, socially isolated, and living alone and may cause premature death (Age, 2019).

According to research in actions to prevent loneliness in the UK, every £1 invested in addressing loneliness saves $3 in health-care costs (McDaid et al., 2017). Among the most effective ways to prevent depression in older adults involves reducing loneliness and social isolation by encouraging physical activity, social interaction, learning, and volunteering (Royal College of Nursing, 2021).

2.1.2 Older adults' mental health

It is necessary to pay attention to older people's mental and physical health. Physical health problems can affect mental health, and mental health problems can affect physical health (Figure 3). The most frequent mental health concern among older adults in the UK is depression, affecting 22% of men and 28% of women aged 65+ (Royal College of Psychiatrists, 2018). The issue is that mental health complications are still not so often recognized by doctors or health-care experts. Older adults are often hesitant to ask for help due to stigma associations (Royal College of Nursing, 2021). But according to the Royal College of Psychiatrists (2018), an estimated 40% of older adults in GP clinics have problems in mental health, increasing to 50% in general hospitals and 60% in care homes.

My mental health
has made me lonely

Feeling lonely has
damaged my mental healtl
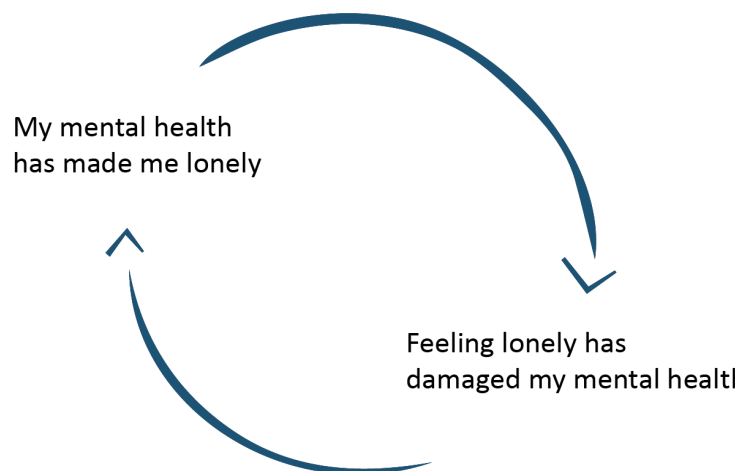
Figure 3. Mental health and Loneliness

Source: mind.org

According to National Institute on Aging in the US (2021) social isolation and loneliness are among the factors that contribute to depression risks. Furthermore, it was stated that diagnosing depression in older adults might be difficult as they have different symptoms than younger adults. They might also have difficulty conveying their feelings. For some, having depression doesn't necessarily mean feeling sad, but there are red flags that can be symptoms of depression (Figure 4).
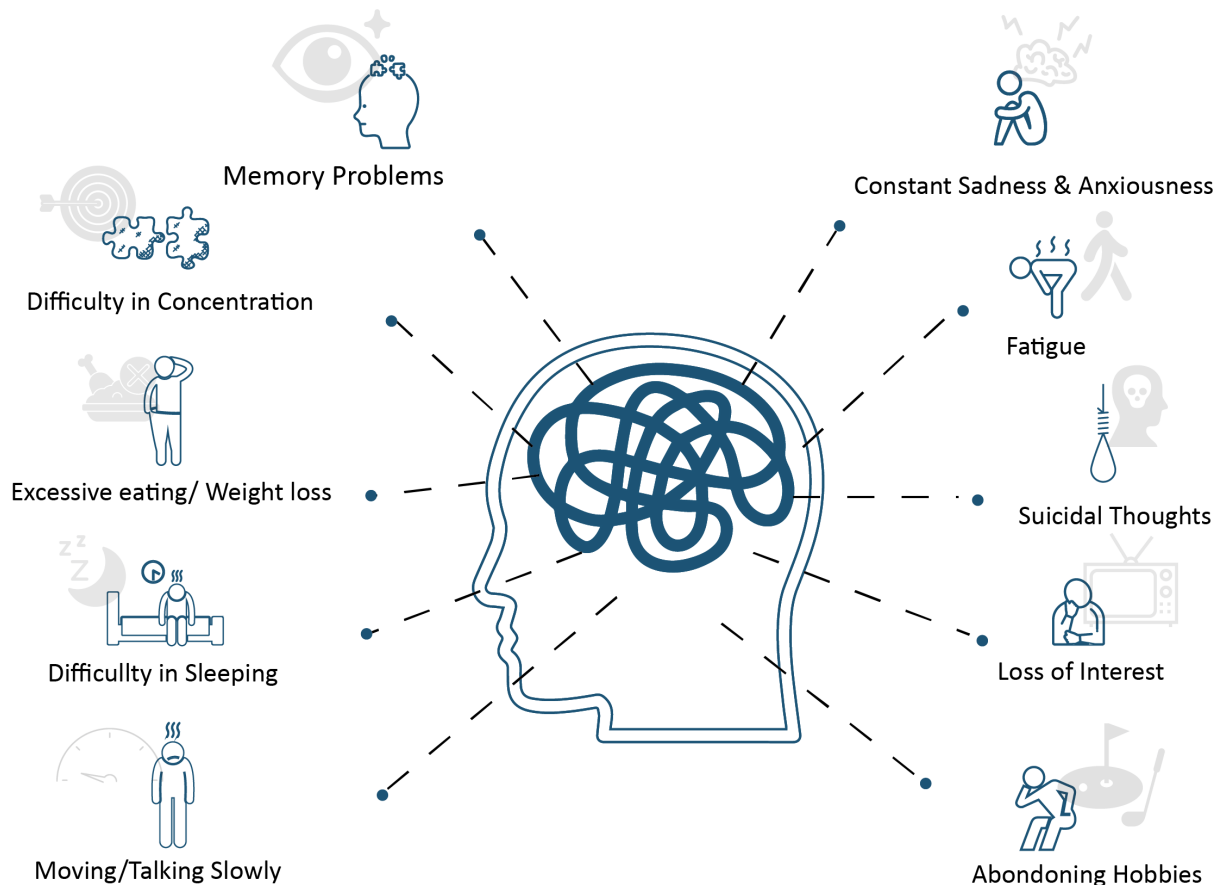
Figure 4. Some Symptoms of depression – Red flags to watch for

Method Used: Illustrator

According to the World health organization (2017), approximately 15% of adults aged 60 + have a mental disorder. **Mental and neurological disorders affect 20% of adults aged 60+ while disability problems affect 6.6% of adults aged 60+. By the increased number of mental illnesses in older adults, medical professionals must take mental health as seriously as physical illness.**

Dementia is another common health issue that affects older adults. While it isn't a result of ageing, it mainly affects older adults (WHO, 2017). The relationship between social isolation, loneliness, and dementia is directly proportional. Loneliness increases dementia risk, and changing this factor can reduce the risk of dementia. (Sutin et al., 2020). However, there is no treatment available to treat dementia yet (WHO, 2017). Research by Alzheimer's Society (2019) shows that an estimate of 850,000 people is living with dementia in the UK. By 2025, this number is expected to exceed 1 million and more than 2 million by 2051, equating to around one person every 3 minutes. There are 225,000 people who are projected to develop dementia this year. Furthermore, 70% of people in care homes have dementia or severe memory problems (Alzheimer's Society, 2019).

2.1.3 Socio-cultural changes

The developing world shaped new identities of old age. The retirement period is no longer a short phase in a person's life like it used to be. A considerable transition happened between 1950 and 2013, the life expectancy at birth increased more than ten years (National Center for Health Statistics, (US), 2015). Therefore, the third age is becoming a significant period in one's life. It's no longer an age where older adults feel desperate and about to die; it's a new era of human evolution.

According to Later Life in The United Kingdom life expectancy study (2019) since the beginning of the 19th century, the UK's life expectancy period has increased. Babies who are born in 2018 are estimated to live for 79.9 years (males) and 83.4 years (females). Additionally, 23.4% (males) and 29.2% (females) born in 2018 are expected to survive until the age of 100.

As Scase (1999, p. 14) points out in his notes that nowadays, typically older adults 55+ are dressed in their jeans, trainers, and baseball caps, they no longer see themselves as old. He states that "The middle ages are no longer the beginning of an end" but a beginning of a new 30 years of enjoyment. He added, older adults envision retirement as an opportunity to gain control over their lives and pursue pleasure.

But what is the third age? According to the English historian and sociologist Peter Laslett (1991), the cycle of life consists of four stages:

First Age: "Childhood" is a phase of "dependence, socialization, immaturity and education,"

the **Second age**: "Adulthood" is an "era of independence, maturity, and responsibility, of earning and saving." **Third Age:** A time "of personal achievement and fulfillment." He Distinguished the third age as a separate "new" old age where people enjoy their life freely without obligation to work. Fourth age: "an era of final dependence and weakness."

Nowadays, the human ageing process is slowing down in most developed countries. Thanks to the advances in health care, cosmetics, technology, and fashion.In their research, Featherstone and Hepworth (1993) explain the relationship between the body and the self-identity, "The mask of the ageing body hides the identity of the young self within." (Figure 5).

Figure 5. Elderly mobility

Source: Flickr.com

2.2 Children

2.2.1 Children in the modern era

Nowadays, children are very different compared to 10-20 years ago. The movement patterns of children have changed drastically. Today, it's more likely to spot a child at home spending a lot of time alone and playing video games instead of cycling or doing any activity outdoors. Children are being dragged at home by alternative activities and enjoying it such as TV and computer (Biddle et al., 2004). Another reason children stay indoors in the UK and spend less time outdoors is due to safety concerns and crime-related parental anxiety (Bird, 2007). Consequently, some children play freely at home without causing stress or anxiety to their parents or the need to be looked after. However, this has caused other issues.

Children aged 3-5 years are using more smartphones at a younger age than before, resulting in many side effects. A 2020 survey in the US found that 60% of children were exposed to smartphones before the age of 5 and 31% before age two (Pew Research Center, 2020). Studies in Sweden have shown that just a few hours of exposure to cell phone radiation can damage some brain neurons within a few months. For instance, only two hours of exposure caused 2% of dead neurons in the brains of rats (Salford et al., 2003). Another study released by the American Academy of Pediatrics Obesity shows that: a decrease in sleep, delayed development, and distractibility (which contributes to poor academic performance) are the risks of sedentary screen time. Moreover, the study stated that children aged 0-2 years should not be exposed to technology. Children aged 3-5 years should be restricted to one hour per day (Rowan, 2014). On the other hand, some experts urge the opportunity for children to get more exposed to smartphones. According to Concordia University in Nebraska (2020) the introduction of technology early could be beneficial for children to be prepared and engage with future technologies to be technology literate which will facilitate navigating online resources in the future. When considering technology introduction to their children, parents should aim to strike a balance between a beneficial level of technology exposure and a harmful one. A child's maturity level and ability to recognize social cues should be taken into account and technology should be introduced in a way that supports children's development, particularly when it comes to learning skills, social skills, social skills are motor skills.

2.2.2 Technology, social skills disruption and other circumstances

Many social commentators claim that children's social skills deteriorate due to excessive exposure to technology (e.g., smartphones, video games, TV, computers, tablets). But it is challenging to assess "social skills" through empirical observation (Downey & Gibbs, 2020) By contrast, Finkelhor (2010) claims that smartphones and internet access give children new levels of independence that parents are concerned about. He added that the technology trends might be particularly appealing under rapid social change, development, and diversification. However, it must be borne in mind that the internet led to less communication between family members, decreased social networks, depression in some cases and loneliness (Downey & Gibbs, 2020).

Children are keen social people. Can you recall your first day of school and how enthusiastic you felt making new friends? Children went through a lot during the COVID-19 lock-downs. It wasn't easy to keep children entertained and socially isolated at the same time with a limited screen time duration. Younger children were shy and anxious about zoom calls and the interaction through screens wasn't easy. The COVID-19 lockdown might affect children's social intelligence and social skills. There is still not much evidence nowadays of how the pandemic will affect children's social skills in the future. Whether losing social exposure will be something vital in the future or not? However, a recently published research paper investigated the aftermath of the pandemic on children. It stated that it could have long-term consequences on mental health: Posttraumatic stress disorders, anxiety, and depression are likely to occur (de Miranda et al., 2020). Much of the child's character comes from social interaction, summer schools, interactive play, role-playing and more focused activities. Social interaction teaches us how to act and respond to others. We learn how to empathize with others, make friends and see things from other people's perspectives.

The amount of time spent on screen time among children has increased dramatically in the last few years. A categorized study made in a preschool in Canada on 5 years old children with two hours of screen time a day and 3 years old children with one hour a day of screen time. At five years of age, screen time above the two-hour threshold was associated with increased inattention and aggression behavior problems. The research advised limiting screen time and supporting physical activity in preschools indicating how critical the preschool phase is in children's lives and it could be a crucial phase for supporting the parents (Tamana et al., 2019)

Screen time doesn't only affect children. Another study was made on 2,587 high school students for two years, shows that too much time using digital media, including social media can affect students with symptoms such as inattention (distraction and difficulty in organizing and completing tasks) and hyperactivity (impulsivity and having trouble sitting still). It was explained that too much gaming or social media does not cause ADHD but it may cause symptoms that are close enough (Ra et al., 2018).

There are widely discussed books, talks and research about how social media transform us into unsocial human beings. Researchers found that the internet has affected some children's social skills, especially reducing communication with family members, decreasing one's social network, and increasing depression and loneliness (Kraut et al., 1998). Three years later in a follow-up study, no negative associations were found by researchers. The correlation between internet use and well-being indicated that when people become more familiar with the technology over time, they may become less affected (Kraut et al., 2001).

2.2.3 How do social relationships affect children's mental health?

Mental health begins as soon as a child is born, even before a child can walk or talk. The first couple of years in childhood is crucial. The Mayor of London mental health report (2014) explains: Mental disorders first appear in childhood. Although measuring mental health for preschoolers is tricky, the early years can have a long-term impact that can be diagnosed later in childhood. As the author explains, mental illness can be noticeable when children grow up or when the child is capable of developing more interactive communication.

Social interaction during childhood is crucial to a child's development. Research by the Department for Education (2012) indicates that children with a high-level of social, emotional, and behavioral well-being perform better academically and are more engaged in school. The author discusses that these qualities affect children in school, especially in subsequent years, while demographic and other characteristics become less significant. It has been demonstrated that the absence of social interaction affects children's development in various ways. Researchers carried out a complex study that resulted in children who experience social isolation

can hardly obtain a college degree and are more prone to psychological distress (Lacey et al., 2014). Another evidence Miller (2021) discusses that it is common for students with learning and attention disorders to have social and communication issues; they have trouble connecting with other children and making new friends, which affects their mental health. She explains that this is a common challenge not only for children with Autism or ADHD disorders but also for some children who act a little bit socially awkward can cause them to be rejected by other children and expose them to bullying or teasing.

Children's mental health issues

One in ten children aged 5-15 in Britain has conduct, hyperactivity, or emotional disorder (Mayor of London, 2014).

Cost of Psychiatric disorders per child: The costs of child psychiatric disorders to London's education system are around £200 million a year (Mayor of London, 2014)

Children common disorders

Attention deficit hyperactivity disorder (ADHD)

Autism   Spectrum Disorder (ASD)

Post Traumatic Stress Disorder (PTSD)

Anxiety Disorder

Depression

Learning Disorders

2.3 Childcare and Nursing homes overview
2.3.1 Why does Early Childhood Education matter?

Expanding childcare services and preschools known as (ECEC) early childhood education and care (in group-based providers, preschools, school-based providers offering nursery provision, funded nursery schools, day nurseries, registered and private childminders) would benefit children and parents. According to research, ECEC can improve a child's cognitive, behavioral, social traits and educational outcomes, both in the short and long term, if high-quality care is provided (Blanden et al., 2019). Some studies indicated that the benefits of ECEC start as early as the age of two (Sammons et al., 2004). There is good evidence that children who attend ECEC are more prepared for school, attaining a good level of development that helps their learning capabilities when starting school (Becker, 2011). This example shows the positive ECEC effects worldwide, reporting that 5- years old children who attended a sort of preschool or childcare performed better than children who had not (OECD, 2011) . Not only do children who attend ECEC do well in school, but it also helps them boost their confidence and social skills, which prepare them for the workplace in the future (Sim et al., 2018). Several factors play a role in the quality of care, including the type of activities and social interactions, relationships children participate in, along with group size, the ratio of children to teachers, employment, and retention of teachers, as well as professional development and training of teachers (Blanden & Bonetti, 2020).

After 37 years of follow-up from a trial study in the US to explore the link between early educational interventions and adult health, the results showed improvement in behavioral and health risk factors, improvements in education, a good family environment, and a better income. However, the authors pointed out that they haven't noticed any improvements in physical health by the age of 40. (Muennig et al., 2009).

The most positive outcomes of children who attend ECEC have been shown to be specifically among children from disadvantaged families (Cattan et al., 2014). For instance, the use of ECEC is a strategy to improve the lives and development of specific groups, such as children living in disadvantaged households. More often, the problem with children from a poor background occurs when entering school, their academic skills are less advantaged than their colleagues, and they are often delayed in their competence and cognitive development in the

upcoming school years (Stipek & Ryan, 1997) (Sylva et al., 2013) As a result, ECEC helps narrow the gap between different social groups of children's development and attainment.

The number of working mothers has been increasing in modern society even when their children are young as more mothers have returned to paid employment rather than taking care of their children full-time. According to Bristol Association for Neighborhood Daycare (2022), many mothers struggle to take care of their young children while also fulfilling a career. As a result, quality childcare, affordability and availability have become essential. The association demonstrated the benefit of childcare and preschools for everyone, significantly impacting parents and society. It will help them increase their income and contribution to the community and society on a broader scale. Resulting in healthier family life - and a healthier national economy as well (Bristol Association for Neighbourhood Daycare, 2022).

According to the Office for National Statistics in the UK (2019) over half of the mothers (56.2%) said they had made changes to their employment for childcare reasons, compared with 22.4% of fathers. Over the last 20 years, the number of mothers in the labor force has increased significantly, with (66.2%) of mothers in employment in 2000 (Figure 6). Father participation in the labor market has also increased over the last 20 years, from 89.4% in 2000. From April to June 2019, 75.1% of mothers in the UK with dependent children were employed. In comparison, 92.6% of fathers with dependent children were employed see (Figure 6). In almost 20 years, the number of employed parents with dependant children rose by 9% for women and for men it rose by around 3.2%.

Employment rates of men vs women, by dependent children
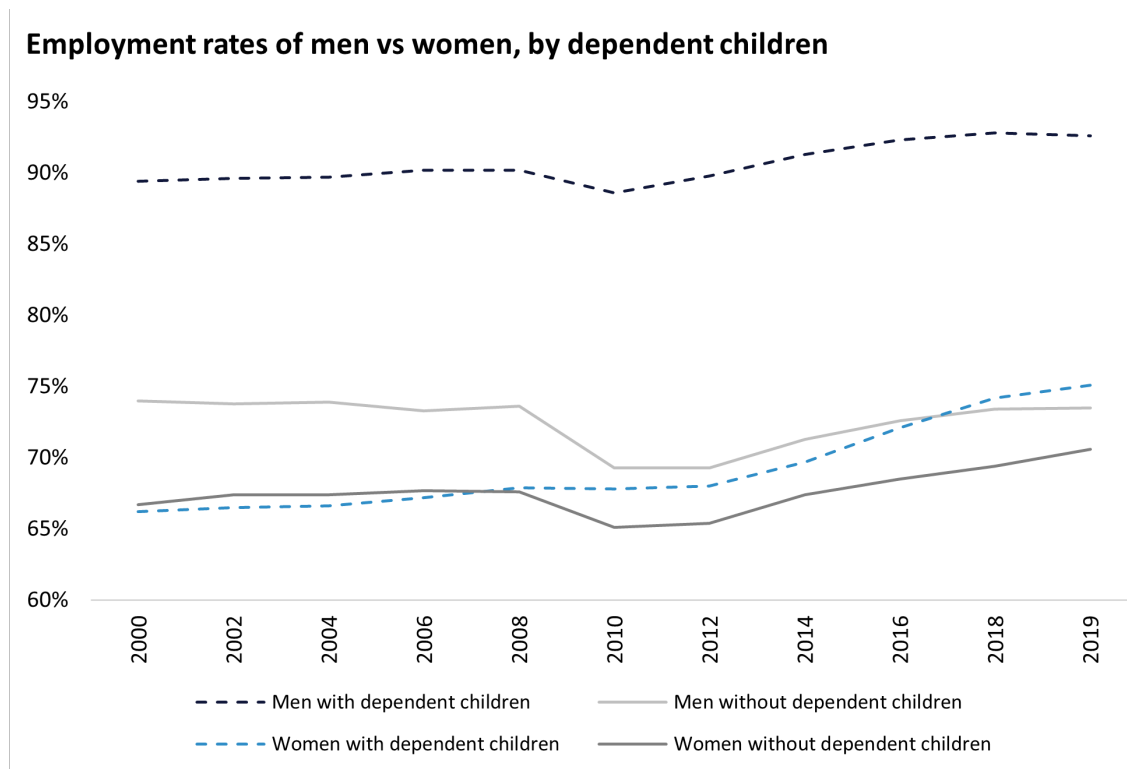
Figure 6. Employment rates of mothers in the UK

Source: Working and workless households in the UK, Office for National Statistics.

The survey of childcare and early year providers in the UK (2021) estimated to be 62,000 of preschool providers in 2021 and 66,000 in 2019 offering over 1.5 million places.

In 2021, the number of booked places of preschool providers was measured on a day. Among group-based providers, 507,300 full-day spot bookings. Followed by 365,400 bookings of morning sessions and afternoon sessions bookings of 293,400 children (Figure 7). For school-based providers, a total of 153,000 full-day classes bookings, along with 177,800-morning sessions and 128,500 afternoon sessions bookings. The total number of full daycare places bookings with childminders was 79,100. As per (Clark, 2021), the population of young children (aged 0 to 4) was estimated to be 3.78 million young children living in the United Kingdom in 2020. By analyzing the data in (Figure 7), if we add up the numbers of children going to ECEC in the UK, there are (1,704,500) of 0-4 children who attended some form of ECEC in 2021. Analyzing the given data means that almost half of 0-4 children (46%) in the UK attend childcare and any sort of early year services (before primary school).

Total number of booked childcare places (children booked to attend on a given reference day) per provider

England, 2021

507,300	365,400	293,400	153,000	177,800	126,500	79,100
Full day provision	**Sessional (morning)**	**Sessional (afternoon)**	**Full day provision**	**Sessional (morning)**	**Sessional (afternoon)**	**Full day provision**
Group-based providers			**School-based providers**			**Childminders**
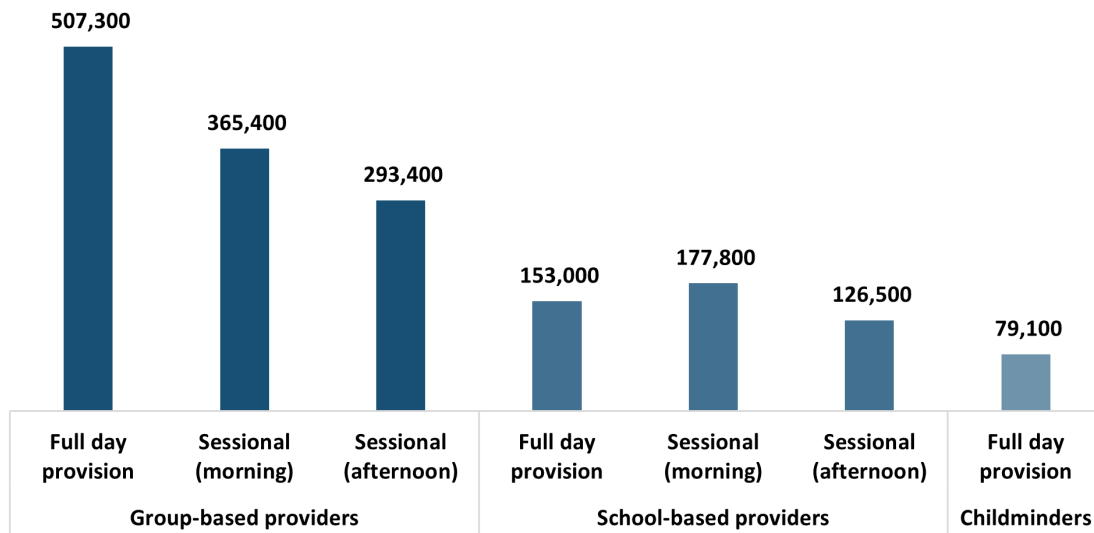
Figure 7. Total number of booked childcare places (children booked to attwn on a given reference day)

Source: Survey of Childcare and Early Years Providers 2021

2.3.2 The problem with childcare in the UK

Why do only 46% of children in the UK only attend a sort of ECEC? The cost of childcare in the UK is insane; parents can't afford childcare expenses especially in the early years. According to several organisations (PTS, Women's Budget Group, et al., 2019) who participated in a mega survey in the UK for 20,000 working parents: 96% said that the government is not doing enough to provide parents with the cost support or the availability of childcare. The government has inadequate childcare policies that leave women financially stressed, frustrated in their careers, and they are desperate for any changes in the situation. While 97% said that childcare in the UK was very expensive. 85% responses of the survey were women. See data from the 20,046 parents in the UK (Figure 8). The vast majority of parents (99%) believe that childcare ought to be considered part of our economic and social infrastructure, and that it should be adequately funded(PTS, Women's Budget Group, et al., 2019).

Of those surveyed, 97% said childcare in the UK was too expensive

| 0% | 25% | 50% | 75% | 100% |

Childcare in the UK was too expensive 97%

Govt undersupported cost and availability 96%

Cost had affected standard of living 92%

Cost/availability affected mothers more 82%

They used private nurseries for childcare 75%

They relied on grandparents for help 56%

Childcare cost more than rent or mortgage 33%

Shared parental leave was useful to them 17%
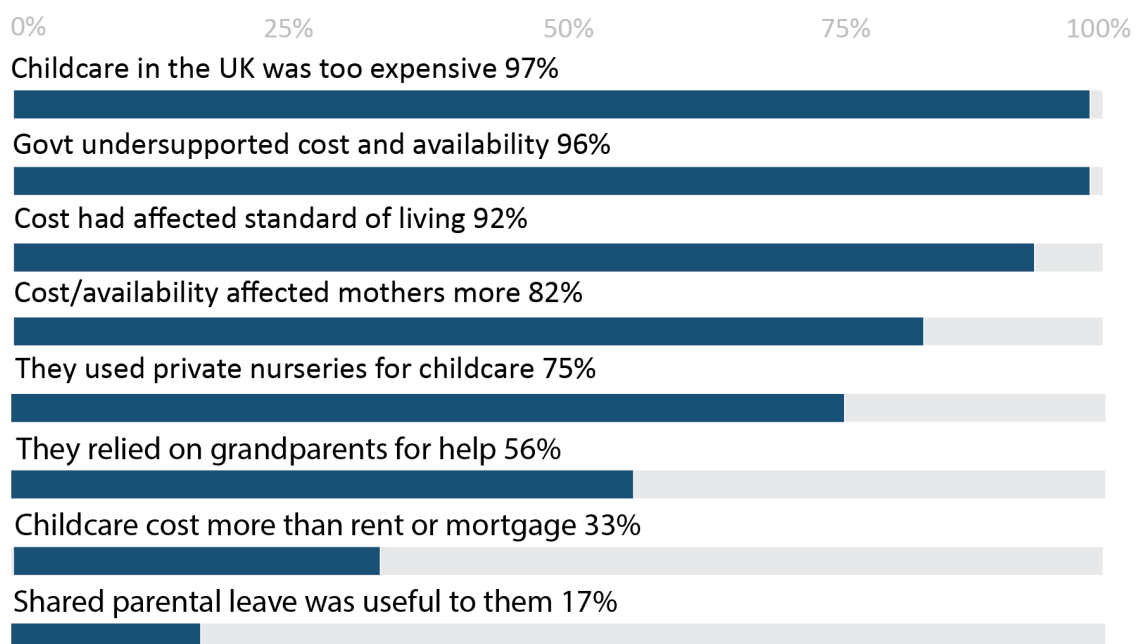
Figure 8. Data from 20,046 UK parents, 20 July to 31 August 2021. 85% of respondents were women.

Source: guardian graphic Mumsnet, Pregnant Then Screwed, TUC, Fawcett Society, Women's Budget Group, Gingerbread, Working Families, Fatherhood Institute and Maternity Action, Music Football Fatherhood, Mother Pukka, Tova Leigh, Black Mums Upfront, The Young Women's Trust, Cathy Reay (That Single Mum).

One year later, a petition about affordability and childcare funding gathered 113,713 signatures and prompted a discussion about childcare in parliament. Thousands of women asked the government to look up childcare costs in the UK as more than 97% of parents said that childcare in the UK was too expensive. Unfortunately, the request was rejected as they claimed that tax-free childcare was announced for working parents in 2021, which they think is enough (The Guardian, 2022).

According to the Organisation for Economic Co-operation and Development (2021), the UK ranks third in the world for childcare costs, and full-time place costs, after Slovakia and Switzerland. On average, a full-time program costs £12,376 per year.

The high cost of childcare has made it difficult for mothers to advance in their careers. An analysis released by the Scottish Widows organisation (2021) reves that women's savings after retirement will be half that of men after 65. For the average woman to reach the same pension pot as a man, she will need to work 37 extra years. This has created gender inequality among women.

A study by the (TUC) Trades Union Congress (2017) indicates that in England, the cost of nursery care for one-year-olds grew four times faster between 2008 and 2016 compared with wages. In London, it was more than seven times faster (Figure 9).

Figure 9. Growth in cost of childcare compared with wages. London grew 7 times faster than other places in Britain

Source: (TUC) Trades Union Congress (2017)

The problems with childcare are causing a lot of issues for parents. Among them is influencing the low birth rate in the UK. Two leading organisations in the UK, Pregnant Then Screwed and Mumsnet, have conducted the country's largest survey on childcare costs and its impact on families. 26,926 parent's respondents: 76% of women who don't have children say childcare costs are either the main reason they aren't having children or a factor in the decision. In fact, 62% of parents say that high childcare costs keep them from having more children. 98% of respondents said the government is not doing enough to support the early years sector (P T S, 2022). See the full data overview in (Figure 10).

Full data overview: Statistics showing childcare influence on low birth rate and other issues
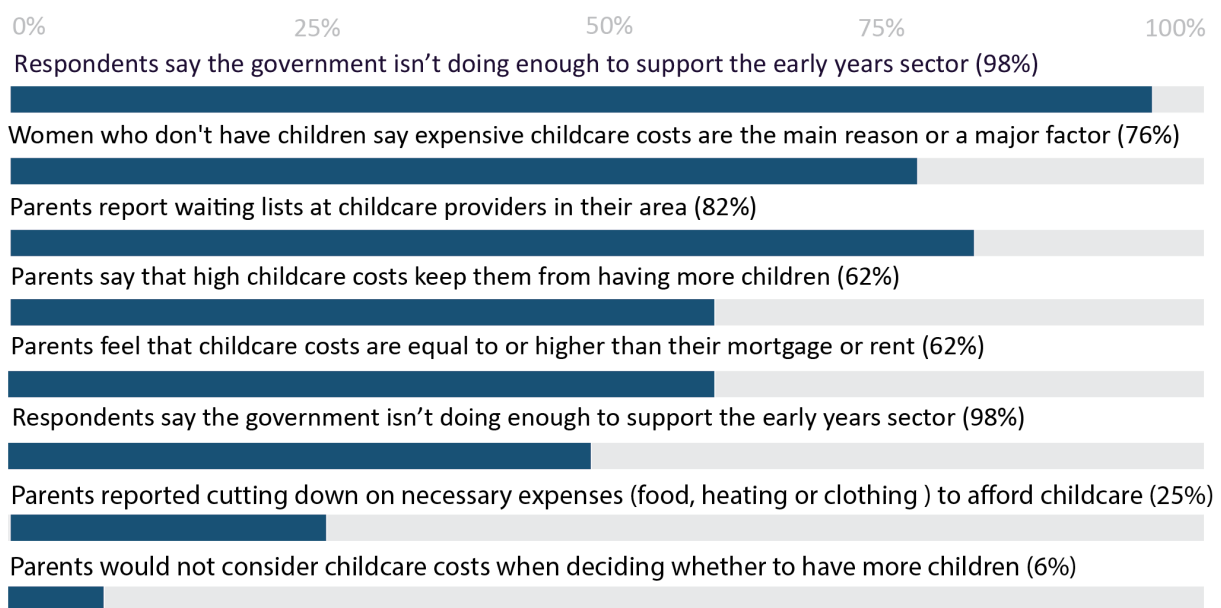
Figure 10. Full data overview; Statistics showing childcare influence on low birth rate and other issues.

Source: Two leading organisations for mums in the UK, Pregnant Then Screwed and Mumsnet, have conducted the country's largest survey on childcare costs and the impact they have on families.

2.3.3 Nursing Homes

According to the National Health Service in England (2021) demonstration, A care home is worth considering when older adults suffer from a medical condition and need assistance from a specialist during the day and night. Having someone to take care of your health can relieve some of the stress, which may help them focus on other things like their well-being and social life. The authors summarize the different types of care homes into two. A) Residential Homes: They provide accommodation, personal care and assistance with (shopping tasks, washing, dressing, taking medicines, Bathroom assistance and some activities). B) Nursing Homes: They also provide accommodation with personal care but with more efficient nurses on demand to provide nursing care.

As people age and their care needs become more complex, the demand for social services (formal or informal) will increase in the future (Kelly & Kenny, 2018). It is anticipated that the number of carers will reach 9 million by 2037 (Carers, 2019).

According to Triggle (2018), more than 30% of older people in England receive little or no support with their care needs. He stated that about 21% of older people in England receive help with their care needs from their local council/government, whereas 13% receive the help they need from privately funded sources. As for informal support, around 38% of older people receive the help they need from family and friends (Figure 11).
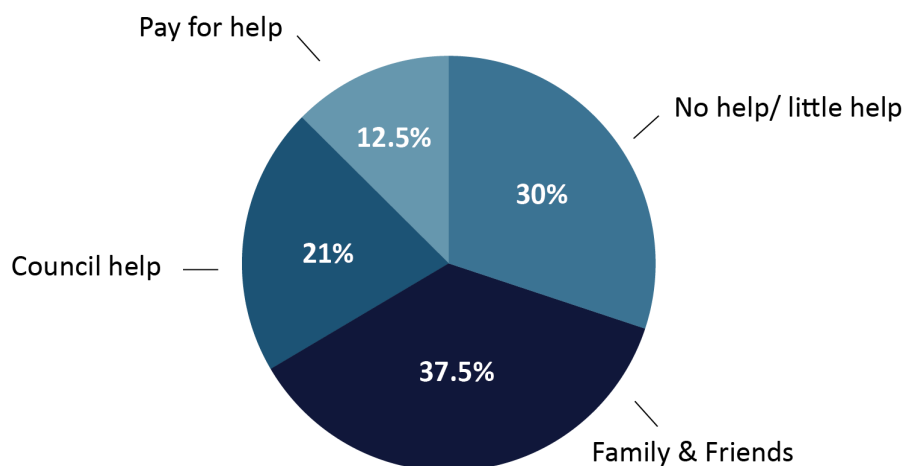
Figure 11. Where older people in England with care needs get help

Source: Age, UK, Laing Buisson, NHS Digital, Carers UK

In the UK, 6,000 people take on caring responsibilities everyday which is equivalent to over 2 million people every year. Besides, 3 out of 5 people are expected to become carers in their lives (Carers, 2019).

Over half of carers aged 65+ care for someone they live with and nearly 25% of family care-givers are 65 years old or older (Petrie & Kirkup, 2018). But the problem is an average of 69% of older adults carers (aged 60+) reported that caring for their elderly loved ones has negatively influenced their mental health that affected their health on a long-term basis. Another problem is over a third of older caregivers say they have canceled a procedure or treatment for them-selves because of their caregiving commitments (Carers, 2019).

Clapham (2005, p. 235) in his book Housing Pathways argues that sometimes older adults have needs that cannot be met in residential care and nursing homes as a result leaving home under these circumstances can be very difficult. They might lose all they are attached to, their home, belongings, furniture, freedom and independence, and their pets. He elaborates that the concept of home is a series of meaningful activities such as "dignity through per-sonal space; autonomy through choice; the expression of individuality through personal tase; self-esteem; the meeting of emotional need; risk-taking to undertake normal activities such as shopping and overall quality of experience." The value of personal clothing and possessions is stressed, as is the ability to form voluntary social relationships." By contrast, in some cases, Clapham (2005, p. 239) claimed that not everyone has a positive attitude towards home. Some older adults think of home as dignity, while others prefer to live in residential care rather than in isolation. But when speaking about lifestyle and identity, it must be borne in mind that older adults will continue moving to places offering them conveniences for shopping, socializing, and other needs (Scase, 1999, P.54).

Today, in the development of modern science and healthcare, some older adults don't need to leave their homes to be able to have this particular type of care. However, there is still a gap in the alternatives that would make them feel more independent and looked after at the same time. The NHS (2021) discussed other ways to get this kind of care or support, for example, 1) Home adaptations like adding ramps, security, fitting a stairlift or a stair banister, grabbing rails, widening doorways, and more. 2) Hiring a care worker to assist at home. 3) Moving to a

new home created for older people (Retirement villages, home share schemes, sheltered housing, extra care housing, or assisted living).

2.4 Intergenerational Contexts
2.4.1 What happens when the very old and young interact?

"A person is a person because of people" Zulu proverb. Although the idea of multi-generational living is not new, the concept dates back from old villages long ago when a parent owned a house and had their child and grandchildren all living together under one roof. Older adults help raise the grandchildren and parents take care of the older adults. This helped to foster social and cultural coexistence between generations. However, it is still present in some countries where children cannot afford to leave their parent's houses and live independently—learning from cultural, historical, and social beliefs to bring younger children and older adults together (Figure 12).

Figure 12. Romanian Village.

Source: www.flickr.com

According to Age Mobility UK (2018), in 1976, it was one of the early settings of the program; Shimada Masaharu merged a nursery school with a care home in Tokyo. As a result, more intergenerational care facilities opened in Japan and the United States due to the positive results. The authors indicate by evidence showing some research they made to verify how this model worked. A summary of case studies in (Table 1) demonstrates the impact of the intergenerational model on children and older adults' social interaction and cognitive performance.

- Impact on Older adults
o Impact on Children
… Impact on both

Social Interaction	Cognitive performance
• A study by BMC Geriatrics in Japan in 2013 discovered that older adults who were part of intergenerational care weren't only interacting with children and toddlers. Still, they found it more fun to have something new to talk about together and share smiles (Age Mobility, 2018).	• The founder of Apples & Honey, the first integrational care in Uk observed that older adults ignored their physical limitations and pushed their energy and capabilities through to engage in a conversation or got out of their chairs and move (Age, 2018).
… An intergenerational care research project in Australia by Griffith University of a project that began in 2017 found that many people only socialize with their generation, whether in their community, schools, or friends. As a result, intergeneration care solves this problem by bringing two different generations together, perhaps also allowing mothers from diverse backgrounds to interact (Age, 2018).	o In Apples & Honey, it was observed that children develop faster and become more responsible and are more considerate when moving around. Moreover, hearing historical stories from people who have lived longer gives the children a sense to appreciate the past and give the older adults a sense of self-value and fulfillment because children give them undivided attention (Age Mobility, 2018).
… Intergenerational programs enhance Social interaction between two generations as some children may not even have extended families living in the same country they are living in (Age, 2018).	• In a documentary by Evan Briggs (2017) The camera captures an older adult with a wheelchair asking a young boy about his name. "Max," the child repeated his name several times with admirable patience and the gentleman kept asking him again and again. He says, "Oh, Mack" the child repeats his name more concisely pronounced and even louder, "M-AA-XX" It was obvious that this conversation developed better communication, understanding and language for both.

o 200 preschoolers children in Intergenerational program research in the US conducted an enhancement in children's social skills and social development. Overall, the children in the experimental group 40% scored higher than the other group who hadn't participated in the intergenerational program (Rosebrook, 2002).	• In another scene from the same documentary, an old lady who has Alzheimer's, was able to speak clear sentences even though her speech was incoherent, and this happened when she entered the child's room. As a result, this interaction helped her access some parts of her brain (Evan Briggs, 2017).

Table 1. Results of intergenerational care programs that enhanced social interaction and Cognitive Performance for children and older adults

In the following (Table 2), we can see a different summary of case studies results of the intergenerational model, focusing specifically on how it impacted young children's academic performance.

Author	Results
(Hayes, 2003)	An older adult and preschool child daycare participation in NY conducted prosocial behaviors, empathy, eye and physical contact and verbal communication from both participants from less structured activities. Older adults with dementia developed a greater sense of well-being.

(Holmes, 2009)	In a nursing home with a childcare facility, 38 children in preschool were interviewed after one-year of interaction with older adults for one hour of daily sessions. Before beginning the study, 50% of the children positively described older adults. All the children ended up using positive descriptors at the end of the program, positive attitudes towards older adults was conducted, both age groups respected each other during the implementation and eventually their understanding and perspective about ageing developed.
(Dellmann-Jenkins, Lambert, & Fruit, 1991) (Dellmann-Jenkins et al., 1991)	As a result of 9 months of the careful intergenerational planned program in the US, children (3-4 years) social behavior improved towards infirm older adults.
(Marcia, Alicia, Parpura-Gill, & Cohen-Mansfield, 2004)	Preschoolers who participated in intergenerational programs in the US showed an increased willingness to cooperate and help older adults than those who did not.
(Rebok et al., 2004)	Surprisingly 3rd to 5th in the US grade children showed more attention, interest and participation in an assisted living facility in comparison to class participation as they were more anxious in classrooms. Among five older adults, they had revealed that they liked the intergeneration program and wanted it to maintain.

(Taylor, LoSciuto, Fox, Hilbert, & Sonkowsky, 1999)	In a short-term impact study between 6 public elementary schools in the US (a voluntary context). An intergenerational program between 1,194 children aged 5+ and older adults aged 60+ took place for at least 15 hours of interaction 3 to 4 days per week. A follow-up in third grade resulted in an improvement in children's academic performance and classroom behavior by specific tests and assessments. They found progress in reading, vocabulary, alphabet recognition, comprehension, expression, language and spelling. Moreover, the number of behavior issues dropped in some schools.
(Teater, 2016)	Middle schoolers benefited from intergenerational mentoring; it affected their sense of well-being, attitudes and knowledge about the school, elders, and their future.
(Newman & Ward, 1993)	"Time after Time" intergenerational funded project in the UK showed that intergeneration programs can provide older adults with an opportunity to age actively. The intergenerational project included engaging creative activities and events (Arts and crafts, singing, dancing, fish and chips lunch and more). The program enhanced the social skills, self-confidence and esteem of older adults as well as improved their emotional and physical health and well-being, and made them feel connected to the community.

Table 2. Results Concerning Academic performance and social behavior for children and older adults

In these experiments, the intergenerational program between children and older adults proved to be a positive one that solved many issues for both generations. Many studies show that social interaction decreases loneliness, a common problem in older generations, but can also delay mental decline, lower blood pressure, boost mental health and even reduce the risk of disease and death in older adults. For children, intergenerational programs proved that it enhances their social skills, academic performance, vocabulary, language, positive social behavior, less anxiety, and perception of ageing.

There is still much to be done to promote intergenerational studies; it's still in the early stages to assess the impact of existing models to help guide the development of future programs (Kaplan, 2002). A lot of cases are integrating nursing homes with daycares or preschools but not all older adults are in need to compromise their freedom and independence and go to nursing homes. Statistics show that 51% of people aged 75+ live alone (Age Mobility, 2018). Some of them might need to be looked after and be in a care home; others might need to conquer loneliness, social isolation and boredom. This will be studied in the field work (Chapter 5).

What if older adults who can look after themselves live independently in serviced residential apartments but share the common spaces, services and facilities with a preschool?

All interactions have an impact (Figure 13).

Figure 13.An older adult playing with a child by a slide

Source: Apples and Honey Nightingale, UK

2.5 Demographic Analysis
2.5.1 Study of aging in the UK

According to the office for national statistics (2022) be approximately 70 million. From 1960 until 2020, the total population of the United Kingdom grew drastically. In 1960, it was over 53 million people. Then, in 1990 it was over 62 million and it continues to rise as in 2020 the population is around 67 million people as we can see in (Figure 14). At the same time, the percentage of people aged 65+ from the total population is fast rising. In 1960, older people aged 65+ were over 12% of the total population. Then in 1985, it was over 15% and continued to increase, reaching over 19% of the total population in 2020.

Total Population and People aged 65+ as a % of Total
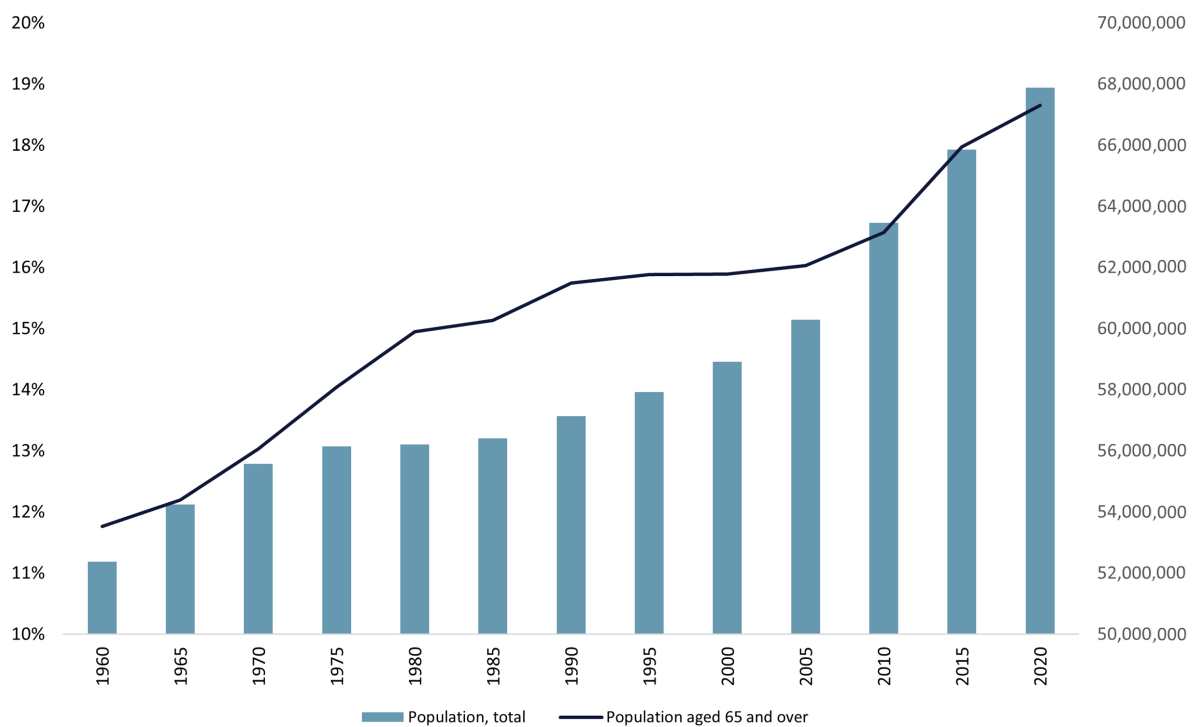
Figure 14.Total Population in the United Kingdom and number of people aged 65+

Source: World population prospects, UN, 2019

According to the UN population prospects, people in the UK who were born in 1950 lived on average of 68 years. In year 2000, they lived over 77 years and in 2020, they lived approximately almost 80 years. In 2100, people can expect to live nearly 90 years after adjusting for projected mortality trends (Figure 15).

UK Life Expectancy at birth (years)
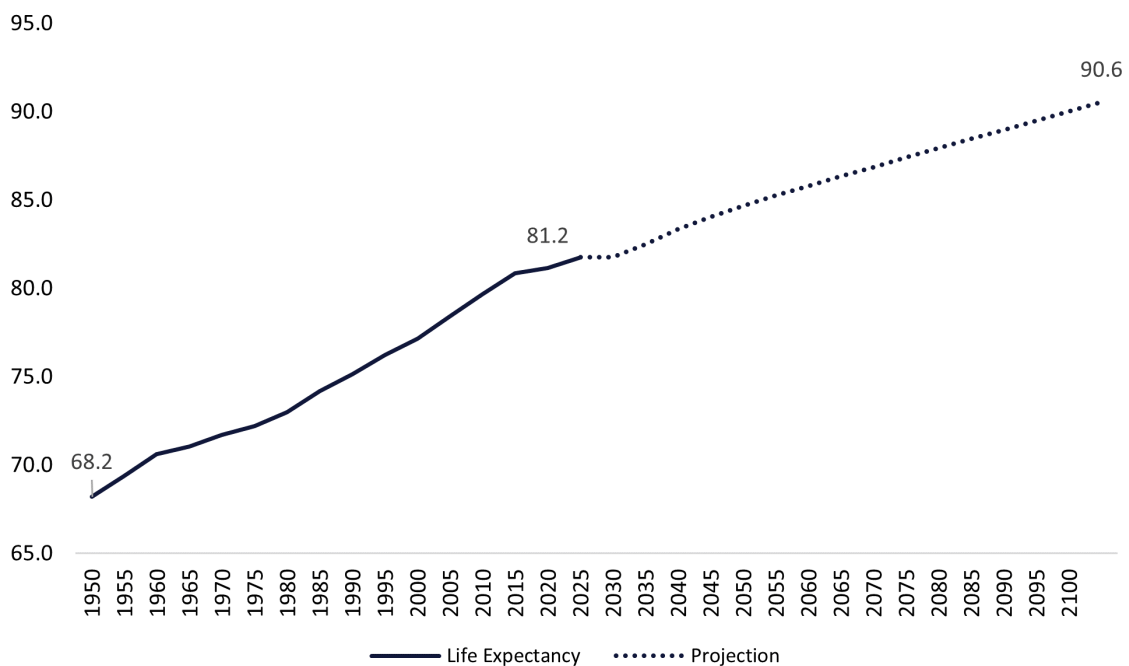
Figure 15.UK Life Expectancy at birth baseline projection

Source: World population prospects, UN, 2019

Across the UK, life expectancy at birth in the 1960s was 67 years of males and 74 years of females. The life expectancy at birth in 2018 to 2020 was estimated to be around 79 years for males and higher for females 83 years. This means that in 40 years, the life expectancy in males rose by 12 years and in females rose by 9 years (Figure 16). This will result in an increase in the older population in the UK over the coming years. According to the Office for National Statistics in UK (ONS, 2022) The number of people aged 85+ years was estimated to be approximately 19% of the UK population. This amount will increase by almost 70% in 2100 to be around 31% of older people (aged 65+) of the total UK population.

UK Life Expectancy at birth (year)
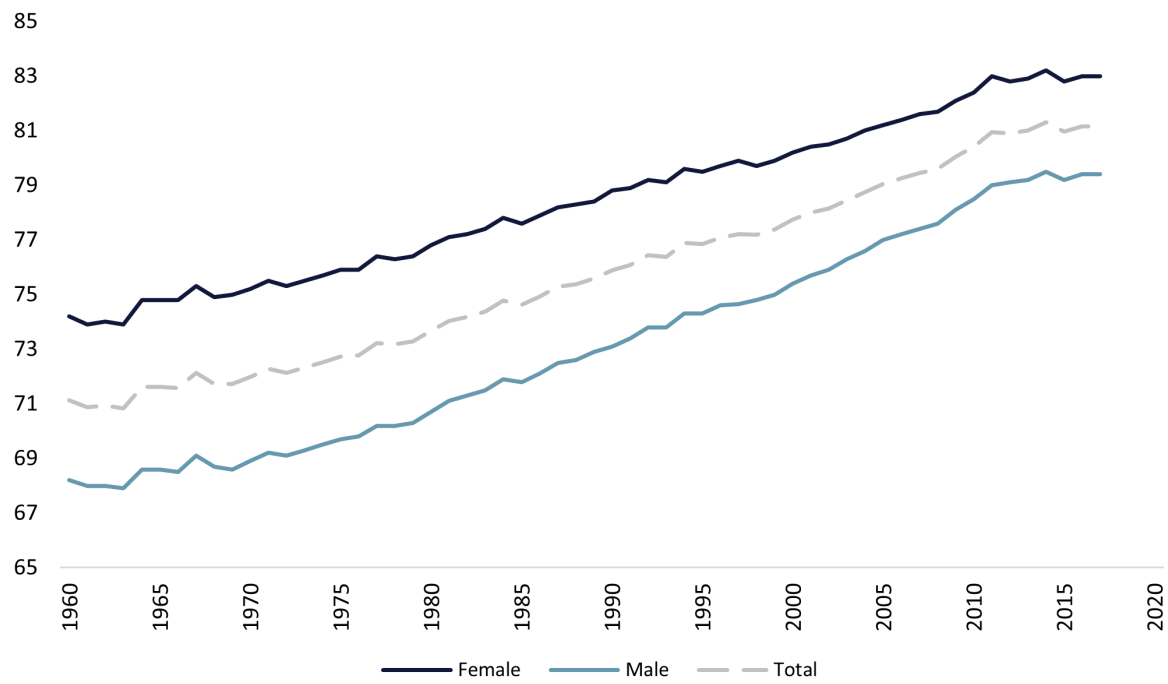
Figure 16. Change in life expectancy in the United Kingdom

Source: World population prospects, UN, 2019

The following data (Figure 17) compares the population structure between two age groups showing the percentage of older people aged 65+ and children from 3 to 5 years from 1950s projected until 2100 in the UK. In 1950, approximately 11% of the population was 65+. In 1985, almost 15% of the population. In 2010, nearly 16% of the population and in 2020, almost 19% of the population. Continuing to rise as of 2050, reaching 25% and by 2100 reaching 30% of the total population. When analyzing the children's projection, it does not vary considerably like in the older age group. Children aged 2 to 5 years in 1950 were almost 5% of the population. In 1980, almost 4% of the population and continued to decrease slightly and increase between 4% and 5% until 2015. It remained almost consistent from 2020 and is expected to remain so until 2100, also between 4% and 5% of the total population.

UK Population, % by age group
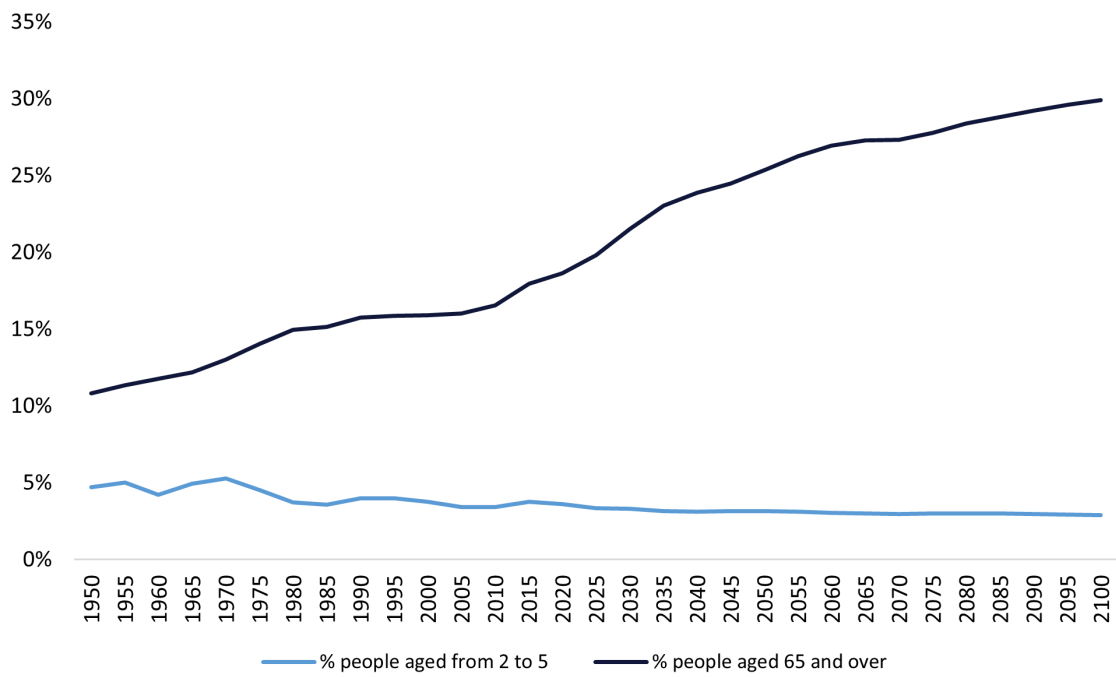
Figure 17. People aged 65+ and Children aged 2-5 years population projection

Source: World population prospects, UN, 2019

2.6 Literature hypothesis
2.6.1 Root cause analysis

The root cause analysis, also known as a Why Tree (Figure 18), explores the underlying cause and effect relationship of the core issues observed in older adults and children in the literature. As examined in the literature review, older adults are often lonely and socially isolated, leading to significant mental health problems. As for children, several factors were analyzed that can potentially impede children's development and academic performance. In the root cause analysis, each of the above core issues was traced to its underlying root causes in an attempt to identify possible urban policy responses to tackle these problems.

Figure 18. Root Cause Analysis of literature hypothesis

Method: Illustrator

CHILDREN

POOR ACADEMIC PERFORMANCE + DELAYED DEVELOPMENT — APPARENT OBSERVATION

POSSIBLE CAUSES

INATTENTION PROBLEMS

SOCIAL SKILLS DETERIORATION

HYPERACTIVITY AND IMPULSITIVITY

AGGRESSION

ANXIETY + PTSD

EXCESSIVE USE OF TECHNOLOGY AND SCREEN TIME

DECREASED SOCIAL NETWORK

SOCIAL ISOLATION — MAJOR CAUSE

CHILDREN SPENDING MORE TIME AT HOME

UNAFFORDABLE EARLY CHILDHOOD EDUCATION AND CARE

EARLY CHILDHOOD EDUCATION AND CARE AVAILABILITY

LOW SUPPLY OF CHILDCARE

URBAN POLICY FAILURE — ROOT CAUSE

Older Adults

Mental health statistics: depression affects 22% of men and 28% of women aged 65 and over in the UK, yet 85% do not receive the health care needed from the NHS (Royal College of Psychiatrists, 2018). One of the reasons why they are depressed is because they feel lonely (National Institute on Aging, 2021). Feeling lonely negatively impacts their health. Among the root causes of feeling lonely is social Isolation, which is naturally associated with low levels of social interaction. Why do older adults have less social interaction? One of the factors is that they live alone, which is true for majority of people aged 65 and over (See Problem statement in Introduction).

When tracing the root cause of why they live alone, I found that some older adults prefer to age in place while maintaining Independence and freedom. Why? One reason is that they do not prefer living in a care home. That is because they prefer a place that provides the possibility of living in a community with some level of independence, which is now defined as their "ideal" (Van Hoof & Boerenfijn, 2018). As explained in (2.1.3 Socio culture changes), the new third old age is the beginning of a new 30 years of enjoyment. Some older adults have needs that cannot be met in care homes, as explained in (2.3.2 Nursing homes). One of the factors involved in not wanting to live in care homes is that older adults are in good physical health. An average of 20% of older adults aged 60 and over suffer from mental and neurological problems, while only 6.6% of older adults aged 60 and over have disabilities (WHO, 2017). Now, why should living alone lead to social isolation and low social interaction? Many older adults live in their own homes; it is relatively rare for them to live in retirement housing or care homes (Age, 2019) Only 4% of UK older adults' total population aged 65 and over live in care homes and 15% of those aged 85 and over live in care homes (Laing and Buisson Survey, 2016)

A main root cause for the above problem was identified as an urban policy failure on the part of UK policymakers. Although they have been aware of the problem and progress was made, they remain behind the curve on what needs to be done to address the issue fully. Despite the existence of a "housing for older and disabled people" government policy that sets guidelines for local governments when preparing older adults' housing planning policies (GOV UK, 2019), there remains a significant mismatch between demand and supply. One reason behind this is that the structure of this type of housing policies in the UK social sector seems to not encourage an increase in housing supply but rather prohibit it, despite the rapid growth in elderly popula-

tion in the UK (Harding et al., 2018). This, in addition to the application criteria for co-housing or retirement housing arrangements often being too constraining, such as being means-tested, further suppresses available supply and exacerbates the issue at hand. Additionally, a lot of the existing properties that target older adults are not attractive enough for them as an alternative to their significantly larger sized properties because it does not allow enough space for a hobby or for having family over (The Guardian, 2019). This all further strengthens the hypothesis of an existence of a supply-side issue in provision of housing for older adults.

According to the Center for Ageing Better (2022), out of members of the public who were surveyed in a study only 19% said the government was doing enough to support the ageing population, and majority of respondents felt it is becoming very challenging to ensure a decent life for older people. Good mental health and social interaction are important for promoting older people's health, preventing disease and preventing chronic illnesses. The government needs to turn its focus to the needs of older adults to tackle the issue of depression. The world's population is ageing rapidly and is expected to double as mentioned in (2.5.1 Study of ageing in the UK); policymakers need to consider the changes affecting the urban environment, especially because it is becoming very challenging for older adults. According to the Government office for science's report about the future of ageing (2016), the demand and importance for appropriate housing that meets the changing needs of older people will increase in the future. There will be a growing demand for housing that caters to the changing needs of older adults due to the ageing population to reduce the demand for health and care services. Not only is it crucial to ensure new housing that can adapt to people's changing needs, but it was stated the importance of thinking 'beyond the building' to include the neighborhood and community for social engagement of older adults otherwise, homes are likely to be less effective without improvements in the neighborhood. Particularly, to socialize and access services.

In summary, older people face an elevated risk of mental illness because of their increased likelihood of being depressed because of feeling lonely and socially isolated because most of them live alone and do not have enough social interaction. These are direct effects of urban policy failures by the UK government that must be addressed sooner than later. The benefits of resolving that issue simply far outweigh the costs, not to mention the severe consequences of it remaining unresolved. As mentioned by (McDaid et al., 2017), every £1 invested now in addressing loneliness would save £3 in healthcare costs in the future. Urban policy should aim

to address loneliness in urban communities and urban lives, which would be socially beneficial for older adults in terms of the community's improved livability for ageing-in-place.

Children

Similar to the analysis that was undertaken for older adults, root causes of observations about children were analyzed to form an understanding of their underlying causes. Several factors were also analyzed that can potentially impede children's development and academic performance. In the root cause analysis, each of the above core issues was traced to its underlying root causes to identify possible urban policy responses necessary in tackling these issues.
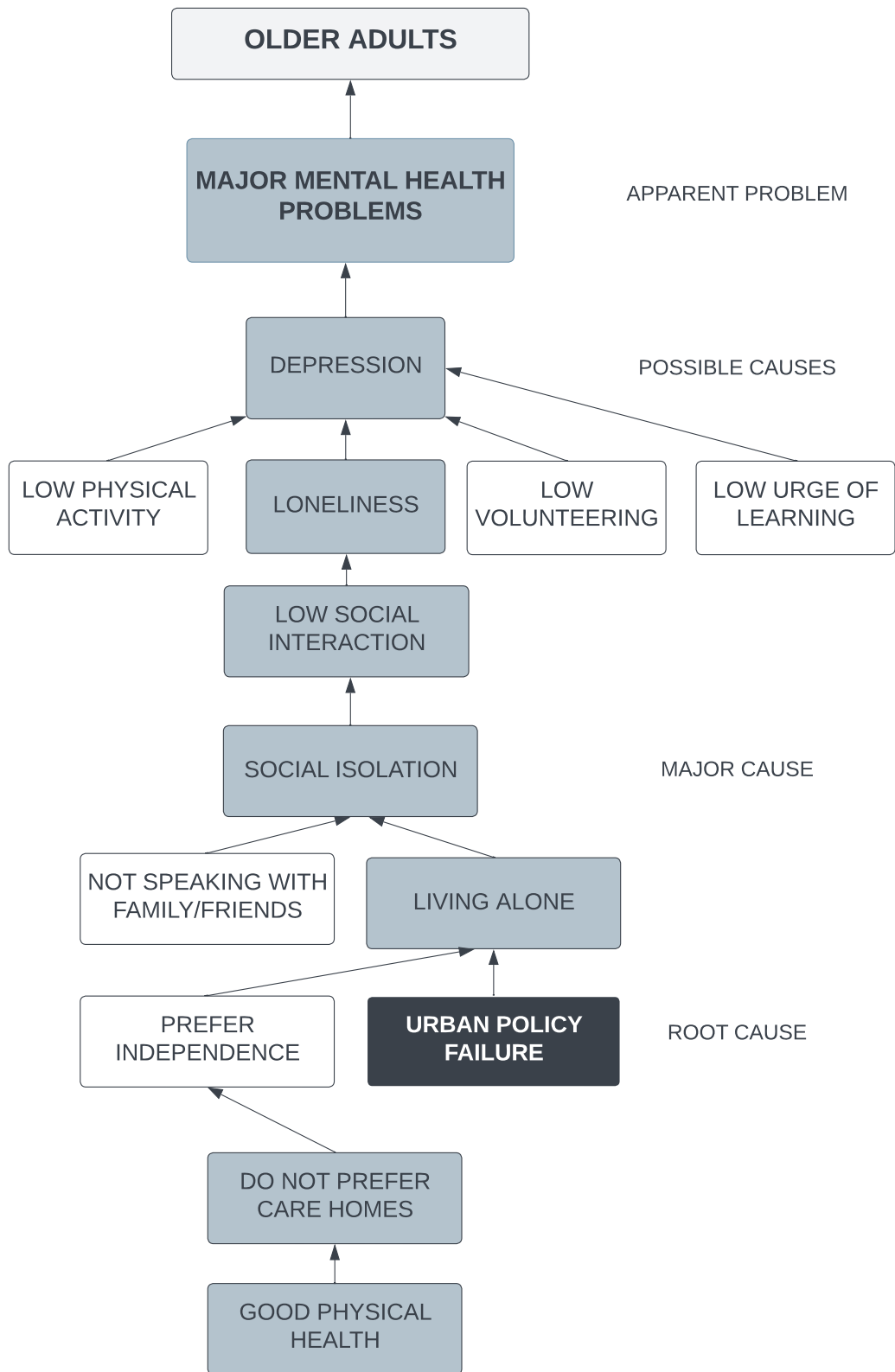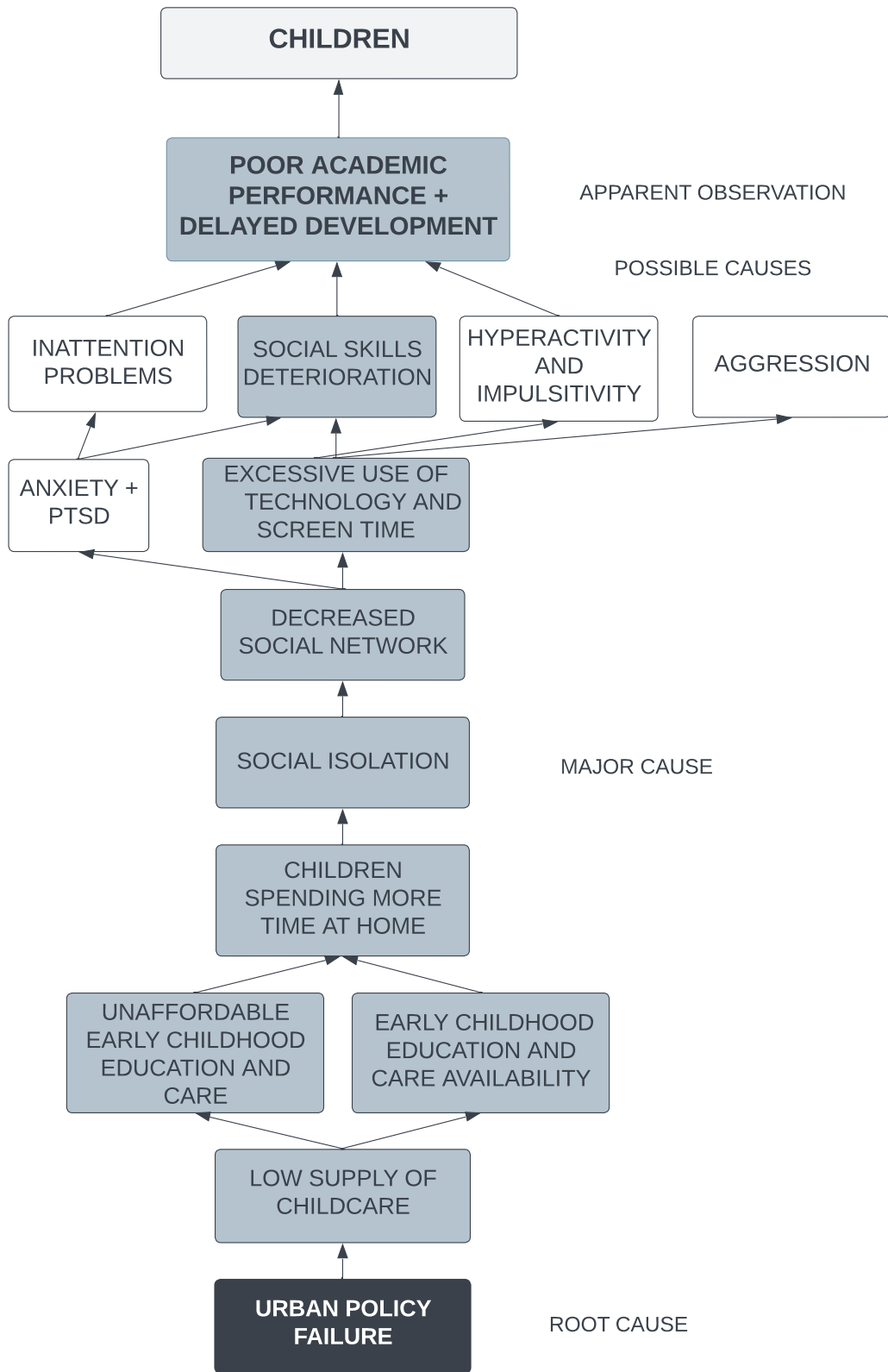
Children with inattention problems, distractibility, and Poor Social Skills face challenges that may lead to Poor Academic Performance and Delayed Development. The following reasons were identified when tracing down the root cause of why children's social skills are deteriorating and why they are distracted and have Inattention problems.

As established in earlier sections part (2.2.2 Technology, social skills disruption and other circumstances), excessive use of Technology and screen time beyond an acceptable threshold can be a direct effect of children's suboptimal social network size.

Why do children at this age of 2-5 years have a Decreased Social Network? One factor is because children spend more time at home nowadays. Why? Because Early Childhood Education and Care facilities are unaffordable and lack availability. Why are they unaffordable and always booked? Due to higher demand and low supply of childcare facilities. This has created segregation among families with children, as mentioned in part (2.3.1 Why does early childhood education and care matter?)

The problem of unbalanced supply and demand in the provision of childcare facilities is a market failure that UK policymakers are not doing enough to address. As of 2017, only two-thirds of London city authorities had the capacity to deliver childcare for children aged three and four and only one-third had the capacity for two-year-old children who were eligible for free early education (McNeil & Cory, 2017). Childcare affordability is another problem the government is not doing enough to help parents mitigate. 'Free entitlement' to early education is only 30 hours per week for 38 weeks per year and it only applies to children aged three and four. Two-year-old children are only eligible if both their parents are not working, which makes them most disadvantaged as per the government's criteria (McNeil & Cory, 2017). These 30

hours are already an upgrade from the pre-2017 level of 15 hours, but it clearly is not sufficient still. This is because some studies indicate that the benefits of ECEC start as early as the age of two as mentioned before by (Sammons et al., 2004), so to start at three is already too late. Also, means-testing early education support against the employment status of parents might impede parents from joining the workforce if it means they lose entitlement to free early education.

In response to a survey done in the UK, 98% of respondents said the government does not offer enough support during early years of childcare and 76% of women who do not have children said childcare costs are either the main reason they are not having children or a factor in the decision (P T S, 2022) This has been a major influence on the low birth rate in the UK as mentioned in (2.3.2 The problem with childcare in the UK).

Not only to give opportunity for children but for mothers not to have to make any career changes because of their children and promote equality within society as mentioned in (2.3.2 The problem with childcare in the UK).

According to (The Guardian, 2022), on a recent petition about affordability and childcare funding gathered 113,713 signatures and prompted a discussion about childcare in parliament. Thousands of women asked the government to look up childcare costs in the UK as more than 97% of parents said that childcare in the UK was too expensive. Unfortunately, the request was rejected as they announced a tax-free childcare for working parents in 2021.

Social policy, public financing and adjustments to current urban planning regulations is needed to increase supply of childcare and preschool facilities in the community and create more child responsive urban settings to support and develop a child's cognitive and socio-emotional skills. Expanding childcare and preschools is a strategy to improve the lives and development of specific groups, such as children living in disadvantaged households (Cattan et al., 2014). As a result, ECEC helps narrow the gap between different social groups of children's development and attainment, support parents specifically mothers. ECEC help children social interaction, communication skills, prepare them for school and their future careers. As mentioned in (2.2.3 How do social relationships affect children?), Social interaction during childhood is crucial to a child's development. Research by the Department for Education (2012) indicates that children with a high-level of social, emotional, and behavioral well-being perform better academically and are more engaged in school and their future.

3. PROPOSED SOLUTION

3.1 Rethinking Intergenerational living

3.1.1 Project Brief

The idea of the thesis will address two of the SDG objectives, "Good health and well-being" and "Quality ed¬ucation," by exploring the concept of integrating a preschool inside an older adults' residential community with serviced independent apartments. By working on the cluster of policies aimed at influencing the development of urban areas and urban lives, focusing on the users' social needs. Proposing a model that will help solve the loneliness and boredom that can af¬fect older adults' mental health while integrating a preschool inside the same community. The aim is to enhance children's social interaction, behavior, academic performance, and social skills and help them get exposed to the real world while also giving older adults the fulfillment of self-worth and enhancing their cognitive performance and wellbeing. Social isolation and loneliness have a negative impact on mental health and wellbeing. Perhaps also physical health complications, as stated in the literature review (parts 2.1.1 and 2.1.2). Childcare facilities in the UK, specifically London, are becoming very expensive. Not all children now and even more in the future would be able to attend ECEC, which might affect their academic and social skills, as we discussed in (parts 2.3.1 and 2.3.2).

There are very few options available regarding housing for retired or independent older adults who don't have significant concerns related to their physical health and are not in a good need to be in nursing or care homes. One of the objectives is to help older adults remain living independently by providing residential apartments with a fixed form of mental support and sociability that children will give and specialized services for their needs.

In the same community, we propose an integrated programme of serviced residential units with facilities for retired older individuals, as well as a preschool. The "Get along" concept means having a harmonious and friendly relationship between the two targeted groups.

Both generations share the common areas, the outdoors, services and facilities under one roof yet have their individual spaces for privacy. The goal is to propose a sustainable integrated model to develop a spatial pattern that can enhance children's social interaction behavior, academic performance and cognitive performance and solve the problem of loneliness and social isolation for the old.

By addressing the needs of our targeted groups older people and children (besides mothers), the primary concept of this project is to create a vibrant socio-spatial environment. Both targeted groups interact and engage socially with each other through strategic and informal intergenerational activities. Creating an intentional community as a living environment where significant interaction between two age groups is the norm rather than the exception. Both generations blend casually or formally where each one has a role with a commitment to something beyond their comfort zones or interests but will create a benefit for each.

3.1.2 Summary of Benefits for target groups

The proposed study aims to help mainly target two groups Older adults and Children (Preschoolers aged 2-5 years), while the secondary target group is mothers. After doing the literature review and examining the benefits and findings of previous research.There has been empirical evidence proving that putting children with older adults in an intergenerational context (e.g., childcare and care home or having children visiting care homes certain hours a week) led to positive outcomes. Both groups benefited from the program.

Mental health issues among older adults must be taken seriously as physical health. Almost half of older people aged 75+ in the UK live alone (Age, 2018), which can lead to depression. My main observation was the little consideration given to older adults who are in a moderate physical health condition and can live independently and don't necessarily need to be in care homes but suffer from loneliness. Especially when I examined the facts in numbers as mentioned in the literature review by WHO, the ratio of older people having mental problems (higher than) physical problems in the UK (part 2.1.2).

Therefore, the idea of the serviced residential apartments was proposed for this research and tackling social isolation and loneliness factors that contribute to depression risk by integrating a preschool in the same community. Moreover, little attention was given to mothers, specifically the working mothers who suffer to find quality and affordable ECEC.

Research shows that social interaction reduces loneliness, a common problem among older generations, can lower blood pressure, boost mental health, and even reduce the risk of disease and death among older adults. For children, intergenerational programs proved that it enhances their social skills, academic performance, vocabulary, language, positive social behavior, less

anxiety, and perception of ageing. What do the preliminary results of the case studies analyzed in the literature review show about the proposed idea? Herewith is a summary of how intergeneration programs benefit Older Adults, Children and Mothers (Figure 19).

Older Adults:

- Helping older adults aged 65+ who are actively ageing without major concerns related to their physical health to remain living independently in serviced apartments that are competent with their needs and overcoming loneliness simultaneously.

- Improving their mental health and well-being through social interaction with children is proven in the literature review as sociability plays an essential role in protecting people from the experience of psychological distress.

- Give older adults a sense of self-value and fulfillment because children give them undivided attention.

- Delay mental decline, and lower blood pressure.

- Reduce the risk of disease.

Children:

- -Underlining the importance of preschool and ECEC for children (aged 2 to 5 years).

- How elder child social interactions help them develop their social behavior and improve their academic skills at a younger and older age.

- Positive social behavior, less anxiety.

- Understanding the real world and having a perception of ageing.

Mothers:

- Helping employed parents with the availability of more quality ECEC and preschools, specifically mothers so as not to make any career changes due to their children.

- Help parents work.

- Making more available quality preschools has become essential.

- Assist parents with the development of children socially.

- Support children with Autism and ADHD as it has proven that social interaction helps in these disorders.

- Advantage for parents to develop in their careers and increase their income.
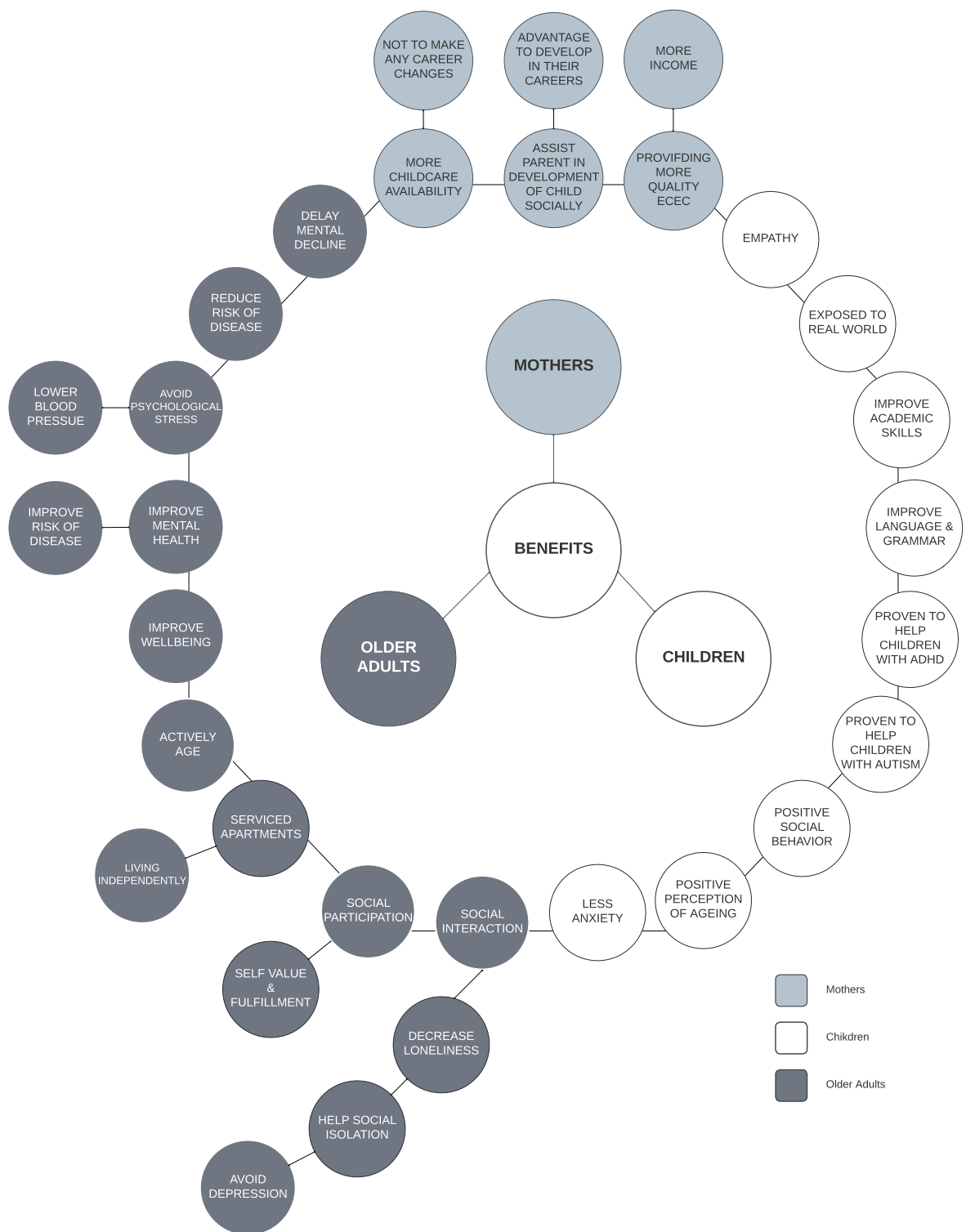
Figure 19. Summary of how the Intergeneration program benefits for Older Adults, Children and Mothers

Methos: Illustrator

The study aims to test the tolerance of the intended multigenerational program proposal among older adults, children and mothers. Then, generate information and examine major problems of older adults and children and how they can be linked. Proposing a comprehensive framework and a multidimensional context by identifying the users' needs and wants and how it can be enabled through urban sociology—integrating social sciences into urban planning policy to promote a comfortable and healthy living environment for users.

3.1.3 Serviced apartments for new needs

Population ageing is a global phenomenon (ONS, 2022). Which will create more challenges in the housing market shortly. Ageing populations place greater demands on health and social services (RHG, 2017). Increased housing alternatives for older people should be a fundamental consideration in urban planning policy for the future.

According to the Retirement Housing Group in England (2017), several older individuals will want or need to relocate to specialized retirement homes for several reasons. A) A desire for increased security or companionship, especially following the loss of a spouse. B) To cut the expense of heating and maintaining a larger home, 59% of senior homeowners, 29% of private renters, and 16% of social tenants have two or more spare bedrooms. C) When physical mobility is constrained, and the current housing is inappropriate for adaption. D) Unsuitable Location and lack of access to public transportation. The report mentioned some of the benefits of retired housing: A) Return from the hospital earlier to a more accessible and helpful atmosphere. B) Health issues caused by slips, accidents, falls, cold, and social isolation are reduced.

What type of older adults' housing are we proposing? Independent living but collective living in the city: A retirement community built and maintained to suit the housing and support the needs of older people. Unlike in care homes, the proposed accommodation is self-contained, individual serviced apartments for each person with communal spaces and facilities (Figure 20) and (Figure 21). The accommodation services are not like care homes related to dressing, washing and eating. Instead, it's for older individuals in good health conditions who would rather live in an assisted community. The services are related to cleaning and home maintenance services, e.g., some older people can't change a bulb by themselves.

Figure 20. Retirement Housing Scheme, Anchor – Keble court, England

Source: https://www.anchor.org.uk/

Figure 21.Communal spaces, Anchor – Keble court, England

Source: https://www.anchor.org.uk/

Helping older people to move will help their quality of life and free up more homes for more efficient land; this will potentially help the housing market, which this research will address thoroughly in part (part 5.1.3 changing in housing demand).

3.1.4 More than childcare

Children are the future of every nation, and people have always worked to help them achieve the most throughout their life. Today's children have more complex needs and issues; as we have explained in (part 2.2.1 children in the modern era), issues should be solved and needs to be addressed.

The intergenerational model will offer beyond childcare facilities that will help and develop children's social interaction, academic skills, social behavior and cognitive performance. A preschool that will provide early childhood education and care for children and assist in developing a variety of abilities that will prepare them to begin school and make them ready for the real world. Why is the preschool age-targeted for this research? Preschoolers develop so much at the age of 2 to 5 years old. According to the Raising Children network (2020) A), the preschool age is when children can develop the most. B) They like being around people. C) They start to develop speech and by 4-5 years, they love telling stories and having conversations. The community's interactions with older people will be planned accordingly to the children's education and development goals. E.g. the Raising Children network (2020) suggested for this age, activities like turn-taking play or creative play, indoor and outdoor games and simple cooking activities are suitable for development. Moreover, children can sing, play, do theatrical performances for their older friends, listen to their stories, or older people can read to them. As a result, it will help them develop their seeing, hearing, communicating, movement, motor skills and more.

Children need to be part of the real world. Our environment now requires excellent social skills, which should be acquired in childhood. Social skills provide children with several advantages, including academic performance and confidence, which will help them easily communicate and improve relationships with their peers in the future. The intergenerational model will help children develop and at the same time, give them an unconditional role towards their older friends.

3.1.5 Spatial aspects and Communal areas

From a spatial point of view, the intergeneration between children and older people takes place in the 'shared spaces' while enjoying the dignity and independence of their 'own spaces'.
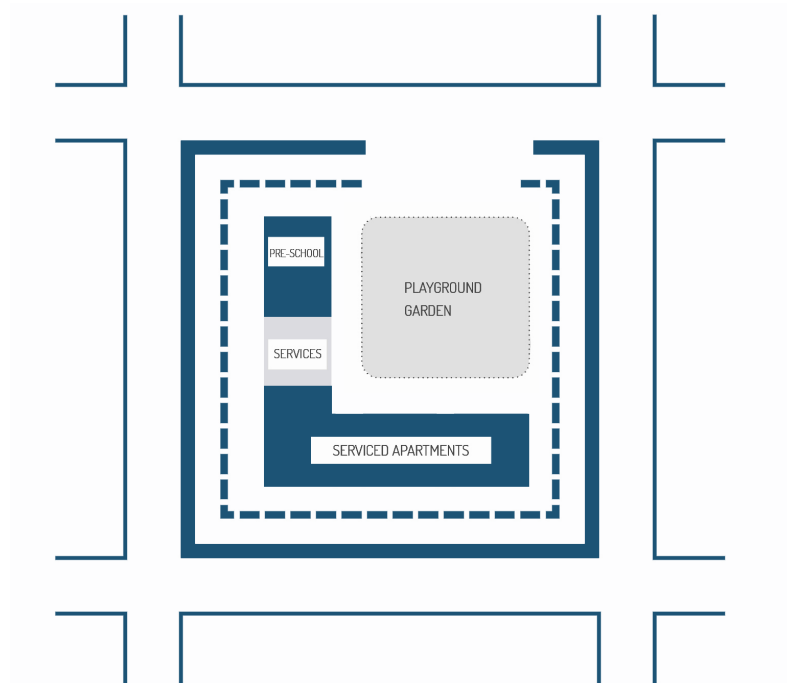
Figure 22. Diagram that shows a provisional area of the sharred and private spaces.

For both, well-designed communal and good circulation spaces to ensure comfort and access for all. The main intergenerational activities will occur in the playground/garden and the communal lounge to foster daily and evening socialization needs to create a good balance of natural and artificial light. Shaded areas of the site could be used for activities such as gardening. Examples of mutual amenities could include a tea kitchen that can be used for cooking classes for children and older adults. Furthermore, a room that could be used for special events, theatrical performances or any celebration that could be shared by both age groups where they both get entertained.

The site layout should be arranged to achieve so that usable outdoor areas are created; directly accessed from the main communal lounge. We encourage the courtyard/playground to be south-facing, creating a warm garden atmosphere that will encourage users to venture out

and use outside spaces. If possible, the main circulation and the in between corridors could overlook the garden to assist orientation and to promote a sense of community.

For children, The 'preschool' block is on the ground level, located as a separate sheltered block in the garden with direct access to the playground. We encourage using glass in the block to increase the amount of natural light in their unit. A covered shaded terrace is incorporated in the space. A Large natural outdoor garden includes a playground for informal learning and good outdoor opportunities and experiences. Adjacent to the children's playground, a 'semi shared space" is a big open space with non-structured interiors, allowing small group activities for different aged children. The open space include a spacious indoor environment with flexible space for lunch with a close-by WC. No adjacent walls allow older people to join or leave the activity anytime they desire. These spaces are dedicated for children, however we want to encourage an open space with older people to visit children whenever they desire. As a result, this will encourage acceptance of others and then the opportunity for friendship (waving and being familiar with each other).

For Older Adults, Housing for older adults is critical to preventing social isolation among inhabitants. A well-planned site can provide access to the larger community. Accessible housing should be a priority. The site of the intergeneration program should be in a good accessible location by public transport with entrances of drop kerbs to ease the accessibility for wheelchair users, bicycles and strollers. A safe environment close to local facilities such as grocery stores, libraries, shops, health centers, and post office services.
At the same time, consider the individual apartments in a separate zone away from children for privacy purposes. There should be communal spaces for older people and their friends only without children if they want to get along separately. A communal lounge for them to read, a place to relax and ensure comfort and access for all. Environmental aspects, such as Passive solar gain, cross-ventilation, avoiding blocked corridors, etc. (Figure 23), will also offer insights and good visual access. Dementia-friendly design principles should be incorporated into the apartments (Figure 24).

Figure 23. The courtyard garden perspective view.

Project: Low Income Senior Housing, 2022

Source: Witherford Watson Mann Architects

Figure 24. One of the glazed galleries perspective views.

Project: Low Income Senior Housing, 2022

Source: Witherford Watson Mann Architects.

4. URBAN POLICY

4.1 Urbanisation and cities: a global force

4.1.1 Urbanization and social structure changes

In this chapter we will discuss the vast urban growth in the city of London, which originally triggered the introduction of intergenerational model and the idea of integration as a solution for a densely populated city. Before we analyze how Greater London grew to become the most dynamic economic city in the UK, we must zoom out and understand the global perspective on urbanization, which is a global force that has challenged the world's economic, social, and environmental regeneration.

The world is highly urbanising. The United Nations Department of Economic and social affairs (UN DESA) has been regularly issuing a data set since 1988 with revised estimates and projections of the World Urbanisation Prospects of all countries and their major urban agglomeration. The UN DESA (2018) says the world urban population is around 4.4 billion people, more than the total population in 1975. Today, 55% of the world's population lives in an urban setting. The proportion is expected to increase to 68% by 2050 compared to 15% in 1900 and 34% in 1960.

What is Urbanisation? In the book Cities transformed: Demographic change and its implications in the developing world (2003), urbanisation transform the built environment, transforming once-rural areas into urban settlements and redistributing populations from rural to urban areas. As a result, there are changes in dominant occupations, lifestyles, culture, and behavior, affecting urban and rural demographics. It was also indicated that urbanisation is shaped by spatial and urban planning besides investments in infrastructures, developments and buildings. It was defined that the city has become the concentration of trade, transport, and information. Cities are places where high-quality public and private businesses and services are present rather than rural areas. The level of urbanization is usually expressed by the number of people living in urban areas and the number of urban dwellers growth, which the national government usually defines to distinguish between urban and rural areas (Montgomery et al., 2003, 10).

Urbanisation changes the social structure and demographic of urban and rural areas. Throughout history, the urban transition has always been associated with economic development. During

the nineteenth and twentieth centuries in Europe and North America, urbanisation was accompanied by economic growth and industrialization (Bairoch, 1988). The evidence points out that economic growth encourages the development of modern industries and growth in the urban population, which is why urbanisation also stimulates economic growth to an extent (Pugh, 1995). People tend to gravitate toward cities that offer a variety of educational and employment opportunities, especially in the industrial and service sectors. It was indicated that almost 80% of GDP (gross domestic product) is generated in cities (Grubler & Fisk, 2012). While Urbanisation may bring positive outcomes that improve the living standards of urban residents and would ultimately contribute to sustainable development. Urbanisation continues to be one of the hot topics in urban sustainability. It can also be associated with negative socio-economic and environmental impacts such as (urban mobility, land degradation, loss of urban eco system, urban heat island effect, climate change, air pollution, health and wellbeing, urban poverty, flooding, crimes, violence, traffic congestion (Environment Agency, 2021)¬). The mentioned risks have made it a major threat to urban sustainability worldwide. In some cities, unplanned urban expansion leads to pollution, environmental degradation, and unstable production and consumption. Cities have been growing faster than the population. Urban expansions threaten biodiversity hotspots and cause carbon emissions related to deforestation and land-use change (UN DESA, 2018). As cities grow, they become increasingly vulnerable to climate and disaster risks (World Bank, 2022). Nevertheless, the growing population globally will continue to face unprecedented negative impacts today and in the coming years—not only problems related to urban growth, economy and environmental issues but also social factors. As far as I am concerned, 'social development' is very important for sustainable urban development. The quantity of city employment opportunities, the high level of public services in cities, and the degree of citizens' living comfort' and security are all key factors directly affecting urban sustainability. Sustainability in cities could be achieved by balancing environmental protection, economic growth, and also social well-being. Several studies showed that cities and societies that support strong and social relationships are associated with the highest level of happiness and quality of life (Mouratidis, 2021).

As an example, an article by two scholars in the World Resource Institute For Sustainable Cities, Cathy Baldwin, research fellow and Robin King, Director of Urban Development and accessibility (2017), contributed important research about how social sustainability can positively impact urban communities.? Planners, designers, and builders can integrate social objectives

as a key element in development plans highlighting clear successful examples. A) The Garden City Project, Yala Island in Thailand by the ministry of health of Thailand. A scheme to build parks, gardens and green spaces for the public benefit. Several street vendors and residents were interviewed and observed. The local authorities found that people socialized more with friends and newcomers, which increased their happiness levels. As a result, their income has risen. The new Garden city project contributed to making the community a safer place. It was proven that the level of crime decreased by 39% from 2003 to 2010 (Zigurat Global Institute of Technology, 2019). This research demonstrated that improving health and wellbeing through urban planning can contribute to further improvements in society. B) Transmilenio, a rapid bus transit system for the public in Bogotá, Colombia. From the early planning stages, the network was designed for the low-income communities that live within the city boundaries to connect them with main routes for free. Early 'Social Development' and 'Social thinking' from the initial planning can create solutions benefiting residents across socioeconomic statutes. Social Sustainability and Inclusion emphasises the need of "putting people first" in development. By empowering people, developing cohesive and resilient societies, and making authorities accessible and accountable to citizens, it fosters social inclusion of the poor and vulnerable (World Bank, 2021). Initial 'Social development' integration in urban planning can foster positive behaviors in the community and integrate people— the degree of integrated citizens living comfortably and feeling secure and part of the community are all key factors directly affecting urban sustainability. Sustainability in cities is achieved by balancing environmental protection, economic growth, and social well-being. Urbanisation has become increasingly relevant to developing sustainable cities at the local, regional, and global levels in the design and development of sustainable cities. Cities need continuous appropriate planning, design, and investment to be able to attain a good quality of life and social stability.

Figure 25 parks, gardens and green spaces in Yala (Thailand), for public benefit

Source: Wikipedia, Som kung photography

Building sustainable cities that are healthy, resilient, and inclusive requires intensive policy coordination and the right investment choices. The National and local governments have an essential role in taking action now, shaping the future of the development of cities and creating opportunities for all (World Bank, 2022). Developers also need to consider the social and health impacts of established and newly developed plans and integrate social factors into planning and design. Cities are dynamic places. Public spaces, housing, and transportation hubs offer developers unique opportunities to foster positive social impacts and benefits, including strengthening community bonds, facilitating access to jobs, social inclusion, encouraging interaction and making communities safer.

4.1.2 Greater London economic growth and population density

To understand the reason behind the Compact City approach and the factors that nurtured London to become so. we must first grasp the core behind the challenges and consequences of London's housing capacity and other governance challenges. To begin with, officially Greater London the capital and the largest city in the UK, with a population estimate of 9,540,576 million (World Population Review, 2022). Greater London was formally established as a political, industrial, cultural, and financial centre of the UK on 1965 (Encyclopedia Britannica, 2022). London is situated in southeastern England on the River Thames. It consists of two regions: Inner part, 19 boroughs of London's 33 Boroughs (including the original city of London) and the outer borough consists of 19 boroughs (Figure 26). According to Encyclopedia Britannica

(2022), London has an area of 659 miles (1,706 sq km). Since the late 18th century to (1914) London was the Centre of world trade. Over time, London grew as a trading port city because of its location on the River Thames, as it evolved as a trade port city over time, It attracted merchants from all across Europe. It swiftly established itself as a commercial hub, attracting about 8,000 immigrants every year after 1650. As a result, London provided and still until now offers residents and migrants a wide range of economic and social opportunities.
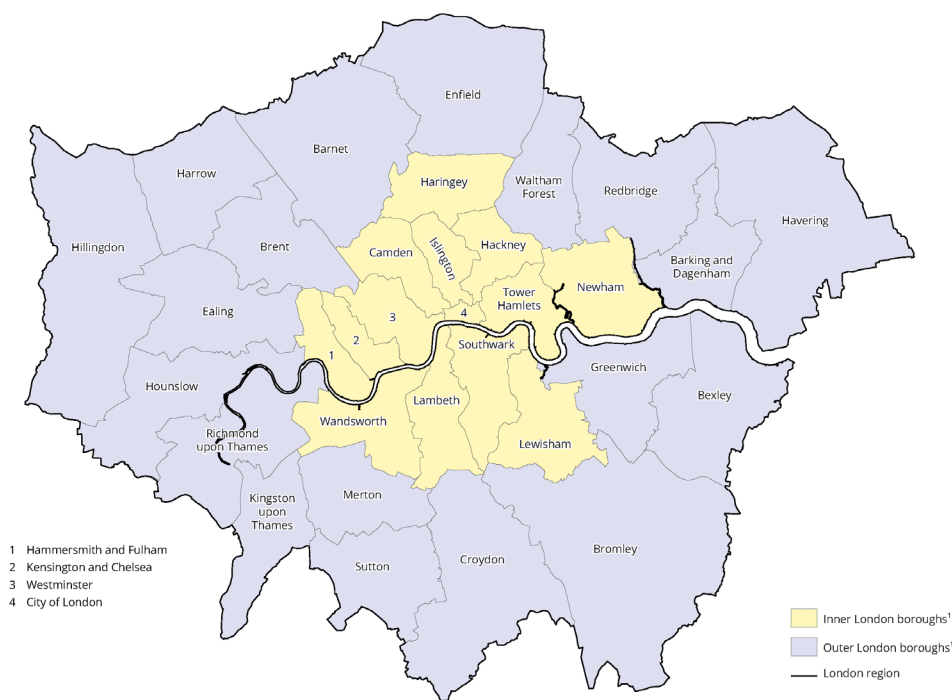
Figure 26.London Region: London Boroughs

Source: Office For National Statistics, 2018

The Greater London characteristics map was analyzed to show a brief overview of the different characteristics of the different areas in the city. It shows that the inner city is populated by young professionals, mostly single-person families, and highly populated areas with a high number of foreign people. The City Fringes are population primarily by people over 45 years old and mostly above pensionable age. Barnet sits in between these two counterparts and houses a bit of both group.

Greater London characteristics

- Aging City Fringe
- City Vibe
- High Density and High Rise
- Urban Elites

0   5 km   10 km   N
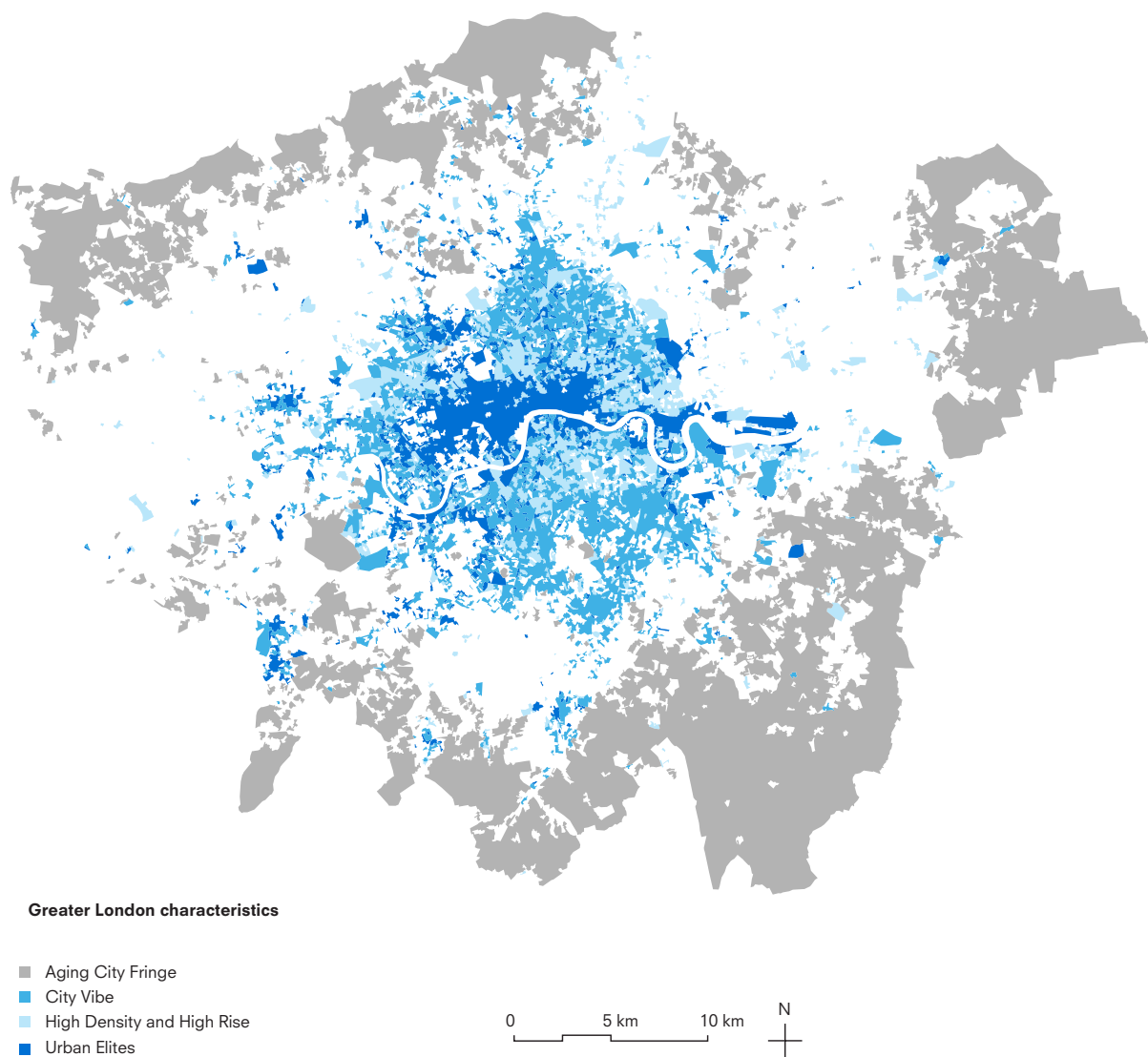
Figure 27. Greater London Characteristics and urban growth

Source: London Output area classification

Methods Used: Illustrator

London's international migration forecasts show that London has the world's second-largest foreign-born population, after New York, and is comparable to London's area with the most significant proportion of non-UK-born residents. An estimated 37% were non-UK-born, while 21% were non-British nationals. Work-related reasons have been the leading cause of migration to the UK since 1995. There are other reasons people migrate to the UK; study, family, or humanitarian protection (Migration Observatory, 2020). According to ONS data, students from non-EU countries, particularly China, from the late 1990s dominated to 2018/2019. In 2018, Work and study were the most prevalent motivations for long-term immigration to the UK, accounting for 71% of long-term immigration. However, Long-term immigration to the UK for work has decreased since the Brexit referendum, particularly among EU citizens and those without a firm job offer (Migration Observatory, 2020).

How London became one of the prominent international financial centers in the world? Globalization is one of the factors that shaped London's economy. The international economy of London evolved through the increases in trade over time. Over the past three decades, London's industrial structure has undergone significant changes, a significant decline in manufacturing and a considerable transition toward a service-led economy, resulting in an economy valued at approximately £364 billion in 2014 (Greater London Authority, 2016).

Population and Land Use

The following map (Figure 28) shows the population density of different parts of London. The map illustrates the land use by people in different areas. E.g., as we go more towards the center of London, we can see the density increase, reaching 285 per one hectare (10 meters), while in other rural areas in the UK, the population density is as low as 70 per one hectare (10 meters). The problem is that the population of the UK is unevenly distributed. In the most rural parts of the UK, the population density is low compared to London (ONS, 2020). London's population reached record levels. London's latest official population estimate is 9,540,576 million in 2022 and is expected to reach 10.6 million in 2035. Over the next 30 years, the capital's population will increase drastically, possibly beyond 11 million (ONS, 2022). The new homes will have to be within London's existing boundaries. According to (London First, n.d.) as it's officially known, the metropolitan green belt was initially presented in London in 1938 to stop urban sprawl. The Green Belt is more than one million acres of protected land around London, ex-

tending more than 40 miles from the City as shown in (Figure 29). Green Belt is a relatively small fraction of all the land in London. In (Figure 30), it illustrates how much of it lies within the capital's boundaries. In comparison, buildings, roads, and railways cover 27.6 percent of London.

Population density

persons per hectare
- 19 - 70
- 70 - 90
- 90 - 120
- 120 - 285
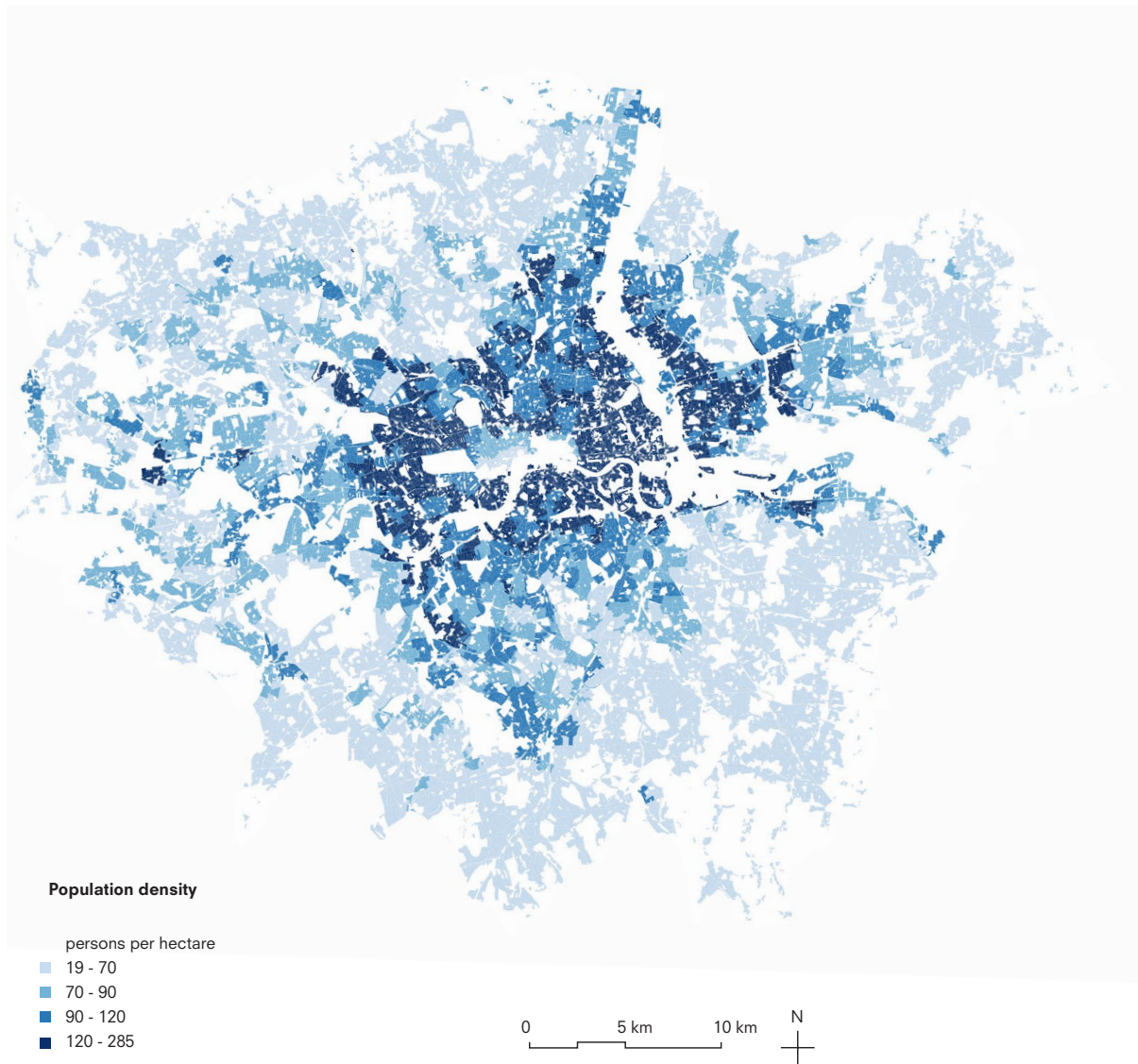
Figure 28. London's population density analysis

Source: ONS

Method used: illustrator
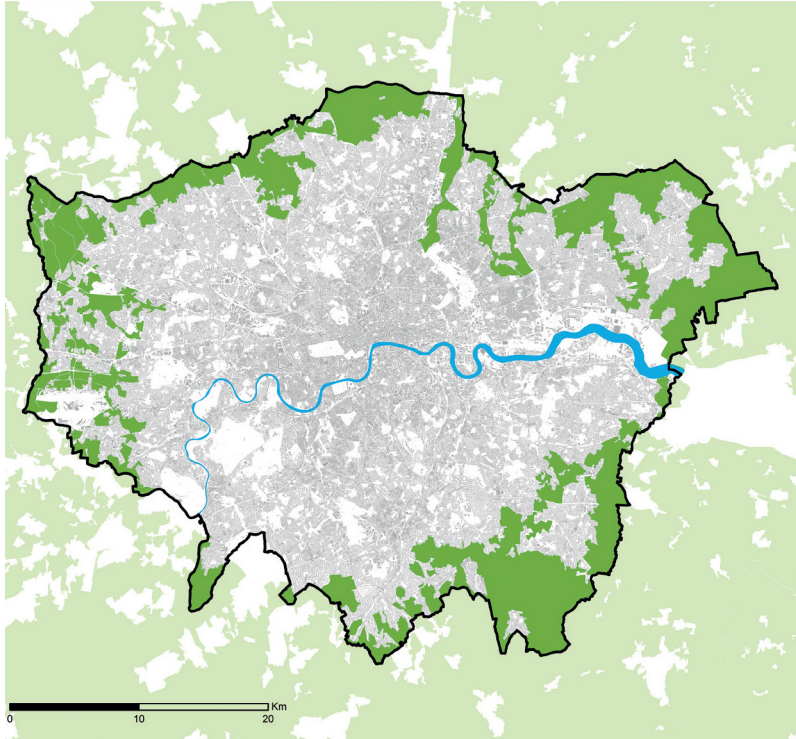
Figure 29. The Metropolitan Green Belt and buildings in London

Source: Quod,Crown database, 2015
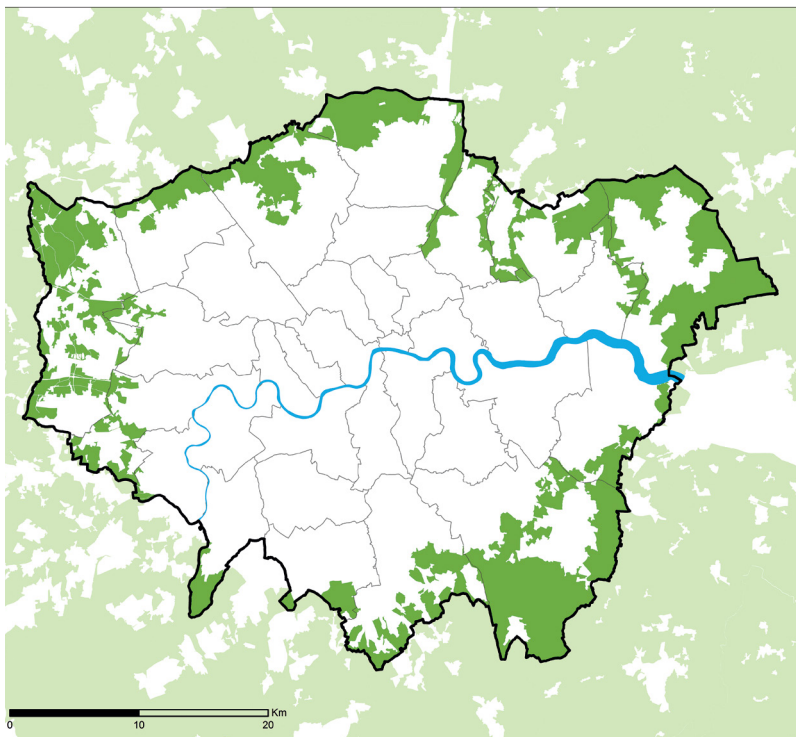
Figure 30. The Metropolitan Green Belt and buildings in London

Source: Quod,Crown database, 2015

4.1.3 The compact city principle and the changing London context

The London Compact City

In spatial planning, London will face significant challenges accommodating more people in the future, not only in the quantity of housing but in quality too. In order to attain a more sustainable urban form, city planners, developers, and policymakers have increasingly looked towards constructing a more compact city in recent years. What is a Compact city? The compact city, was defined in the book " The death and life of Great American Cities" as a city of short distances, is an urban planning and urban design idea that encourages a high residential density while allowing for varied land uses. It is based on an efficient public transportation system. It has an urban layout that promotes walking and cycling, as well as low energy consumption and pollution, according to its advocates. A big resident population allows for social contact and a sense of security in numbers and "eyes on the street." (Jacobs, 1993).

I will briefly set the scene with a brief history of how the compact city approach was adapted in London. Boris Johnson adopted a revised version of the London Plan, based on the compact city principle, in 2011 after a strategic plan for London had been adopted by Ken Livingston, the first Mayor. Richard Rogers was one of the pioneers of the compact city approach in 2000. He was Mayor Livingstone's architectural and urbanism advisor and Chaired the Government's Urban Renaissance (Bowie, 2017). In 2003, Rogers' unit within the Greater London Authority (GLA) issued a guide on Housing in the Compact City (Mayor of London, 2003). Since then, many housing capacity studies and policy directions in "London Plans" were released by the GLA seeking to ensure an annual target for homes with revisions every year to increase the housing. This additional capacity resulted from the identification of new sites, including underutilized industrial and commercial sites, as well as the idea that sites might be developed at considerably higher densities, particularly in the vital development zones known as Opportunity Areas (Mayor of London 2004, 2008, 2011, 2014). In 2017, there was also a thought that by concentrating residential and employment growth within a small geographic area, the need to travel long distances to work would be reduced, lowering transportation infrastructure investment costs and limiting environmental pollution (Bowie, 2017).

The compact city principle has a lot of benefits. The aim has always been to create a walkable, accessible, green and compact city for all, which has been set out in many manifestos. After going through academic papers about London's urban growth and the rapid population increase. Every year, thousands of people relocate to London in search of the economic and social opportunities that this vibrant city offers. When analyzing the increasing number of people living and studying in an area can provide significant benefits to the city. It enhances productivity and forces improvements in accessibility, quality of services and amenities in the area. Furthermore, When companies have more suppliers and workers, they can cut production costs, contributing to high economic growth.

London has done an excellent job of creating jobs and opportunities.There are some drawback and risks of a compact city. The increase in density raises the housing costs and caused can cause environmental issues. According to International Institute for Environment (2017), it reveals lessons from compact cities that the city is struggling to handle population density. Despite the existence of the London underground, the spread of bike lanes, and the prominent red buses on every street, many people still rely on cars. As a result, London's air pollution is the worst in Western Europe. A typical day's exposure is similar to 15 cigarettes smoked. The lack of available properties and the high rent costs have always been a forecasted problem in London. In the report Tackling London's housing crisis, "I know that our housing crisis is the biggest threat to London's future," said the mayor (Mayor of London, 2018). It was also stated in the London Housing strategy report (2018) that the consequences of the housing crisis created a generation of Londoners who cannot afford to pay their rent and others forced to live in overcrowded or inappropriate conditions. Previous studies have demonstrated that the development program has failed to meet housing needs-based targets quantitatively. This is due to various issues, including the withdrawal of government financing for affordable housing, a lack of infrastructure planning and finance, and developers' inability to realize their overly optimistic projections about sale values (Bowie, 2017). A researcher with the London-based International Institute for Environment and Development and senior economist Sarah Colenbrander (2017) indicated that the increased density raises annual housing prices by $240 per person. Such house prices will challenge renters - but property owners will benefit from such increases. Low-income households are more inclined to rent; compact city strategies may worsen

inequality. Colebrander added that in order to keep up with population growth, the city has to build more than 50,000 homes per year. Tenants in London are risking and will continue to risk housing costs unless there is a substantial increase in new private rented housing over the next decade. According to a report that warns that unless 83,000 more dwellings are built in the capital yearly, London won't be able to accommodate the increasing demand of young workers who are looking for a place to live (Prynn, 2022). The increase in housing supply is necessary, but what would be more important is improving the affordability. According to the Parliament (2021), to meet the aim, the government has stated that it will "diversify the market, simplify the planning system, invest in affordable housing, increase land supply for new dwellings by investing in infrastructure and make the best use of surplus public sector land." However, it was also argued by others in the Parliament (2021) that it's most unlikely to happen (affordability) as the increase in supply could bring house price to earnings ratios.

The Mayor conducted a Strategic Housing Market Assessment (SHMA) and a Strategic Housing Land Availability Assessment for London (SHLAA). The SHMA has assessed the demand for 66,000 new dwellings each year. Within the total figure, the SHMA considers overall housing needs as well as specific requirements for purpose-built student housing and specialist older persons' housing (GLA, 2021). The London future growth plan (GLA, 2021) sets out a development policy of ten-year targets for net housing completions that each local planning authority should follow.

4.1.4 Changes in housing demand

One of the fundamental demographic shifts that will affect the housing demand in the coming years is' The ageing population,' which the government acknowledges. The government understands that several factors influencing housing demand are interrelated and endogenous when assessing housing demand. The (MHCL) Ministry of Housing, Communities & Local Government (2021) "Factors that affect the demand for new homes include changes in population and population structures, which translate into the rate of household formation; changes in income over time; lending patterns; as well as underlying preferences for housing in different locations and of different types, which in turn reflect patterns and ways of working amongst other things."

According to the Cambridge Centre for Housing & Planning Research (2021), There is a dif-

ference between 'housing need' and 'housing demand". Housing demand is complicated. "It is shaped by multiple factors, including demographics and changing household formations, incomes, employment growth, alternative investment opportunities, policy drivers, housing costs (rent/mortgage costs), etc." while housing needs. Housing needs can be viewed as measuring the fundamental unmet human need and their right to appropriate and affordable housing.

As discussed in the literature review, the overall UK population is ageing. Due to the changes in the population structure, the overall demographic changes, the decreased fertility rates, and people living longer lives. How will the ageing population affect the housing demand? Smart Growth UK (2019) discussed a more extensive provision for older people's housing; there must be a change in the houses occupied by older people shifting towards a smaller provision. The latest ONS household prediction shows a greater percentage of smaller homes for the next ten year, notably among older age groups (Parliament, 2021). A report by ONS (2019) reveals the average age at which children leave their parents' homes has also risen, from 21 in 2009 to 24 in 2019. Furthermore, the number of persons living alone has increased from 7.5 million in 2009 to 8.2 million in 2019. The 9% increase was even before the coronavirus pandemic (COVID-19). Consequently, more people will be living alone in the future.

According to the ONS (2018), households 75 years old people account for 64% of the overall household increase. As a result, much of the predicted increase in homes is due to an ageing population. (Figure 31) displays the estimated number of households by age group for 2018 and 2028. The number of families in the 25-34 age group and the 45-54 age group is predicted to decline. The number of households with a lead householder over 55 is expected to rise. The number of homes from 65 to 74 years in 2028 is expected to reach over 3.5 million.

 The House of Lords (2021) "Built environment Committee" a virtual meeting that was made under the title "Meeting the UK's housing demand." Professor Chris Leishman (Professor of Property and Housing Economics at the University of South Australia) says, "we are seeing the size of households falling significantly," and as the population "ages and becomes more heavily weighted towards larger numbers of smaller households, that creates demand for a different type of product."

Projected number of households by age of household reference person
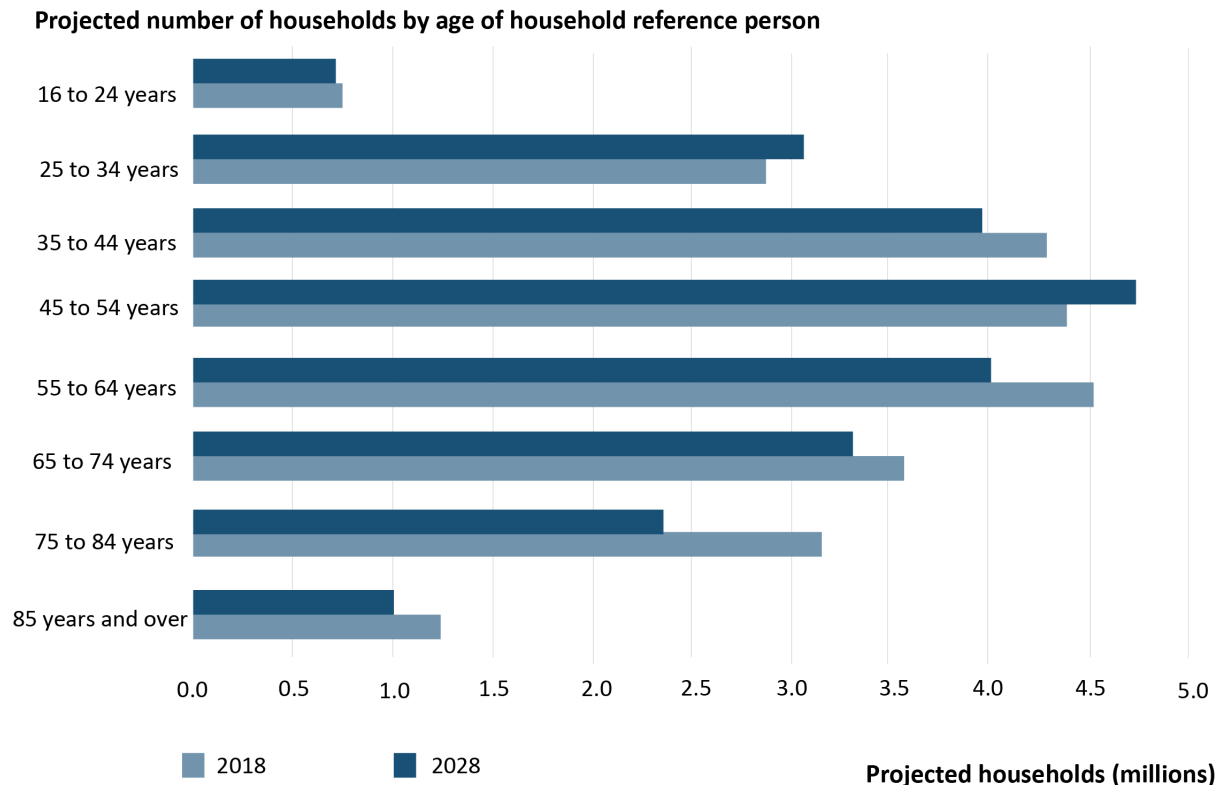
Figure 31. Projected number of households by the age of household reference person

Source: Office for National Statistics, 'National population projections: 2018-based

A more compact city is not a silver bullet: there are disadvantages connected with increased population density as we mentioned the housing shortage and increase in household prices. The city's overcrowded transportation system and rising housing costs highlight the need for intentional government intervention to mitigate the consequences of cramming so many people into such a small space. Large-scale investments in public transportation and housing are required to make compact cities livable and affordable. Careful urban planning and policy directions are essential to reduce these risks and realise the potential economic and environmental benefits.

4.1.5 How can integrated communities impact the compact city?

A growing older population will profoundly affect housing demand in the coming years (Parliament, 2021). It will no longer be applicable to have one person living in a bigger home than their requirements yet not serving their changing needs. The city's land won't be able to fit all the older people in separate dwellings. As pointed out, there will be a shift towards smaller

households but more extensive in terms of quantity to fit all the people over 65 in the future. It is more likely that more adaptable and specialized housing will be needed. Apart from providing better quality and more accessible homes for older people, an intergenerational model will help free up larger homes that may have been previously occupied. Up and above, more radical, innovative solutions are required to meet the changing needs of "third age" homes and tackle loneliness and social isolation.

The combination of longer lives, housing shortage and the high cost and lack of childcare facilities in London can create an integrated opportunity for mutual benefit. There are many problems with childcare in the UK as they were tackled in the literature review (2.3.2 The problems with childcare in the UK). The majority of parents who participated in the mega survey (20k parent) in 2021 stated that they struggled with Childcare availability, affordability, quality, and government support (PTS, Women's Budget Group, et al., 2019). Also, 76% of mothers stated that childcare expensive costs are one of the reasons why they don't have children in the UK (P T S, 2022). According to a report by a leading charity, London is the most expensive city with childcare costs in the UK (Child Poverty Action Group, 2019).

Unbalanced supply and demand in the provision of childcare facilities in London is a market issue that UK authorities are failing to address adequately. With the compact city principle of London, the intergenerational model can also reduce demand for land and building materials which would be very sustainable and could decrease the cost and foster affordability as it will encourage mixed land use see part (4.4.2 making the best use of land policy).

According to Lene Hyltoft (policy analysis and research officer in the Nottingham University) and Tracey Warren (a professor of sociology in the Nottingham University), "The government plans to relax staff to child ratios to make it cheaper but, warn improving the quality of early years provision is just as important as making it more affordable." (Child Poverty Action Group, 2019). Intergenerational learning activities can help children achieve social equality by bridging societal divides, promoting more understanding and respect across generations, developing individual competence and ability, and creating more inclusive communities (Pinto, Marreel, & Hatton-Yeo, 2009).

As demographics change, there is an increasing interest in intergenerational practice (Pinto et al., 2009). This research sets the ground for new spatial and social development directions of urban development. In search of profound, innovative solutions to meet the needs of a modern era and nurture living in a compact city by integrating preschools and childcare services with older adults' accommodation on one land. Creating opportunities for both age groups to benefit from each other. By preventing many chronic diseases linked with old age through social interaction and enhancing social behavior and cognitive performance of the young and the old (as proved in the case studies in the literature review 2.3.2 What happens when the very old and the young interact?)

Having a lot of smaller households in an integrated community with a preschool can save up a lot of land use and incorporate the model in several areas. Placing childcare facilities and nurseries in older adults' accommodations can create a vibrant, inclusive community that supports intergenerational connections. Services and facilities are shared and enjoyed equally by the residents (Older adults) and visitors (children). As a result, it will create communal activities between different age groups while retaining privacy and a sense of ownership for the older adults in their accommodation.

The government can help respond to the under supply challenges by making better land use and offering affordable housing that the city desperately needs. The idea is to create a vision for 21st-century retirement housing for older people oriented around purpose and life, avoiding loneliness beyond the constant feeling that their lives are ending. It's a beginning of a new community, perhaps a new life. In my opinion, a significant increase in densification in London can be done by expanding at a medium rise size, based on existing urban forms that we know function effectively.

The challenges faced by a rapidly ageing society and the housing crisis can be addressed through interconnected communities that can provide the city with an innovative and flexible path forward; with a strategic approach to open space sharing. To achieve the expected growth, the government must identify new opportunity areas where it is much needed for an older adults' specialized housing and preschool facilities.

4.2 A Socio Spatial perspective
4.2.1 Urban Policy and a healthy environment

Operating and controlling urban growth is very complex due to the changes in technology and the greater size of cities. Urban policymakers and planners must maintain and develop an orderly environment in a rapidly changing world while balancing economic development, social justice, and environmental protection (Campbell & Fainstein, 1996, 7). Planning for people is part of the urban policy. Poor urban policy has an impact on people's health and wellbeing. Cities are more than just buildings, roads, or open spaces: they are 'livable spaces'. Livable spaces that are closely linked with that of citizens. The task of making and remaking cities falls cooperatively to the government officials and professionally trained planners (Reifer, 2013, 329). Not only the government that is fully responsible for creating a healthy city. There are professionals beyond the local government: Experts involved in planning, development, regeneration, and designing. However, they must work under the local government's leadership and key strategies.

Making cities inclusive, safe, resilient, sustainable, and healthy is based on local governments' development of public policies. The local government provides support for good healthy urban environments. But what is 'healthy urban planning'?

A healthy urban planning strategy means preventing health illnesses from factors like physical inactivity, pollution, road accidents, poor housing, and social isolation, leading to increased healthcare costs. The goal of healthy urban planning is to understand and advocate for the role of planning in influencing urban development and social determinants of health(NHS, 2013). As a result, delivering well-designed buildings and urban spaces create healthy, active lifestyles within a city. To develop and create healthy, sustainable cities and communities. The (National Health Service) NHS London Healthy Urban Development Unit and Greater London Authority created a checklist that promotes healthy urban planning to ensure that health and well-being are considered. Its purpose is to mainstream health into the planning system by bringing together the policy requirements and standards that affect health and wellbeing. Who is this checklist for? According to the NHS (2013) checklist, it is for A) Developers to monitor and take into account the health impacts of their proposals. B) Planning officers to help identify and address potential health impacts from development proposals. C)Public health and environmental health professionals to examine plans and development proposals. D) Community

groups and housing associations to create community engagement. The checklists encourage collaboration and urge different stakeholder groups to address the health impacts of plans and development proposals. According to the Healthy Urban Planning checklist (2013), national assessments and standards constitute healthy urban planning when used together. These assessments are illustrated in (Figure 32).
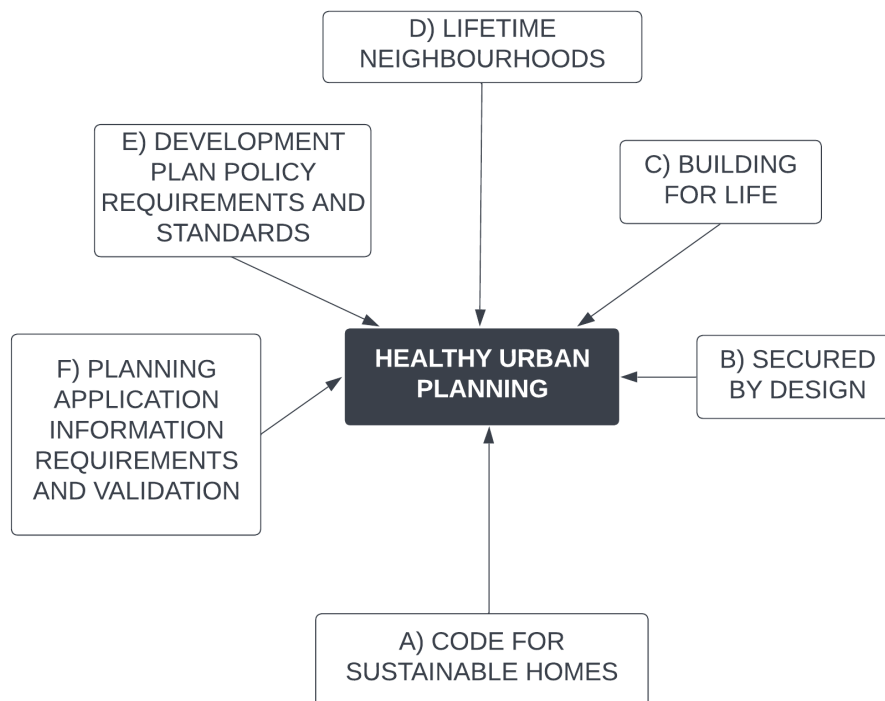
Figure 32. National assessments and standards constitute healthy urban planning

Source: healthy urban development, NHS, 2013

A) Code for Sustainable Homes and Lifetime Homes. Promotes the use of sustainable design in a more advanced manner than is currently required by the building regulations and aims to reduce carbon emissions. The code provides 9 measures of sustainable design (health and well-being, management, ecology, energy, CO2, water, materials, surface water runoff, waste, pollution, ecology). B) Secured by Design (SBD) is an initiative to be able to support the principles of "designing out crime" through using effective crime prevention and security standards for a range of applications. C) Building for Life is the standard for the design of new housing development, was published in 2015, based on the National Planning policy framework responding to the government strategies to build better homes and involve local communities in the planning phase. D) Lifetime Neighborhoods is an independent report that was published in 2011 by. A neighborhood development plan by The Department for Communities and Local government. Identifying possible neighborhood Community Infrastructure Levy (CIL) funding 'health' project and as a resource to help community groups comment on a planning application. The report is in line with the government's commitment to helping older people live independently. It should help to foster thinking about, design, housing, transport, participation, and green spaces, how they can be linked when creating lifetime neighborhoods. Lifetime neighborhoods are places designed to be inclusive regardless of age or disability. E) Development plan policy requirements and standards. Are the heart of the planning system with a requirement set in law that planning decisions must be taken in line with the development plan unless material considerations indicate otherwise. These plans define the future development of the area, addressing housing, economic growth, community facilities, and infrastructure needs. F) Planning Application Information Requirements and Validation. The checklist (Table 3) aims to provide evidence to ensure that health and wellbeing issues are identified and addressed in the planning process. The measure was introduced by The Growth and Infrastructure Act 2013 to speed up the planning application process.

	Air Quality Assessment	Sustainable Homes	Design and Access Statement	Landscaping Strategy	Noise Impact Assessment	Open space assessment	Planning Statement	Retail Impact Assessment	Sustainability Statement	Transport Assessment
Healthy Homes		✓	✓				✓		✓	
Active Travel			✓							✓
Healthy Environment	✓	✓		✓	✓	✓	✓		✓	
Vibrant Neighborhoods			✓	✓				✓	✓	

Table 3. Planning application information requirements

Source: Data from 'Healthy Urban Planning Checklist' Report, (NHS, 2013)

The NHS (2013) Healthy Urban Planning Checklist is divided into four themes. Each theme contains several questions focused on a planning issue related to health and wellbeing, summarized in (Table 4). Identified in local joint strategic needs assessments and health and wellbeing. This checklist ensures that a development proposal is as 'healthy' as possible by achieving as many 'yes' ticks as possible and avoiding as many 'no' ticks. 'No' means that a particular development aspect needs to be reconsidered. When the response is unclear, public health officers can assist and support with a consultation if more information is required. For e.g., analyzing the strategy, under the theme of 1) Healthy Homes. One of the questions to be answered is, "Does the proposal provide accessible for older or disabled people?" The answer to this question is important to plan for future scenarios as accessible and easily adaptable housing can meet current and future needs of the fast-growing urban population in the UK. 2) Active Travel. One of the questions here is "Does the proposal connect public realm and internal routes to local and strategic cycle and walking networks and public transport?" It is important to address from the beginning a sustainable travel plan that is good for one's health and the environment aswell by promoting sustainable transport such as walking and cycling. 3) Healthy Environment. An essential question among the tackled is "Does the proposal retain

or replace existing open space and provide new open or natural space in areas of deficiency, or improve access to existing spaces?" To access open spaces easily in your surrounding has a great impact on health and wellbeing. Having access to open space such as green space, parks, and woodlands can improve physical and mental health regardless of social background. Another question is "Does the proposal provide a range of play spaces for children and young people?" which highlights the importance of Participating in physical activity regularly is crucial for healthy growth and development of children and young people. It is also important that play spaces are conveniently located along walking and cycling paths suitable for children. 4) Vibrant Neighborhoods. To challenge this theme, one of the questions was "Does the design of the public realm maximize opportunities for social interaction and connect the proposal with neighboring communities?" Vibrant neighborhoods, public spaces or communities encourage activity and social interaction. It also affects people's sense of place, and security. It is a key element of a lifetime neighborhood.

Theme	Checklist Questions Examples	Planning issue	Health and wellbeing issue
1. Healthy Homes	Does the proposal provide accessible homes for older or disabled people?	-Housing design -Accessible housing -Healthy living -Housing mix and affordability	-Lack of living space - overcrowded -Unhealthy living environment -Daylight, ventilation, noise -Excess deaths due to cold / overheating -Injuries in the home -Mental illness from social isolation and fear of crime
2. Active Travel	Does the proposal connect public realm and internal routes to local and strategic cycle and walking networks and public transport?	-Promoting walking -cycling -Safety -Connectivity -Minimizing car use	-Physical inactivity, cardio-vascular disease and obesity -Road and traffic injuries -Mental illness from social isolation -Noise and air pollution from traffic

Table 4. Summary of the four themes: Questions examples, Planning, Health, and Wellbeing issues

Source: Data from 'Healthy Urban Planning Checklist' Report, (NHS, 2013)

3. Healthy Environment	Does the proposal retain or replace existing open space and in areas of deficiency, provide new open or natural space, or improve access to existing spaces? Does the proposal provide a range of play spaces for children and young people?	-Construction -Air quality -Noise -Contaminated land -Open space -Play space -Biodiversity -Local food growing -Flood risk -Overheating	-Disturbance and stress caused by construction activity -Poor air quality - lung and heart disease -Disturbance from noisy activities and uses -Health risks from toxicity of contaminated land -Physical inactivity, cardiovascular disease and obesity -Mental health benefits from access to nature and green space and water -Opportunities for food growing – active lifestyles, healthy diet and tackling food poverty -Excess summer deaths due to overheating
4. Vibrant Neighborhoods	Does the design of the public realm maximize opportunities for social interaction and connect the proposal with neighboring communities?	-Healthcare services -Education -Access to social infrastructure -Local employment and healthy workplaces -Access to local food shops -Public buildings and spaces	-Access to services -Mental illness and poor self-esteem associated with unemployment and poverty -Limited access to healthy food linked to obesity and related diseases -Poor environment leading to physical inactivity -Ill health exacerbated through isolation, lack of social contact and fear of crime

4.3 London Spatial development and policy framework provision
4.3.1 Childcare facilities and spatial development patterns

The national planning policy directions play an essential role in London's provision of childcare and preschool facilities, ensuring a sufficient, practical and sustainable provision for children and parents to cater to their needs. According to the Greater London Authority (2021) Access to high-quality education and early childhood education and care (ECEC) facilities can play a significant role in children's development and positively influence children. As a result, it will impact their future, educational attainment, economic participation and health. Besides benefiting children, it also allows parents to be able to work. Furthermore, the authority indicated that children from disadvantaged backgrounds could particularly benefit from high-quality and universal early childhood education and care.

Investing in good-quality early education planning is crucial for helping children to improve their skills and prepare them for the future to find sustainable employment, which is also vital to London's economic growth.

The London future growth plan set out a development policy that all boroughs should follow to ensure good quality education and childcare facilities. The childcare facilities include pre-schools, school age, nurseries, childcare, and daycare. The Greater London Authority Plan publication (2021) provides a framework to increase the capacity and quality of education and childcare facilities through initial planning. 1) High-quality childcare facilities should be safe, affordable, and accessible for all. The need for high-quality education reduces inequalities and improves social mobility by improving access to it. Suitable resources and training should be provided for every child, young person, and adult to enable them to maximize the economic opportunities in the capital. 2) The locations and the environment of educational and childcare facilities should be accessible on foot, by bicycle, and by public transportation. A) Having safe and clear entrances to schools and playgrounds should be located away from heavy traffic areas. The approaches that are taken to city planning and engineering support walkability and bicycle safety. Moreover, taking public transportation is often regarded as an active mode of travel since there is usually a walk involved at least at some point. To help and promote active travel for children and parents when commuting. 3) Healthy environment and safe routes to education and childcare facilities should be considered through the initial design process. A) The facil-

ities should be away from busy roads to reduce air pollution, noise, and road safety hazards. Choosing lower-traffic routes reduces the exposure to traffic pollution. Also, it enforces safety and reduces unsafe behaviors among drivers. B) Include adequate, accessible outdoor space in all facilities. C) Place facilities near parks or green spaces whenever possible. D) Playgrounds should incorporate natural features such as trees, greenery, forest schools and areas where food can be grown, recognizing the benefits of these features on health and education. For example, this study in London highlighted a child's or adolescent's exposure to outdoor space, especially natural space, has a positive effect on their physical and mental health, including better cognitive and motor skills and a lower risk of obesity (Shoari et al., 2021). 4) Boroughs should provide sufficient quality education and childcare facilities. A) A need assessment should be done locally and sub-regionally while auditing existing facilities. To determine where the need is, the facility status and analyze how various systems and components are operating in existing facilities. B) Create a Development Plan to identify areas for future provision. Particularly in areas with significant growth plans or a high demand for schools and childcare facilities, including special educational needs and disabilities. C) Provide suitable childcare in the development proposals for housing and commercial facilities and encourage nursery provision in primary schools when necessary. The proposals describe how planning burdens can be reduced and how existing buildings can be better utilized. This requires pre-planning applications so as not to be a 'development' plan and have a lot of implications in the neighborhood, which could be a burden in terms of cost and time.

The formulation of planning education and childcare facilities policy is critical to creating a good learning environment. Boroughs should work on a local plan that considers planning applications and directions of the Greater London development future growth to provide sufficient and quality ECEC and childcare facilities.

4.3.2 Housing for Older People: Directions in planning policies

The UK has an ageing population (ONS, 2021) Good housing can keep older people healthy, allow them to live independently and reduce their need for social care services (Age, 2018). "The need to provide housing for older people is critical... Plan makers will need to consider the size, location and quality of dwellings needed in the future for older people in order to allow them to move" (GOV UK, 2019).

The UK parliament published a report (2019) estimating the costs of poor housing, highlighting the cost of poor housing on the health service, which is £1.4 billion per annum reported by the NHS. The authors demonstrated the link between housing, health and wellbeing, claiming that early interventions should be considered to avoid depression, chronic diseases, social isolation, and loneliness for older people. In 2014, the department of health, the ministry of housing, communities and local government as long as NHS collaborated to improve health through the home. They urged the housing services to take equal measures to health and care services in planning and implementation. Housing services should work closely with the creation of Sustainable and Transformation Partnerships (STPs) and Accountable Care Systems (ACSs) to address housing issues (Parliament, 2019).

In Greater London, it is expected to experience substantial growth in its older population. By 2029 the number of people aged 65+ will increase by 37%, and people aged 75+ are expected to increase by 42% (GLA, 2021). Older Londoners need appropriate housing; otherwise, there will be implications for housing, health, and social care in the future. The Greater London Authority publication (2021) reported research by the government that between 2017 and 2029, London is projected to need just over 4,000 specialist older people apartments per year across all tenures (GLA, 2021).

Retired Londoners who can live independently usually live in London in 'sheltered housing' A Residential accommodation with self-contained apartments (Public or social sector that can be bought or rented particularly for older or vulnerable people) or 'Retirement housing' (mainly in the leasehold sector and for sale properties for people aged 60 or over). Regardless, both models accommodate older adults. The differences are usually in the services, amenities, common shared spaces availability, staffing, the pricing structure, and whether it is provided by 'Local Councils Housing,' e.g., social housing or private sheltered housing. It depends on the level of

care and services they need; older adults may prefer alternative, more tailored specialist services seeking "decent" home standards (GOV UK, 2019).

The Greater London Authority (2021) brings together and improves the policy on housing for older people and encompasses the recommendations to develop London's future growth policy. The publication advises boroughs of London to work collaboratively with providers to identify suitable sites while taking into account specific measures to build specialist older people housing. 1) The need for connectivity, such as access to relevant facilities, social infrastructure, health care, and regular public transportation, contributes to an inclusive neighborhood. Boroughs should recognize the importance of providing developments close to city centers and near relevant facilities. The planned areas should also be well connected to public transport to encourage an active life for older people and encourage them to move regularly. 2) Increase accommodation that is suitable for older adults with dementia. Dementia does not just affect only older adults. However, it is estimated that older adults with Dementia in London will rise to 31% in 2029 (96,939 older adults) (GLA, 2021). The ways of tackling support for people who have Dementia have improved in recent years. However, there is still no clear evidence to cure Dementia. But the policy provisions related to Dementia and sheltered accommodation options are likely one of the solutions (GLA, 2021) Boroughs should consider the need for accommodation. As mentioned in the literature review how loneliness increases dementia risk and changing this factor can reduce the risk of dementia. (Sutin et al., 2020) Dementia and depression are prevalent among older adults. People with dementia can often be supported to continue to enjoy life within their own homes or other options like sheltered living, providing a greater level of support. A specialist sheltered housing can help people with dementia if designed adequately to retain their independence, keep them safe, live within a community and reduce feelings of confusion and anxiety through the managed surroundings. 3) Housing with pick-up and drop-off facilities at the entrance that is suitable for ambulances, minibusses, and taxis with adjacent Krebs. When planning a specialist accommodation for older adults, all stages of a healthy journey and active ageing should be considered when planning a new development while taking into account all risk measures.

4) Delivering affordable housing aligned with the following affordable housing policy: A) At least 30 percent of low-cost rented homes in London, such as Affordable Rent or Social Rent, are allocated according to need and for low incomes. B) Contributing to the development of

mixed and inclusive communities by ensuring that new residential developments contain minimum affordable rented and intermediate accommodation. C) Delivering affordable housing and allocating it based on the local borough's allocation policy. Affordable housing is a key pillar of the Mayor's strategy. For e.g. social housing is allocated based on each borough's allocation policy: accommodating low-income bracket people, usually less than 80 percent of market rents. 5) Accessible and Suitable housing for London's diverse population, including older adults, disabled people, and young children. A) The development must ensure that at least 10% of dwellings meet building regulations and requirements for wheelchair user dwellings and that the other dwellings are 'accessible and adaptable.

6) Adequate standards of accessible and inclusive design should be integrated in the development plan supporting the creation of inclusive neighborhoods. Considering the diversity of London's population. A) Provide high-quality spaces that support social interaction and inclusion. B) Provide spaces without disabling barriers to welcome everyone.

As mentioned, with the ageing of the population in the UK and the knowledge that inadequate housing for older adults could cost the state billions, the challenge of meeting the housing needs of older people has become critical. To effectively contribute toward older adults' housing needs, the above policy provisions can be integrated into planning developments in all boroughs of London. However, older adults may choose care homes or a more certain accommodation in some circumstances, providing a different care offer that accommodates their health conditions. The policies discussed do not involve care home accommodation.

4.4 Spotting the opportunity
4.4.1 London policies and building strong and inclusive communities

London is a city that is made of diverse individuals and communities. Almost 40% of people living in London are non-British, which is the largest estimated proportion city with non-British residents in the UK (ONS, 2021). This has opened more opportunities for inclusive growth for the city. By strengthening the city's traditions of openness, diversity, and equality and assisting in developing strong and inclusive communities. Those involved in planning must ensure specific strategies for Londoners' good social, economic, and civic lives. To examine London's existing development and planning policies, the mayor of London has published an ambitious London plan to plan London's future growth policy. To build strong and inclusive communities, the Greater London Authority publication (2021) suggests engaging stakeholders (including local communities) early in the process of developing proposals, policies, and area-based strategies. Another direction for those involved in planning and development must offer community spaces and amenities that accommodate, encourage, and strengthen local communities while increasing active participation and social integration and addressing social isolation. Innovative approaches to diversity, inclusion and social value must be implemented to accommodate the needs of children and the older adult's community. This would ensure they enjoy the city's opportunities and create a welcoming community for all which is in line with the overall policy direction of the local government of London vis a vis all its boroughs. Children, disabled people, and older adults must live in a welcoming environment that they can use confidently without segregation (GLA, 2021). In order to make it beneficial for all to ensure it's a more inclusive and equal city with a wide range of economic opportunities. Buildings and spaces should be designed to reinforce and enhance the inclusivity of neighborhoods and adapt to the changing community needs and requirements (GLA, 2021).

The development plan for an area is made up of strategic policies. When analyzing the provisional planning policy strategy of the Mayor of London, the strategy points out essential data about inclusivity and connected communities. A) Promote the sharing of services between schools, colleges, universities, sports providers, community facilities, and between early childhood education, health and social care providers, which complements the research idea about intergenerational neighborhoods and the integrated communities. B) Adopt an inclusive design

approach in order to make new developments accessible for all. The use of this direction if followed by the boroughs of London, could promote an inclusive environment that is essential to create a fair society for all, especially the most vulnerable ones (disabled, older people or children). Designing, planning, and managing the built environment require an inclusive approach for a sustainable future.

As mentioned before, part of London's policy is encouraging development proposals that is considering the diversity of London's population and high-quality spaces that support social interaction and inclusion as part of "Inclusive Design" Policy, which would align with the research idea.

4.4.2 Making the best use of Land

From 2012 until today, London's national planning policy framework promotes the effective use of lands to meet the needs for homes and other uses while improving the environment and safeguarding it. Local planning authorities should enhance the development of brownfield land, sites within and around town centers and make use of small sites, and surplus public sector land (GLA, 2021). The government is encouraging design-led approaches to use sites efficiently with optimum capacity. Planning policies and decisions should explore the opportunities to intensify land use efficiently, considering the unmet needs to develop the area accordingly (GLA, 2021). A typical example in this context would be giving substantial weight to new residential opportunities and not supporting proposals related to commercial uses, especially when the area needs new housing. Planning for urban development and city growth shapes the future for developing and building cities that 'work.' In making the best use of land, it is advisable to prioritize sites that are well connected by existing or planned public transport (GLA, 2021). Approaching land use planning and maximizing land and resources' opportunity by making the most efficient use of infrastructure assets.

Moreover, to improve the local health and well-being, the government is taking suitable measures. Planning policies and decisions support the opportunity of sites that provide community services, such as schools and hospitals (GLA, 2021).

After exploring the local government approaches for making the best use of land, exploring the potential idea of integrating housing for older adults and preschools would align with the overall policy direction the government is going towards (complying with design policies and standards).

4.4.3 A chance for integrating ECEC with elderly housing

One hundred thousand childcare places are estimated to be needed between 2016 and 2041 in London (GLA, 2018). There is an essential driving force toward expanding childcare services and early education facilities in the coming years. After analyzing the Greater London Authority provisional strategy S3 Education and childcare facilities that aim to improve the policy on planning across all boroughs, we found suitable directions that would be in line with the research topic direction (complying with design and planning policies and standards). 1) There should be childcare facilities that are safe for all children, accessible for all, and offer both indoor and outdoor learning opportunities (GLA, 2021). A rich outdoor learning environment and activities help children discover and seek out new challenges and learn through play. 2) All facilities should include adequate, accessible outdoor space (GLA, 2021). 3) Place facilities near parks or green spaces whenever possible (GLA, 2021). Children love playgrounds and never get bored of them playing for hours. Older adults also admire nature, and we see them walking or sitting more often in parks. Too often, parks are designed for children and only just fit adults as they are. According to the BBC (BBC, 2014) Professor of public health at Texas A&M University in the US, Jay Maddock, was on a research trip in 2014 to China. He saw hundreds of older adults at the park exercising together (Figure 33). Maddock decided to collect data about elderly park users across eight parks in Nanchang. It was discovered that more than half of the users were older adults. Another example of a playground park established in 2019, Hyde Park, London (Figure 34).

Figure 33. Older adults in China exercising in a park in Kunming, Yunnan province.

Source: Alamy, photo credit: Julio Etchart

Figure 34. Senior playground park established in 2019, Hyde Park, London.

Source: Getty Images.

4) Promote the sharing of services between schools, colleges, universities, sports providers, community facilities, and ECEC, health, and social care providers (GLA, 2021).

5) Childcare facilities should also be integrated into new developments, such as residential and commercial properties (GLA, 2021). Integrated playgrounds in communities allow children to practice and have good social, emotional, cognitive, and physical skills. Children are con-

stantly learning through play and observation, respecting and interacting with other children. As a result, integrating the two age groups in one open green space can benefit both of them in their holistic and cognitive development. 6)Adopt an inclusive design approach in education and childcare facilities in order to make new developments accessible and inclusive for people with disabilities (GLA, 2021). Which is a compatible policy with older adults 'Wheelchair accessible housing' standard. Specialist older people's accommodation should be adaptable for residents who are wheelchair users (GLA, 2021). As a result, planning for older people and children has the same policy directions that could be integrated in one site. The problem is that the 'Accessible Housing' policy is only applied for specialist older people's accommodation, making many older adults in London require accessible specialist accommodation or adapt their houses to live independently. Another issue is that the 'Accessible Housing' policy and Part M volume 1 of the Building Regulations is still very limiting to new dwellings in London according to the time of the report published in 2019 (GLA, 2021).

It is still to early to assess the outcomes. The national plan for Greater London's growth was put in 2021. London boroughs are responsible for preparing local plans and development frameworks and should generally conform to the Mayor's directions.

5. ON THE FIELD

5.1 Overview

5.1.1 Methods used

After showing many case studies and examples in the literature review about the positive outcomes of putting children and older adults together (part 2.4.1 What happens when the very young and old interact?), it was time to assess the theoretical framework perspectives through evidence . Different methods were used in the fieldwork to gather qualitative and quantitative data to gain more information about the two age groups. First, the survey questionnaire method was used to reach a broader audience to determine insights into the two age groups, evaluate the data and draw conclusions. The second method was more in-depth interviews to acquire more profound insights and dig deeper into the topic. The qualitative interview method is usually used to obtain a point of view and analyze experts' perceptions about the subject with open-ended questions so that the participants can express their views (Creswell & Creswell, 1994).

5.1.2 Challenges

The challenging part of the questionnaire was to give it to the precise age group I am studying, mothers with children from 2 to 5 years old. Likewise, in older adults, to find older adults who are 65+. Sometimes I had to ask them the questions orally and assist them with filling the questionnaire. This has brought more insights from them and comments that helped capture more perceptions and feedback about the topic. Both questionnaires had to be filled anonymously to respect people's privacy as some questions were personal. It was indicated that the collected data would remain confidential and used solely for research purposes. All the people I gave the questionnaires answered it except one older adult who apologized, saying he didn't feel comfortable answering the questions as they are highly personal.

5.1.3 Questionnaires background information

Two questionnaires were designed and conducted for two groups; "Mothers of Preschoolers" and "Older Adults." Their feedback and insights would help understand whether the research

idea is feasible and beyond. This section will represent the practical fieldwork, analyze and interpret data from the two questionnaires. The questionnaire method was chosen based on the target audience to focus on a set of multiple-choice questions for participants to obtain their precise feedback and insights about the research idea. Furthermore, understand the overall needs and issues from a spatial and sociological point of view. Both questionnaires were spread borough-wide in Greater London and were categorized mainly under (North London -South London – East London – West London). The questionnaire was conducted online and face to face in parallel for the two groups. It took around more or less 6 minutes for each age group. The questions were to the point and concise, with multiple-choice and rating scale questions to capture precise answers.

The first questionnaire was conducted by 82 mothers of preschoolers. The age group, location, marital status, and children's age are summarized in the following (Table 5). The second questionnaire was conducted by 104 Older Adults (female or male). The respondents' age group, marital status, location, and gender are as follows (Table 6).

Question	N	%	Max
Age group			
25 to 30	17	21%	✓
30 to 35	32	32%	
35 to 40	20	24%	
40 to 45	13	16%	
45+	-	-	
Location			
Central London	5	6%	✓
North London	8	10%	
South London	16	15%	
East London	11	13%	
West London	11	13%	
Other (Northwest,Northeast,…)	31	38%	
Marital Status			
Single (never married)	3	4%	✓
Married or Domestic partnership	78	95%	
Divorced	1	1.2%	
Separated	-	-	
How old is your child?			
0-2 years	11	13%	✓
2-4 years	44	54%	
4-6 years	20	24%	
6+	7	8%	
Other (stating more than one Child)	4	5%	

Table 5. Mothers Questionnaire Variables

Question	N	%	Max
Age group			
55 to 60	17	6%	✔
60 to 65	32	38%	
65 to 70	20	53%	
70 to 75	13	5%	
75 to 80	-	-	
Location			
Central London	17	16%	✔
North London	33	32%	
South London	26	25%	
East London	16	15%	
West London	10	10%	
Other (Northwest,Northeast,…)	2	2%	
Marital Status			
Single (never married)	3	4%	✔
Married or Domestic partnership	25	24%	
Widowed	39	37%	
Divorced	20	19%	
Separated	20	19%	
Gender			
Female	65	62%	✔
Male	39	37%	

Table 6. Older Adults Questionnaire Variables

Lofland (1974) in styles of reporting qualitative field research points out that qualitative methods use similar data collection and analysis strategies, but the way findings are reported may differ. Thematic analysis is one of the methods used to organize the data after the collection. Thematic analysis is usually done after an initial reading through all the gathered information, coding and describing them and then representing the data under themes (Creswell & Creswell, 1994). Each questionnaire was classified into four main themes (Figure 35) all interconnected under one objective: Can creating an intergenerational program benefit the two age groups? The secondary objective is to understand the spatial and sociological needs, issues, and aspirations each group faces (The older adults in their homes and children in their ECEC setting) to be implemented in the proposed intergenerational model.

5.1.4 Interviews background information

To measure the breadth and depth of each theme, extracts from interviews will be integrated under each theme and discussed with the analysis of the questionnaires. The interview methodology is used when needed to gather specialized knowledge and perceptions of participants (Creswell & Creswell, 1994). In the study, interviews were conducted with experts from different backgrounds who have experience working with children and older adults. The interviews were semi-structured to gather information in a conversational style, dig deeply into a topic, and understand the interviewee's perception. The questions were fixed and they were asked in a specific order. To read the full transcript of the interview, you can check (Annex B, C, D).

The first interviewee was Judith Ish-Horowicz MBE; she is the director and principal of Apples and Honey Nightingale CIC, the first co-located nursery in a care home in the UK. Judith is also an Early Years educator who enjoys learning with 3rd agers. Furthermore, this paper wants to focus beyond explicit expert knowledge.

Each method provided a different perspective for the study; the questionnaire method was mainly directed to mothers as we couldn't ask children with this age. At the same time, interviews focus more on children's behavior to gather opinions, perceptions, and attitudes about children.

We talked with Fernanda Ahumada, who obtained a degree in Early Childhood Education and a
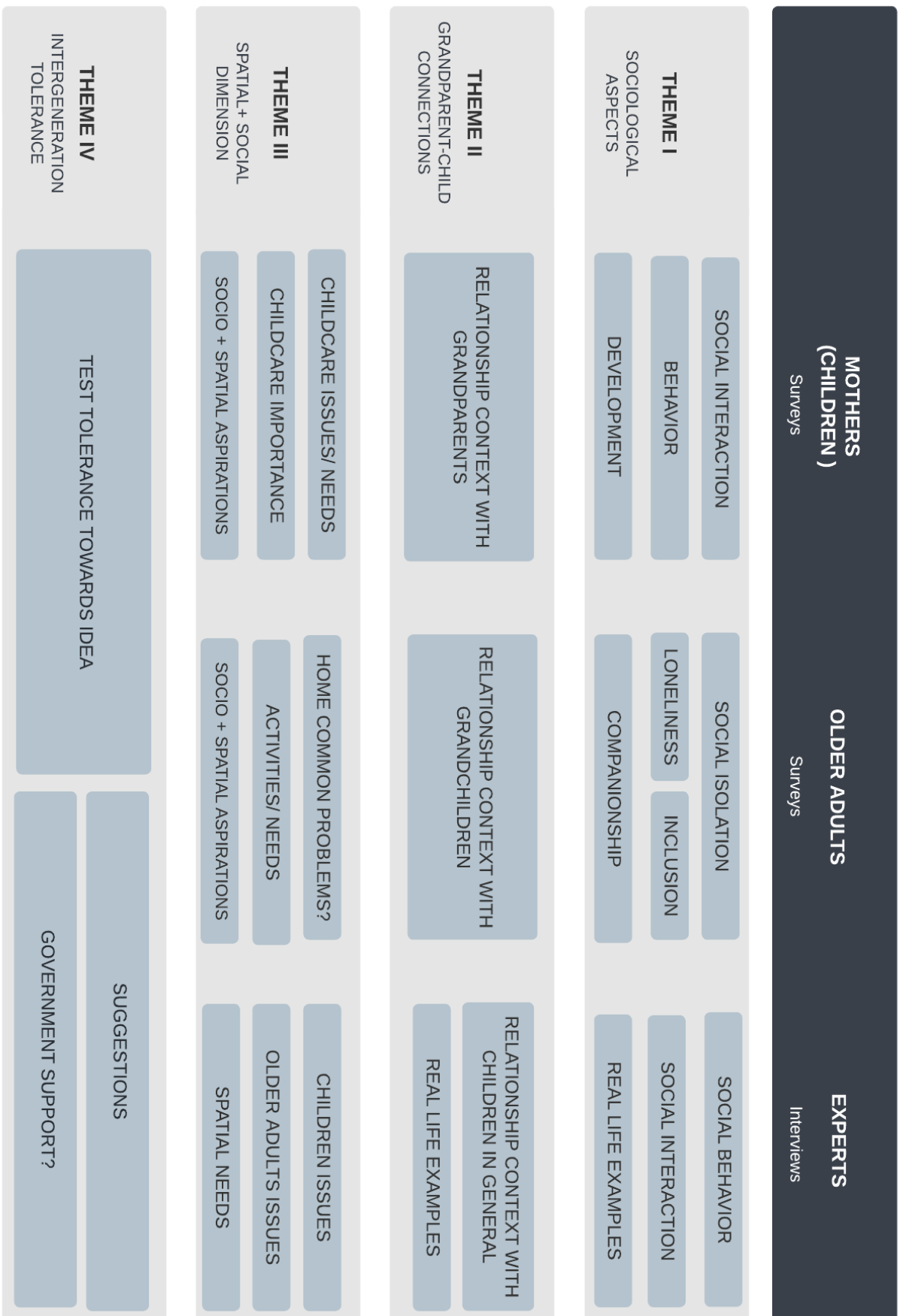
Figure 35. Thematic Analysis of mothers questionnaire, older adults questionnaire, and Interviews grouped under four main interconnected themes

master's degree in Developmental Psychology and teaches 4 to 6 years old children in a public school. Also, Gamila El Leithy who is studying PGCEi (Post graduate certificate in Education-international) At the University of Nottingham and an art teacher who deals with children on a daily basis.

5.2 Thematic Analysis: Children
5.2.1 Theme I Sociological Aspects

[Theme I] assessed children's social interaction, behavior and development nowadays and after the COVID-19 Pandemic. The objective of this theme was to understand whether children lack companionship and whether the lockdown (lack of social contacts and having few people to interact with regularly) has affected their social skills to be able to assess the future effects of social isolation on their development. Almost half of the mothers (47.6%) affirm that their child is social and easily finds companionship. But when we asked whether it was the same case after the lockdown?

(30%) of mothers affirm that the COVID-19 lockdown affected their child's social interaction (Figure 36). The results interpret that children are naturally social and have no problems with companionship until they get socially isolated. This happened during the lockdown (COVID-19 Pandemic). In simple terms, social isolation and staying home for lengthy periods can affect children's social interaction, which may affect their development. It is important to assess and track children's social interaction because it has a more considerable impact on their social and academic development as It was studied in the literature review (part 2.2.3) that children with a high level of social skills can perform better academically and are more engaged in school and their future.

COVID-19 lock down has affected my child's social interaction

Strongly Agree — 30%
Disagree — 20%
Neutral — 24%
Agree — 16%
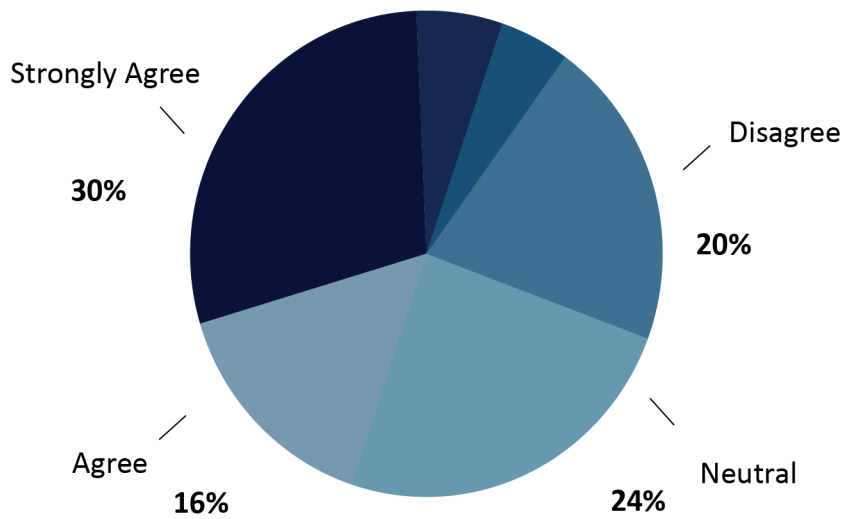
Figure 36. "COVID-19 lockdown has affected my child's social interaction."
Part of the mothers questionnaire.

Under the same theme, we have asked experts more or less the same questions whether they noticed any differences in social behavior after COVID 19 lockdown and when children interact with older adults how it affects their academic, behavior and cognitive skills.

"*The changes in children's social skills, communication and language after lockdown is marked but we have suffered less than many others as we have been able to maintain our programme throughout the pandemic.*" (J. Ish-Horowicz, personal communication, April 25, 2022)

"*…, we have seen that the children who leave our intergenerational setting have more advanced communication skills than many of their peers.*" (J. Ish-Horowicz, personal communication, April 25, 2022)

"*…I have seen many examples of that in my students where children who have strong relationships with their grandparents usually have developed language skills and have knowledge beyond their age………, I was also amazed at how they would retain the knowledge or information shared by their grandparents and would use it in different contexts correctly.*" (G. EL Leithy, personal communication, May 13, 2022)

"…Children display greater responsibility for others in our intergenerational setting, when they are jumping or running around in a session, they are very careful around their grand friends' feet and wheelchairs" (J. Ish-Horowicz, personal communication, April 25, 2022)

"One child who came from a divided family and displayed very anti-social behavior when with his peers, was sitting by a 'grand friend' who was wheelchair bound and had lost the ability to communicate verbally, following a stroke and was very angry and often aggressive in her frustration. Without prompting, he placed his hand on hers and sat quietly during an intergenerational setting, calming her and being very gentle. It was totally unexpected behavior and very moving." (J. Ish-Horowicz, personal communication, April 25, 2022)

5.2.2 Theme II Child-Grandparent Connections

[Theme II] assessed the relationship and context between children and their grandparents in London. The objective was to understand whether the children's grandparents live in the same city, see how frequent the interaction is and how children feel about this interaction.

More than half of the mothers (59%) affirm that it is complicated to visit grandparents constantly because they live far away, while (26%) of mothers affirm they live close by so It's not a complication for children to see their grandparents (Figure 37). When asked how often your child interacts with their grandparents, (30%) of mothers said once a year (as the children's grandparents live in another country). While 21% of mothers (who have their grandparents in the same region) said once a week.

42% of mothers assert that their child feels happier when they sit/play with their grandparents and love listening to their stories, while 30% of mothers were neutral about it (Figure 38).

The results clarify that not all children live in the same region with their grandparents. That's why the majority said it was difficult to visit constantly. However, the majority of mothers believe their children feel happier when they meet and interact with their grandparents (whether they sit together and listen to their stories or play together). The intention was to understand children's feelings about their grandparents and their bonds with them. To predict whether the children will accept older adults in a community. As well as how sitting and playing with grandparents affects children's feelings toward them even though most children haven't seen

their grandparents for a while, so there isn't a strong bond. As mentioned in the literature review (part 2.4.1), When children interact with older adults in an intergenerational context, it enhances their social skills, academic performance, vocabulary, language, positive social behavior, less anxiety, and a better perception of ageing.

Is it complicated to visit Grandparents?

It's really complicated because they live far away

59%

26%

They live close by

10%

It's okay for me even if they live close by
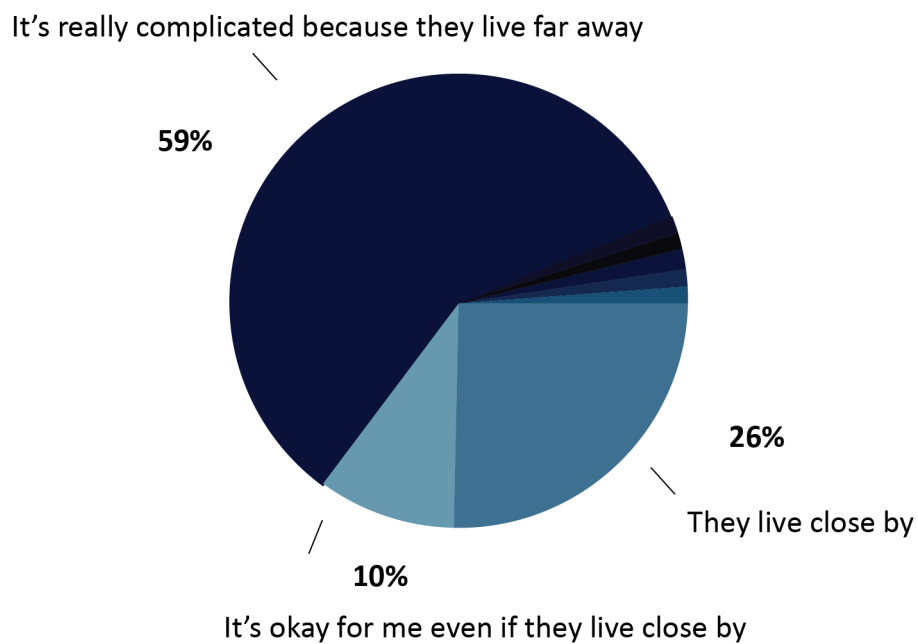
Figure 37. "Is it complicated to visit Grandparents?"

Part of the mothers questionnaire.

My child feels happier when they sit/play with their grandparents.
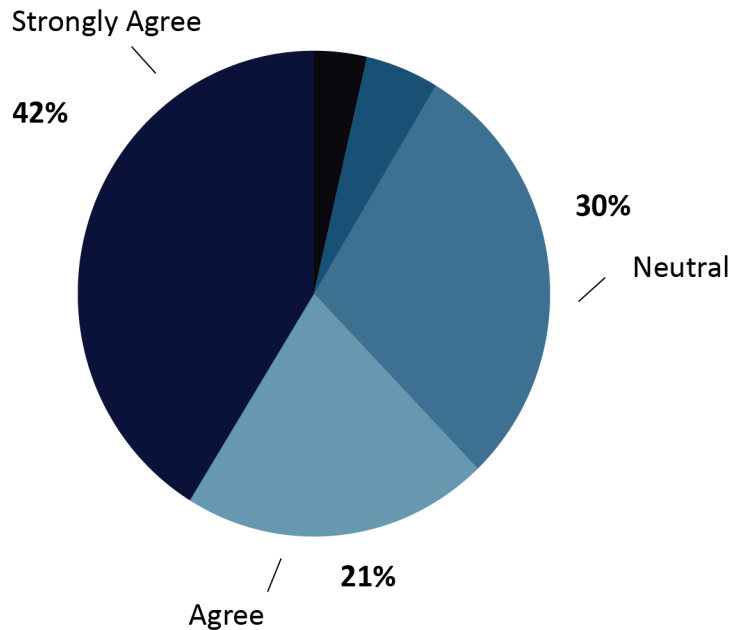
Figure 38. *"My child feels happier when they sit/play with their grandparents."*

Part of the mothers questionnaire

In the same vein, we asked experts a series of questions to understand if they witnessed social interactions between children and their grandparents or older adults in general. How was it and if they can describe it?

"What inspired me to start the intergenerational model is that many of the children at my nursery did not have grandparents living nearby and had limited exposure to intergenerational experiences. I decided to visit a local care home as part of the nursery's educational programme. Seeing the impact our occasional meetings had on both the children and the residents and the beautiful relationships that were formed, inspired me to approach the Care Home and ask if I could open a daycare and pre-school in their grounds." (J. Ish-Horowicz, personal communication, April 25, 2022)

"…I have heard many children speak about and mention their grandparents a lot in their stories. I remember one day when I spotted a girl in year 2 crying one day during the break

and when asked what was wrong, she replied by saying that she misses her grandfather who recently passed away…, it says a lot about the kind of relationship and bond that they had." (F. Ahumada, personal communication, April 28, 2022)

"…., *we used to have conversations about the children, they were always highlighting the great skills of their grandchildren. How do they spend time together when their parents were at work and how much fun they have with them"* (F. Ahumada, personal communication, April 28, 2022).

"…, *if the intergeneration setting was introduced, I think they would also be more curious and ask lots of questions to the elderly because they are used to that with their grandparents. I have a student in year 2 who has a very special relationship with her grandfather where she mentions him a lot and when I spoke to her mother, she told me that he can sit with her for hours and talk to her about different topics and she would ask questions and retain that knowledge much more than she would in different contexts even at school; and maybe that's because he talks about topics that might be beyond her age and that she wouldn't be able to talk about with younger people or who would maybe over-simplify.*" (G. EL Leithy, personal communication, May 13, 2022)

5.2.3 Theme III Spatial and Social Dimension

[Theme III] was about Childcare issues, needs, importance and parents' main sociological and spatial aspirations in Early Childhood Education and Care.
The objective was to understand the importance of preschool and childcare for mothers, what are the sociological and spatial needs nowadays of their children and the issues they face. Understanding their needs will enable us to integrate them into the proposed intergenerational model solution.
(67%) of mothers are aware that Early childhood education and care for children is important as it helps their children's social skills(Figure 39). Furthermore, more than half of the mothers (53%) think childcare/preschool/ nursery is important because of social skills more than academic skills.

Early childhood education and care for children is important as it helps their social skills
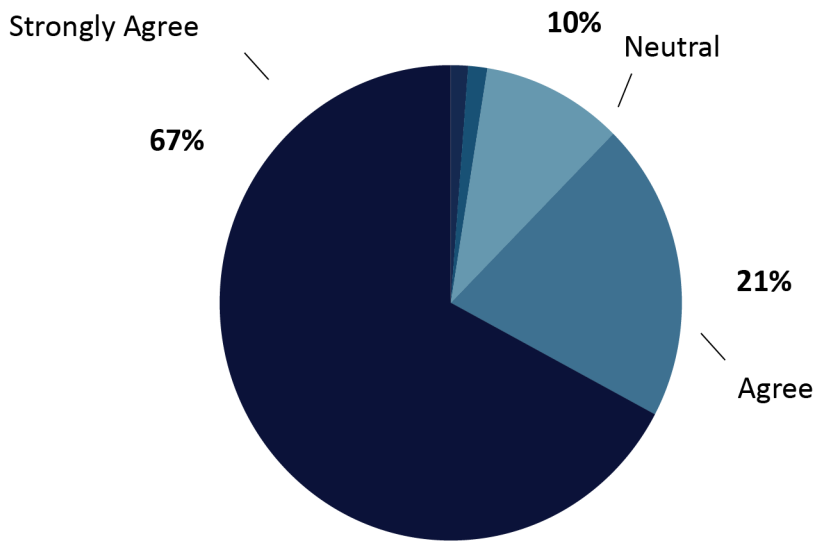
Figure 39. *"Early childhood education and care for children is important as it helps their social skills."*

Part of the mothers questionnaire.

(77%) of mothers said that the main issue they face when searching for childcare/preschool is affordability, while (34%) of mothers stated it was mobility to find one near their home/work.
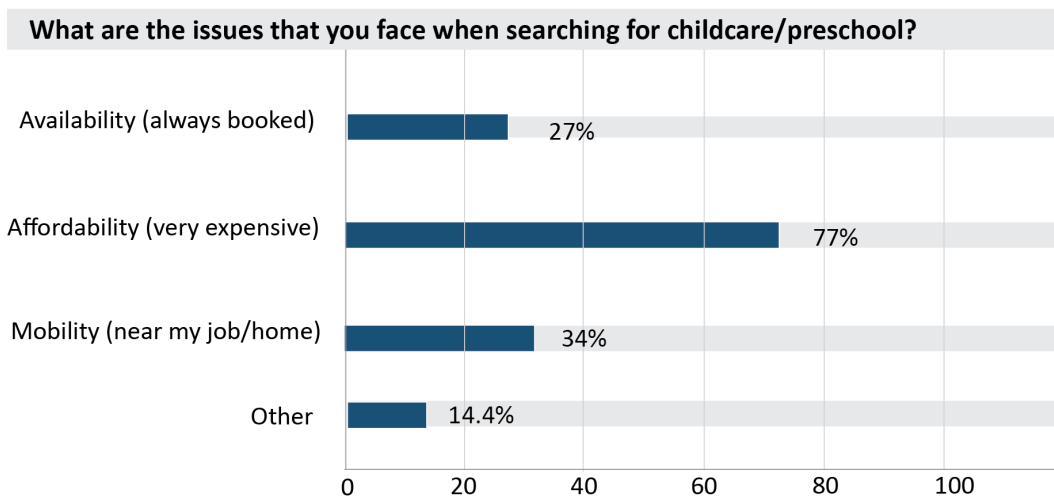
Figure 40. *Issues that mothers face when searching for a Childcare/Preschool/Nursery.*

Part of the mothers questionnaire.

(84%) of mothers believe that what makes it a good childcare/preschool is social interaction and how they prepare them for the real world. While 78% said 'outdoor spaces' with a vibrant and interactive playground and (78%) chose 'the variety of the activities.'

What makes it a good childcare/preschool/nursery?

Category	Value
Outdoor Spaces: A nice interactive and vibrant playground	78%
Lots of activities	78%
Academic and language development program	63%
Social intnteraction and how they introduce them to the real world before school	84%
Quality of spaces	48%
Other	6%
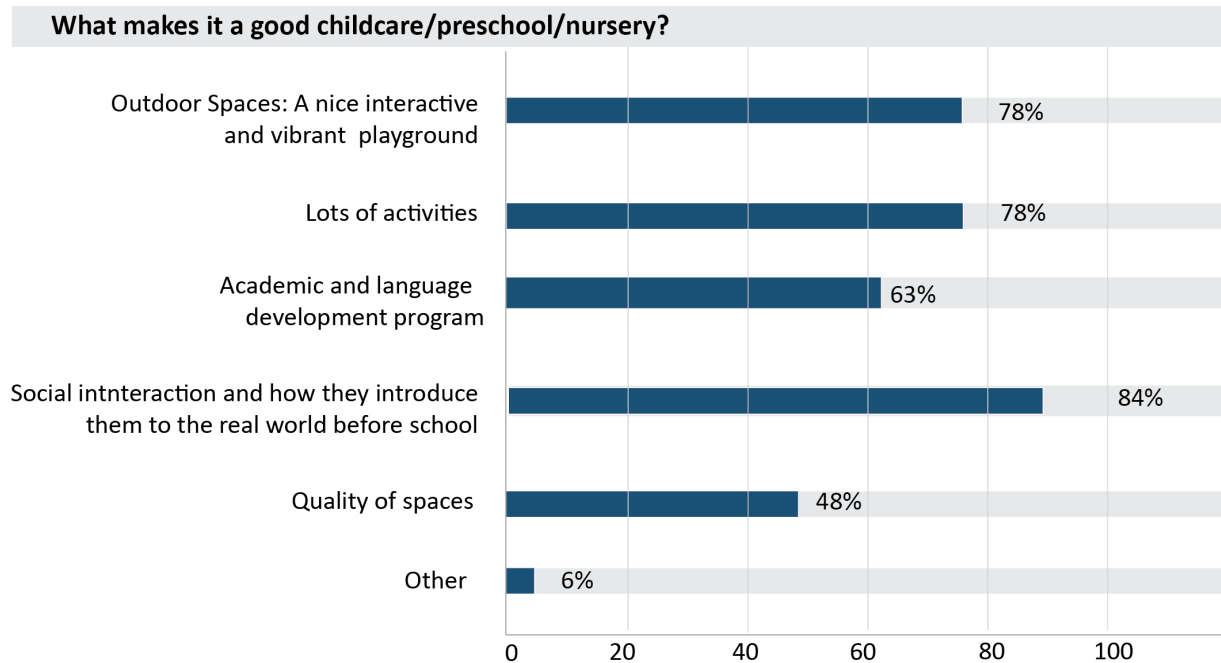
Figure 41. "What makes it a good childcare/preschool/nursery?"

Part of the mothers questionnaire.

(38%) of Mothers were not sure whether there are enough childcare facilities or not in London, while (34%) of mothers indicated that there are not enough childcare facilities in London.

The results interpret that most mothers realize that social interaction is essential for their children and that it's the main criteria for the majority when looking for childcare. Yet, their main concern is that London's childcare expenses are unaffordable. For most, Early childhood education and care prepare their children for the real world. Which is more critical for them than academic skills as they understand how it is crucial for their children's social skills and development. More than a quarter of mothers faced problems finding childcare facilities near their home/work and they believe that there isn't enough supply of childcare facilities in London.

For example, while doing the survey, one of the mothers said that the 'research idea' was one of her criteria when looking for childcare facilities; however, she didn't know the intergenerational model existed. She said, *"Variety and quality of interaction are the criteria we are looking*

for in childcare. We were also looking for a place with children of various age groups who can interact with each other."

Being around children encourages more conversation. As demonstrated in the literature review (part 2.2.3), the absence of social interaction affects children's development in various ways and is directly proportional to psychological distress and mental health. It may affect their future performance. It was discussed through studies in the literature review that having trouble connecting with other children and making new friends affects children's mental health.

The interview participants have been asked more or less the same questions related to theme III regarding issues with children nowadays and needs related to the "space" that must be considered for children.

"*We live in a fractured society where people are under constant pressure and stress and are bombarded with information and news. There is not the extended family set up that used to give structure and support and parents and carers do not time to give the attention children need and deserve. TV and other electronic devices are used to occupy children so that their parents can get on with other things and there is not the freedom to just go out and play and explore.*" (J. Ish-Horowicz, personal communication, April 25, 2022)

"*I think one of the main problems it would include: being too dependent on technology, not wanting to explore their environments and rely on sitting in front of screens and not having opportunities to discover different things and experiences.*" (G. EL Leithy, personal communication, May 13, 2022)

"*I think children are the ones who knows their needs, but from what I have observed, they are interested in non-structured and natural spaces.*" (F. Ahumada, personal communication, April 28, 2022)

"*I think it would be a place with indoor and outdoor spaces with room for different activities and a chance to explore different sceneries, materials, textures, and experiences.*" (G. EL Leithy, personal communication, May 13, 2022)

5.3 Thematic Analysis: Older Adults
5.3.1 Theme I Sociological Aspects

[Theme I] was about loneliness, Social isolation, Inclusion and Companionship. The objective was to understand the percentage of older adults living in single-person households? and does being old necessarily entails being alone? Adding up, is living alone can lead to being lonely?

1) How often do you feel a lack of companionship? 2) How often do you feel left out? 3) How often do you feel isolated from others? The three main questions: were taken from a report "A brief guide to measuring loneliness" identified by ONS, which asks people indirectly about emotions associated with loneliness without mentioning the word 'lonely.' Across the world, these questions are widely used in studies of individuals of all ages, and they can be asked in person or as part of a self-completed questionnaire (whatworksWB, 2019)

It was found that (65%) of older adults live alone (Figure 42). But do they feel lonely? When I asked them how often did they lack companionship? (42%) stated they often lack companionship, while (35%) think sometimes. And when we asked them when was the last time they met a friend? (41%) stated the last time they met a friend was a month ago, while (20%) said they couldn't remember when was the last time (Figure 43).

- (35%) believed they often feel left out, and (35%) think 'sometimes' while (20%) said 'Always.'

 (38%) of older adults often feel isolated from others, (32%) think sometimes and (15%) said 'Always' (Figure 44).

Do you live alone?

No

Yes

34%

65%
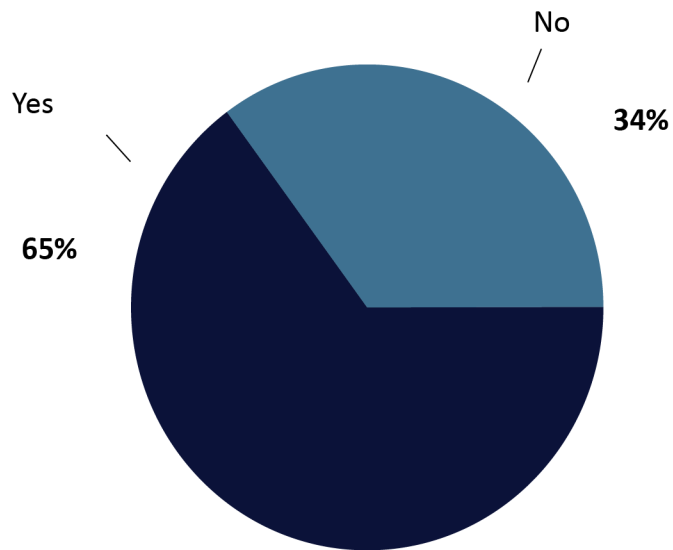
Figure 42. "Do you live alone?"

Part of the Older Adults questionnaire.

When was the last time you met a friend?

Last Month

I can't remember

41%

20%

Two weeks ago

32%
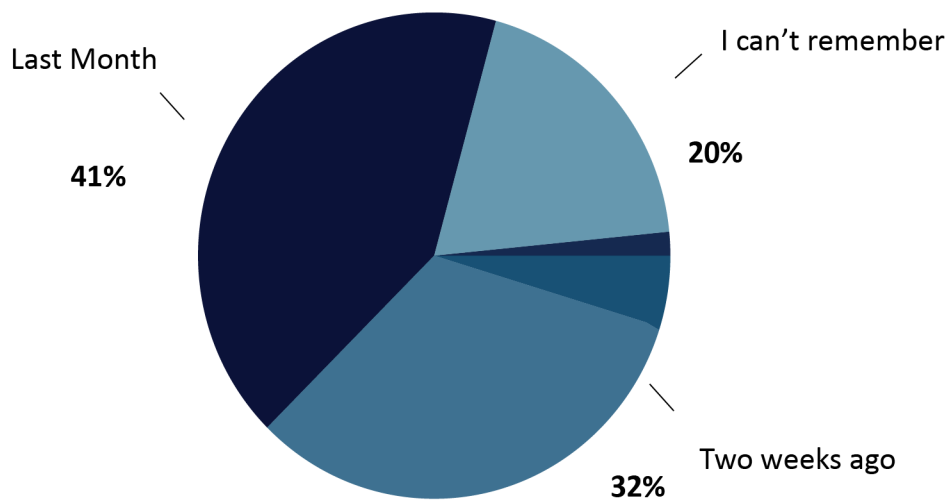
Figure 43. "When was the last time you met a friend?"

Part of the Older Adults questionnaire.

How often do you feel isolated from others?

Often

38%

32%

Sometimes

38%

13%

Always

Rarely
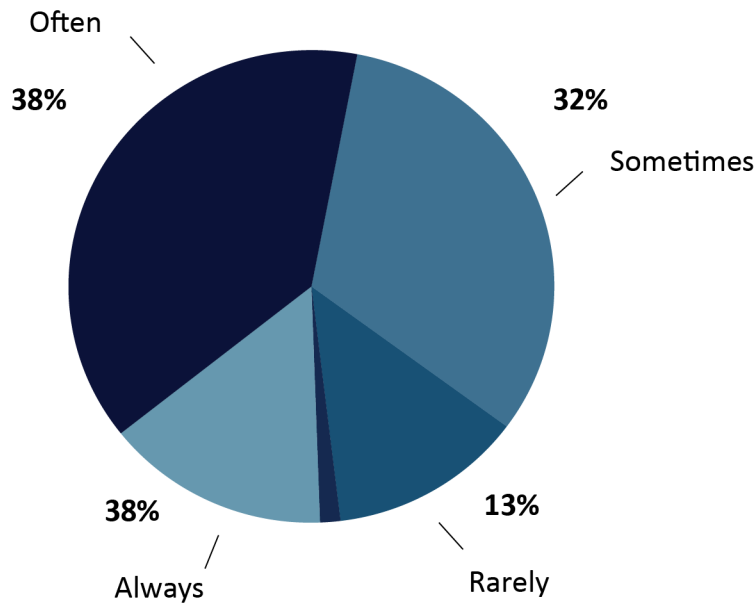
Figure 44. "How often do you feel isolated from others?"

Part of the Older Adults questionnaire.

Results interpret that most older adults feel lonely as they often lack company. Most of the older people that took the questionnaire live alone in single-person households. Statistics show that most of them can stay up to one month without seeing a friend (although the relationship quality is not assessed). Many feel left out, which means they're excluded from the community. Being integrated with the community can make them feel less lonely. From the statistics, this has led to social isolation for most of them. A few possible exceptions to this pattern was noted. Older people who live alone face sociological challenges, leading to many health and mental issues effects.

Social isolation and loneliness have been linked to various physical and mental illnesses such as heart disease, anxiety, obesity, a weakened immune system, depression, cognitive decline and Alzheimer's disease (National Institute on Aging, 2019). As mentioned in the literature review (part 2.1.2 Older Adults mental health), a sense of social connection is crucial in preventing psychological distress. Furthermore, it was also mentioned (part 2.1.1 the facts of loneliness) that encouraging social interaction is among the most effective ways to prevent depression among older adults. Besides, it was indicated that tackling loneliness in the early years can save more than half of the government's health costs in the future.

5.3.2 Theme II Grandparent-Child Connections

[Theme II] was about grandparent's relationship and context with their grandchildren in London. The objective was to assess grandparents' relationship with their grandchildren nowadays; How do they feel when they sit and play with their grandchildren? From a superficial perspective, this was the best model to know how older adults feel about being with children and how often they see each other.

(38%) of older people see their grandchildren once a month and (21%) see their grandchildren once a week, while (18%) barely see them, only a couple of times a year.

(41%) of older people believes that playing with their grandchildren brings them absolute happiness, and (34%) think they bring them happiness (Figure 45).
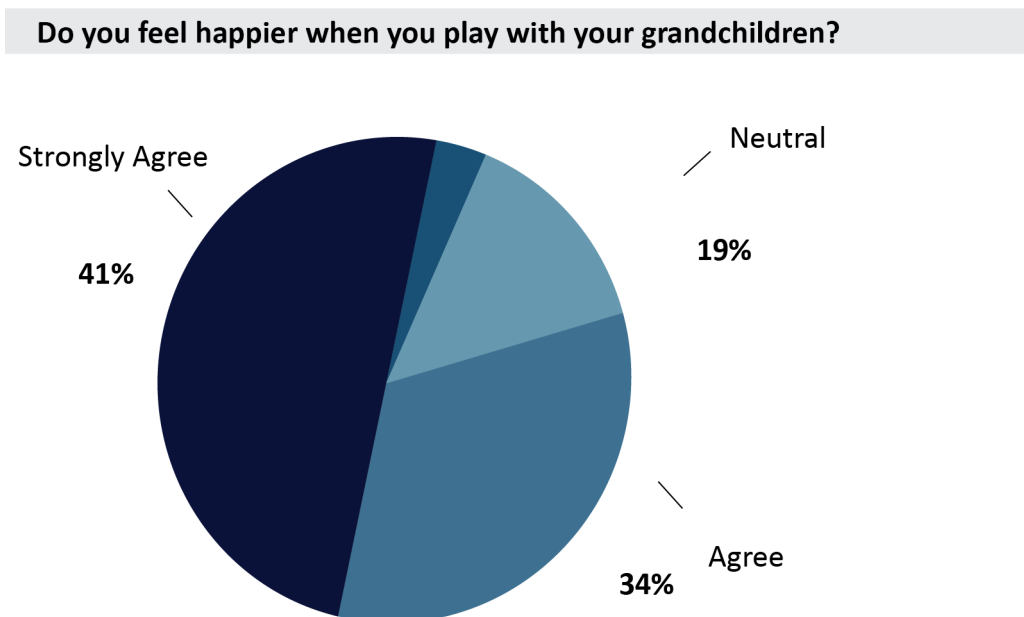
Figure 45. "Do you feel happier when you play with your grandchildren?"

Part of the Older Adults questionnaire

As per the frequency, the regularity of Grandchildren visiting Grandparents. At the same time, it isn't straightforward to assess because some families migrate to London without their extended family. However, the statistics show that most older adults have their grandchildren in the same country as they see them more often. Unlike when mothers took this survey, It

clarified otherwise that not all children have their grandparents living in the same city/country; that's why the majority said it was difficult to visit constantly. Nevertheless, The results indicate as expected, that the majority felt happy when accompanying their grandchildren.

It is not easy to bring a smile to older people's faces, especially when they are retired and getting older and if there is something that brings them joyful moments, it could possibly promote their positive well-being.

The grandchild/grandparent relationship is beneficial for the grandparent as older people love telling stories to children and acting as role models. As a result, it may give them a sense of being heard and delay mental decline as mentioned in (part 2.4.1 What happens when we put the very old and young together).

Similarly, I asked experts a series of questions to determine whether they witnessed social interactions between older adults and children in an intergenerational model or another context and describe whether there are any challenges.

"*Some residents are not interested in joining the intergenerational programme and some even dislike it but the majority love it and their faces light up when they see the children. It can motivate them to 'try a bit harder' when we have an IG programme and certainly makes them more physically active.*" (J. Ish-Horowicz, personal communication, April 25, 2022)

5.3.3 Theme III Spatial and Social Dimension

[Theme III] was about the common problems they face, activities and needs, sociological and spatial aspirations of older people. The objective was to understand the problems retired older adults face in the spaces they live in nowadays from a spatial and psychological perspective of a home and what they prefer to do in their leisure time. Understanding that will help us integrate their needs in the proposed intergenerational model.

I asked oleder people "What makes you feel Home?" Answers were classified and analyzed under four main topics: Identity – Privacy – Family - Sociability (Figure 46) . More than half of older people (58%) tink that home is a self-expression aspect to them, being themselves, doing their own things and practicing their hobbies, which they identified as part of their identity.

(45%) think home is a feeling of comfort through warmth, cosiness or security. (45%) declared that home is where privacy occurs, whether being naked emotionally or physically and having their own bed. (17%) specified that home is about family connections which I identified as a sociability aspect.

PREDICTABILITY

DOING YOUR OWN THINGS

HOBBIES

WARMTH

COSY

ROUTINE

SELF EXPRESSION

COMFORT

BEING YOURSELF

H O M E

SECURE

PRIVACY

NAKED EMOTIONALLY & PHYSICALLY

FAMILY

OTHER

OWN BED

PETS

COMMUNICATION

IDENTITY 58%

FEELINGS 45%

DINNER WITH FAMILY

PRIVACY 45%

FAMILY

SOCIABILITY 18%
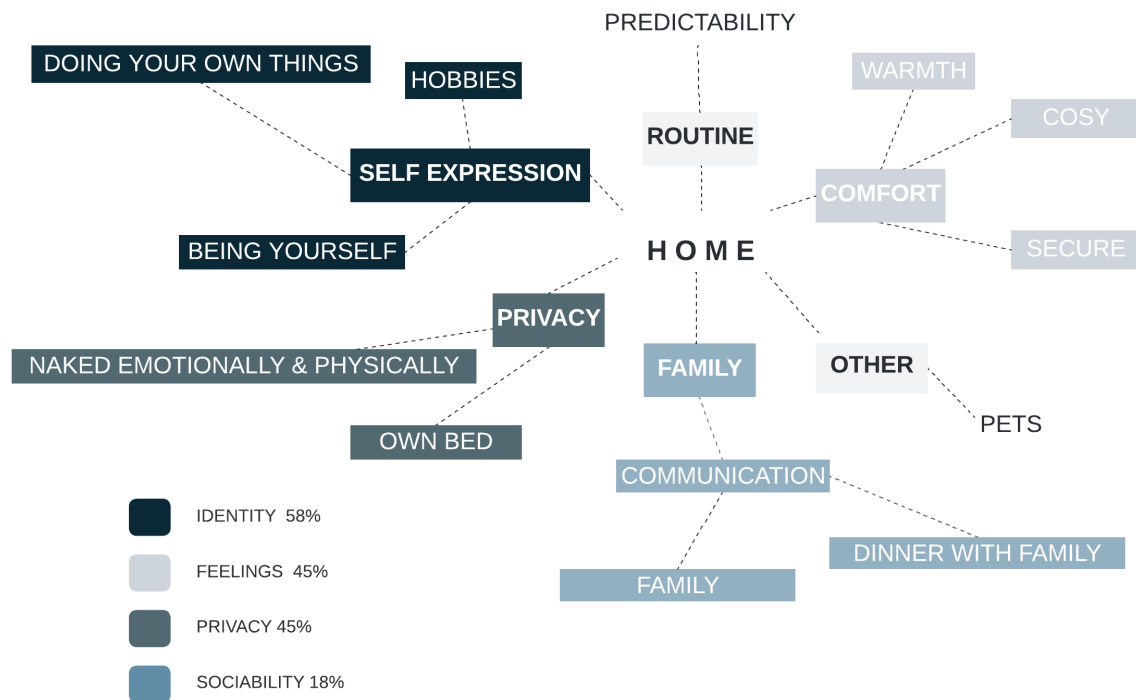
Figure 46. The diagram is part of the survey asking 104 older adults "what makes you feel home?"

Part of the Older Adults questionnaire

After analyzing the results, these trends show a possibility that at this age, since most of them are retired and living alone, home isn't a sociability aspect for them. It's a psychological need or a feeling, a place where they do the things they love and feel comfortable as the majority stated.

When I asked about their Needs when they want to move to a better dwelling (Figure 47). (45%) stated apartments with a view, while (38%) chose in the heart of the city. (39%) indicated they want "An open interactive green place for all the residents to meet," while (36%) wanted a common area to eat together.

Please mark your main needs if you want to move to a better place

Category	Percentage
More sunlight in apartments	27%
Apartment with a view	45%
In the heart of the city	38%
Amenities and services inside the community	31%
An open interactive green space for all the residents to meet	48%
Common area to eat together	36%
Other	11%
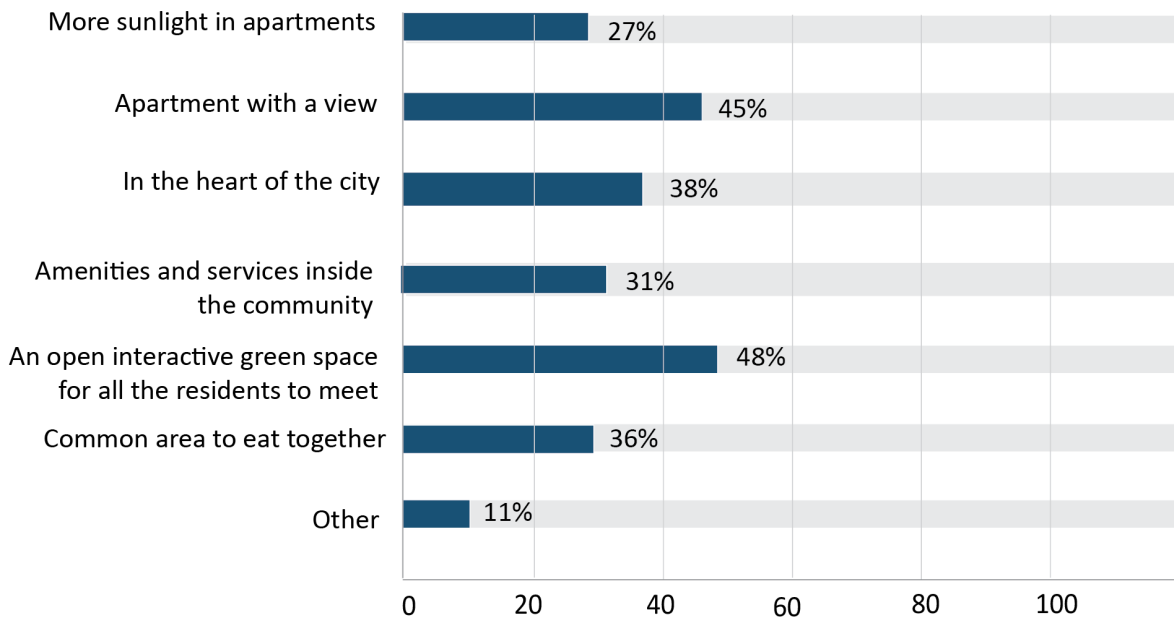
Figure 47. "Please mark your main needs if you want to move to a better place."

Part of the Older Adults questionnaire.

When I asked, "what are the Temptations to visit a park?" (Figure 48). (44%) said "Have a walk," (40%) said, "Getting exposed to nature," while (38%) stated to "conquer boredom."

What are two main reasons that tempt you to visit a park?

Category	Percentage
Meeting friends	33%
Have a walk	44%
Conquer boredom	39%
See families and children playing	31%
Getting exposed to nature	40%
Watch people around	25%
Walk my pet	7%
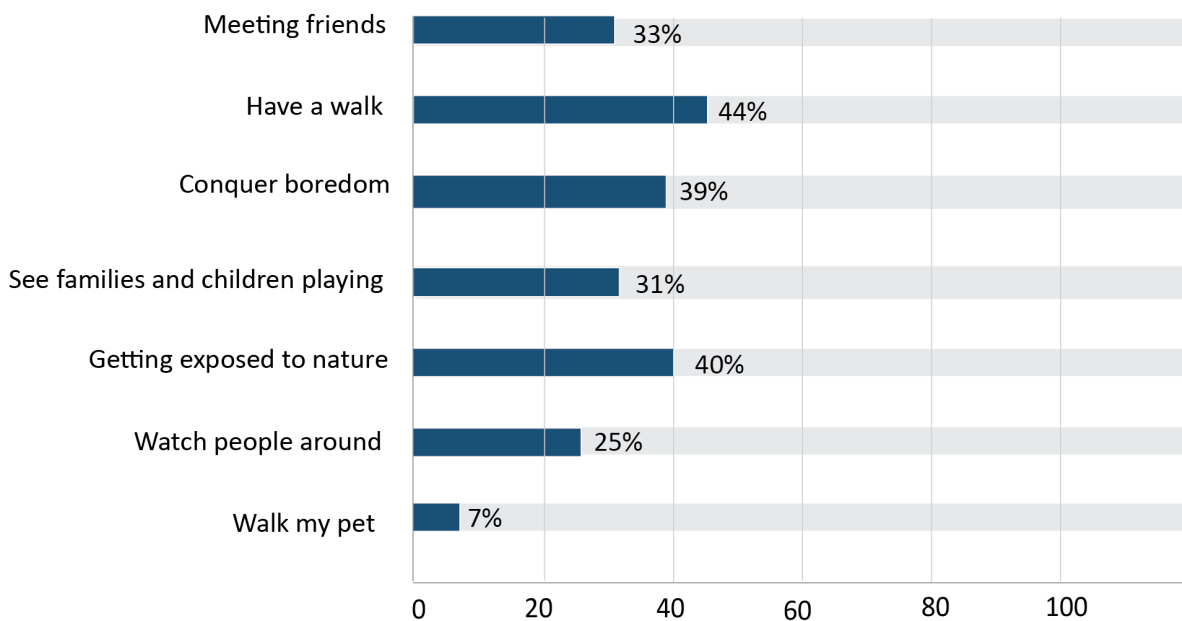
Figure 48. "What are the two main reasons that tempt you to visit a park?"

Part of the Older Adults questionnaire

What do they do in their free time? (40%) of older people go to the park while (40%) babysit their grandchildren—and (39%) are interested in Gardening and cooking classes.

-About the Common problem they face, (51%) believed "The need for self-worth: The urge of doing something," while (43%) are "Persistently sad" (Figure 49).

What are the common problems that you face?

Problem	Percentage
Lack of entertainment	40%
Health issues	29%
Presistently sad	43%
Need for self worth: The urge of doing something	51%
Dementia	31%
Lack of energy	23%
Too busy	1%
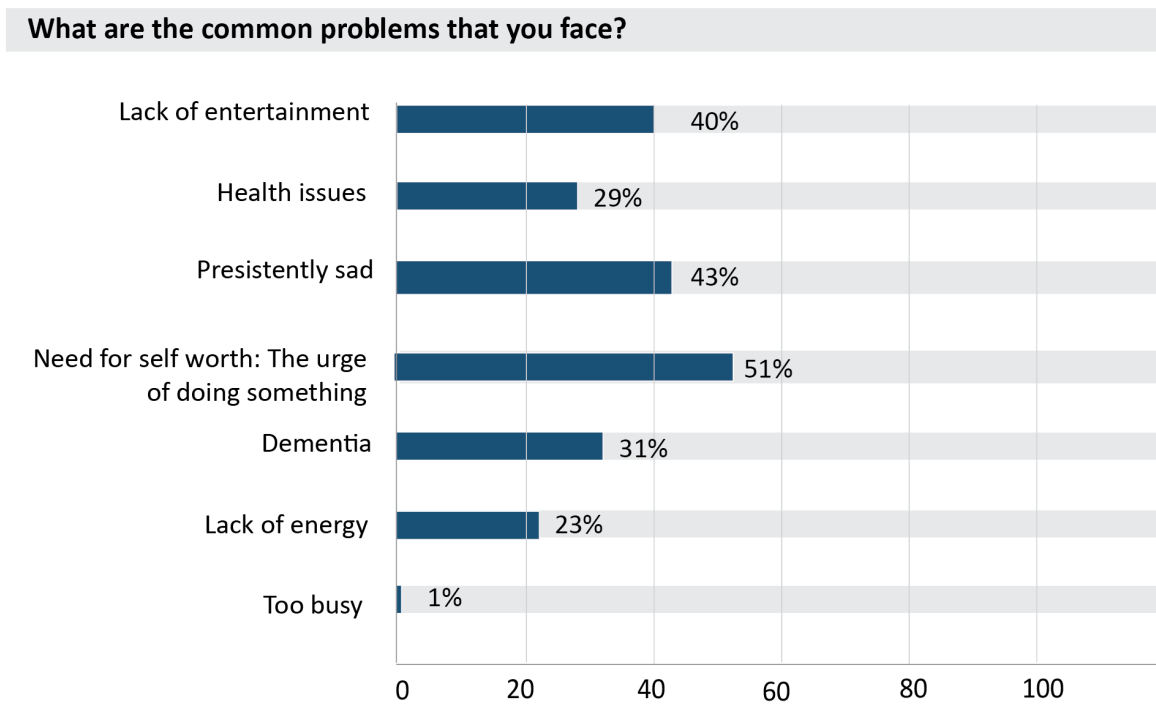
Figure 49. "What are the common problems that you face?"

Part of the Older Adults questionnaire.

A second possibility is that these trends show: The spatial needs results show that for most of the older people we've asked, nature is an essential aspect for them. "Having a walk" while "Getting exposed to nature" is crucial to the majority. "An apartment with a view" was very common among the answers and "*An open interactive green space for all the residents to mee*t" was requested among the majority as well.

The physical environment plays a significant role in influencing older people's lives. The benefits of having access to nature are substantial for older people. Being in nature is highly beneficial to their quality of life, mental health and wellbeing. Walking can strengthen older adults'

bones, improve their mood and well-being, and reduce the risks of physical diseases (Age, 2019b).

Planning a clean city with green spaces, well-maintained recreational areas, a secure environment, safe pedestrians and good building infrastructure helps create an ideal living environment for older people and affects the city's age-friendliness (WHO, 2022).

It's essential to have older adults' communities close by and accessible to green spaces, as this is one of their provisional aspirations for the community they wish to live in. In addition to the physical benefits of nature, it is also beneficial to mental health and well-being. Several studies have shown that walking in green spaces can improve moods, reduce depression and stress levels in older adults, as well as improve cognitive function and increase energy levels (Wolf & Housley, 2016). This point tackled how can planning communities and cities for older people help heal from the outside. Moving to heal from the inside, when we asked about the main issues older people face. The most critical statistics are that most of them felt "the need for self-worth: the urge to do something and the majority are "persistently sad."

Being persistently sad, feeling empty, or always in a bad mood is a sign of depression (National Institute on Aging, 2021). Can depression be prevented? As mentioned earlier in the literature review (Part 2.1.2), physical activity, social interaction, learning, and volunteering are the most effective ways to prevent depression in older adults to reduce loneliness and social isolation.

According to World Health Organisation (2018), there are 8 domains for Age-Friendly Environments (Figure 50). The report incorporates policy directions to create more age-friendly environments in which many cities and communities, local authorities and regional governments participate. Among the factors that indicate a healthy ageing environment is "social participation".
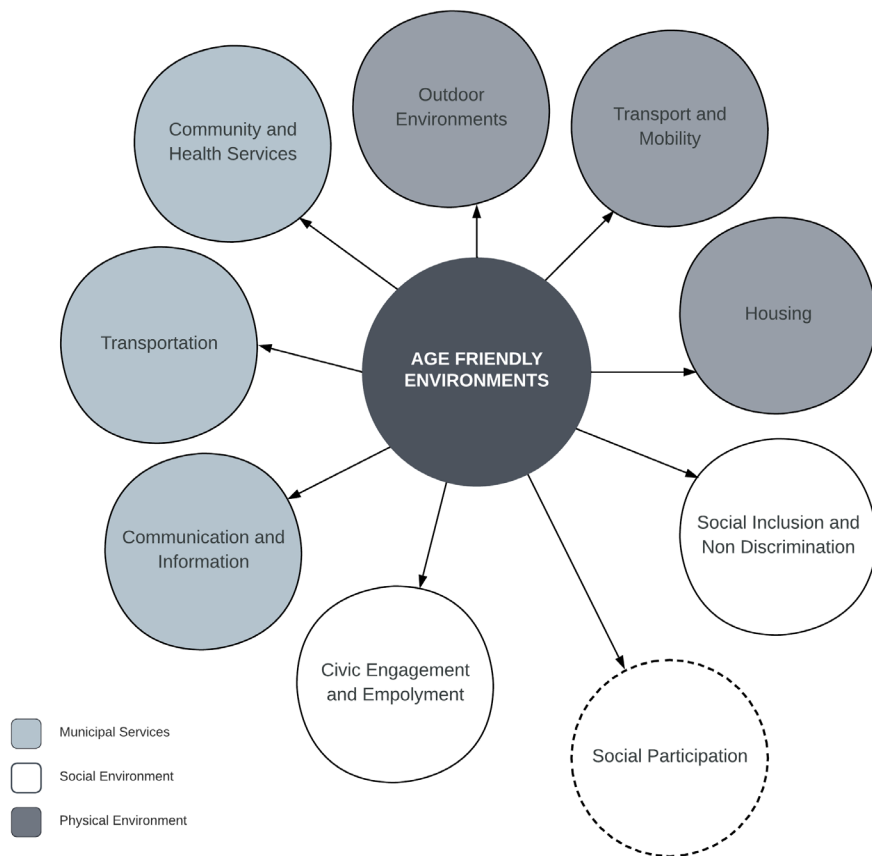
Figure 50. Eight Domains for "Age Friendly Environments," WHO 2018

Method: Illustrator

The goal of interventions in this domain is to promote older people's participation in social life and to combat loneliness and isolation. This can be achieved by creating, maintaining and promoting supportive environments that enable social interaction, active lifestyles and providing opportunities for meaningful social activities and maintain supportive social networks (WHO Regional Office for Europe, 2017).

Similarly, we asked experts a series of questions considering problems with older adults nowadays and must considered spatial needs.

"*Our older 'grandfriends' need space for their wheelchairs and walkers. Children need space*

to run around freely and safely. Spaces need to be accessible e.g., ramps. The children and their grandfriends need to be at the same level so that they can converse comfortably and make, bake, play etc at easily. Spaces need to be safe and secure but also accessible. Funriture needs to be ergonomically suitable for people with varying physical and mobility issues and but also not too expensive." (J. Ish-Horowicz, personal communication, April 25, 2022).

5.4 THEME IV: Intergenerational Tolerance: Children & Older Adults
Mothers

[Theme IV] was the final part of testing the mothers' tolerance towards the idea and asking whether there is any support from the government and if they have any suggestions for the research idea. The objective was to see how further they are tolerant towards the idea. We first stated that studies have proven scientifically that putting children with older adults in daily interaction can improve children's social behavior, social interaction, language and speech development. Then stated that safety factors will be considered, "Now would you agree to let your child interact with the elderly daily in a preschool playground?"

More than half of the mothers (62%) see that it's a great idea and (27%) they were not sure. *"Very interesting study.*" One mother commented while answering. "*I loved this so much and had organized weekly sessions at a care home in Canary wharf at a school I worked at. Then Covid hit*!" Another comment from a mother.

Would you agree to let your child interact with the elderly in a preschool?

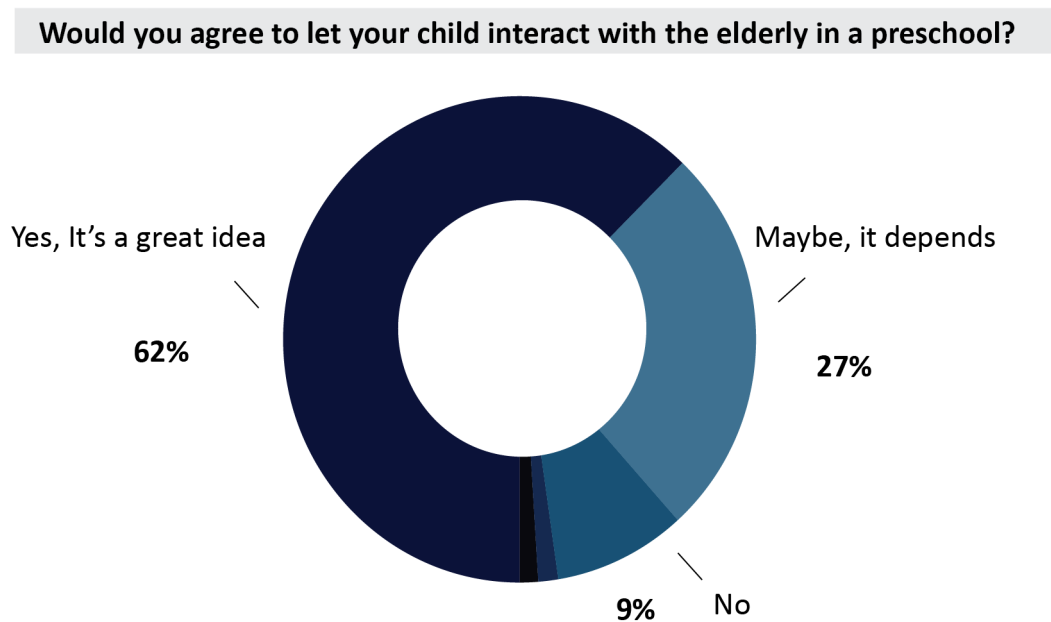Yes, It's a great idea — 62%

Maybe, it depends — 27%

9% — No

Figure 51. "Would you agree to let your child interact with the elderly in a preschool?"

Part of the Older Adults questionnaire.

The last question was an open-ended question to understand from mothers "Is the government is doing enough?" and if they have any insights for the project idea. The vast majority were suffering and they stated that they're struggling as childcare is very expensive and there should be more funding, benefits and lower prices. For example one mother said "No. Children do not receive free childcare until they turn 3. This in my opinion is a very late age for them to start interacting with new people in new environments." and another one said "No, more needs to be done before the age of 3." All their answers can be read in (Annex A).

This means that mothers are aware of the problem and the government is behind the root cause of the childcare affordability, availability, options, facilities and benefits in London. It is being validated that there is a policy failure as stated in the literature hypothesis (part 2.6.1). Most mothers suffer from too expensive costs and availability, and they can't find the quality of childcare they're looking for. Furthermore, they mostly agreed that there aren't any benefits at all before the age of 3. This is crucial as it was mentioned in the literature review (part 2.3.1) the studies that show that the benefits of Early Childhood education and care start as early as the age of two. The preschool age is when they can get prepared for school, attaining a good level of preparation, development, and social and cognitive skills. Some mothers arent working and even if they are, they have to pay their full monthly salaries in the quality childcare services. As a result, it may affect the children's learning capabilities in the future if more families can't afford childcare.

It is very important that we reach a point where we understand the causes and accept the need to put policy support directions in place. These situations should be used to study and strengthen the policy-making process and embrace the opportunity to think of innovative solutions to fix the problem. The exceptionally high cost of childcare in the capital is a major barrier to employment for mothers. Childcare costs are way higher in London than in the rest of the country, but Londoners do not get extra financial support to help cover these higher costs (See part 2.3.2 The problem with childcare in UK and London). People in London tend to work longer hours and have longer commutes than people elsewhere.3 This means that they tend to need more hours of childcare, often outside standard hours, which increases their childcare costs further.

We also asked experts a series of questions about the IV theme regarding low supply childcare, government support, and if they have any input for the research idea.

"There is a shortage of good, affordable childcare…., the government does not fund childcare at the level that would ensure the quality of settings and staff is good." (J. Ish-Horowicz, personal communication, April 25, 2022)

",,,, at an intergenerational childcare and pre-school, the children have an amazingly rich experience, learning from living history through the life stories of their grandfriends, experiencing the ageing process in a natural way. They are in an extended family set up where there are people with time to listen and to give them extra attention." (J. Ish-Horowicz, personal communication, April 25, 2022)

Older Adults

[**Theme IV**] was the final part of the older adults questionnaire also to test the older people's tolerance towards the idea and ask whether there is any support from the government and if they have any suggestions for the research idea.

The objective was to determine if they were tolerant of the idea. We asked them, "If you are moving to a new community with serviced residential apartments that accommodate your special needs. Would you welcome the idea of sharing the common spaces and facilities (e.g. playground/garden) with a Nursery/Preschool while having your own personal space?"

Almost half of the older adults (42%) said "it's a great idea," while (40%) did not mind, while (15%) agreed as long as there is privacy in their personal space.

One lady commented "*I really like the idea, I think it's a real problem for people as they get older that they can become more isolated. I also think, particularly in the Uk where we don't have a tradition of families living together generally, that older people get sidelined. I think it is really valuable for older people to interact with children, as it benefits both sides.*"

Would you welcome the idea of sharing common spaces with a preschool?

Yes, It's a great idea

42%

Maybe

40%

15%   Yes, as long as there is privacy in personal space
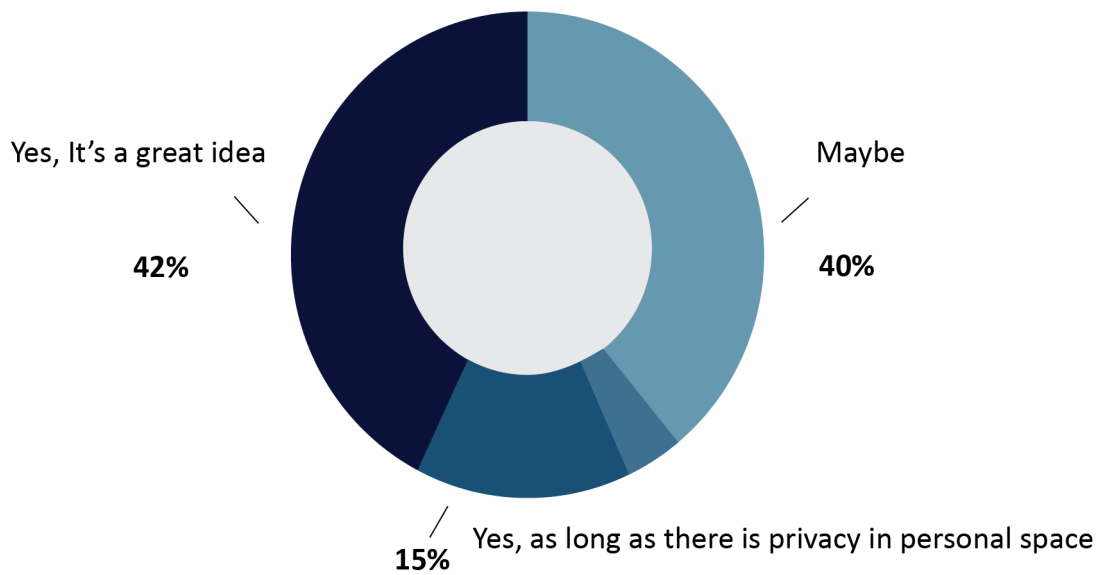
Figure 52. "Would you welcome the idea of sharing the common spaces and facilities

(e.g., playground/garden) with a Preschool while having your own personal space?"

Part of Oler adults survey.

The last question was also an open-ended question to understand from older people if the government is doing enough to support them and whether they have any insights to share for the project idea. Almost (71%) believes that the government is not doing enough. One of the comments was: "Government is not interested when you are retired and not earning."

The majority agreed to the idea to share the common spaces and the playground with children and a very small amount of people who stated that they agreed as long as they have their personal space. Having children around them, Playing, and reading with them can help retired older people feel less lonely, also interacting with children's mothers and teachers would create a vibrant activity for them to get entertained and participate in the community when they can under the supervision of the preschool entity.

We must be able to accept the need for policy support directions and understand the causes. Policymaking needs to be strengthened in light of these situations, as well as exploring innovative solutions to resolve the issue of loneliness and social interaction for the elderly. The population

is changing towards living longer and it matters because we have mentioned before (part 2.5.1 The demographics and study of ageing in the UK). It is forecast that 25% of the UK population will be over 65 years old by 2050. As a result, addressing the problem now is crucial.

6. SITE RECOMMENDATION

6.1 Population patterns

To sum up in a few words what has been discussed, in the beginning, was the idea generation of the integrated model, then came the evaluation process by analyzing the compact city principle, its consequences and the changes in the housing demand (parts 4.1.2, 4.1.3 and 4,1.3). After that, the most recent policy directions were analyzed (parts 4.3 and 4.4). Then came the opportunity evaluation, discussing how integrated urban developments could support urban growth (part 4.1.5). In brief, after spotting the opportunity in policy directions (part 4.4) for future implications of the intergenerational model, it was time to propose a site in London that would be successful when implementing the project. The following part will show the collected data that facilitated the site selection process.

To understand the possible sites where the project can be implemented. The criteria was to identify, the areas where both age groups are cumulated the most and choose the most age friendly community area that encourages inclusive communities. The identified total capacity of people 65+ in Greater London is 1,114,726 million and children (preschoolers from 2 to 5 years old) is 435,618 thousand (ONS, 2021). According to the ONS (2021) most recent data population estimates found in (Figure 53), Older adults and 2 to 5 years old children were accumulated in three major areas. Barnet borough, the highest (79,679 thousand for both) of (58,170 older adults) and (21,509 children), then comes Croydon (76,088 thousand for both) of (54,048 older adults) and (22,040 children) and then Bromley borough comes after (75,255 thousand for both) of (58,115 older adults) and (17,140 children).
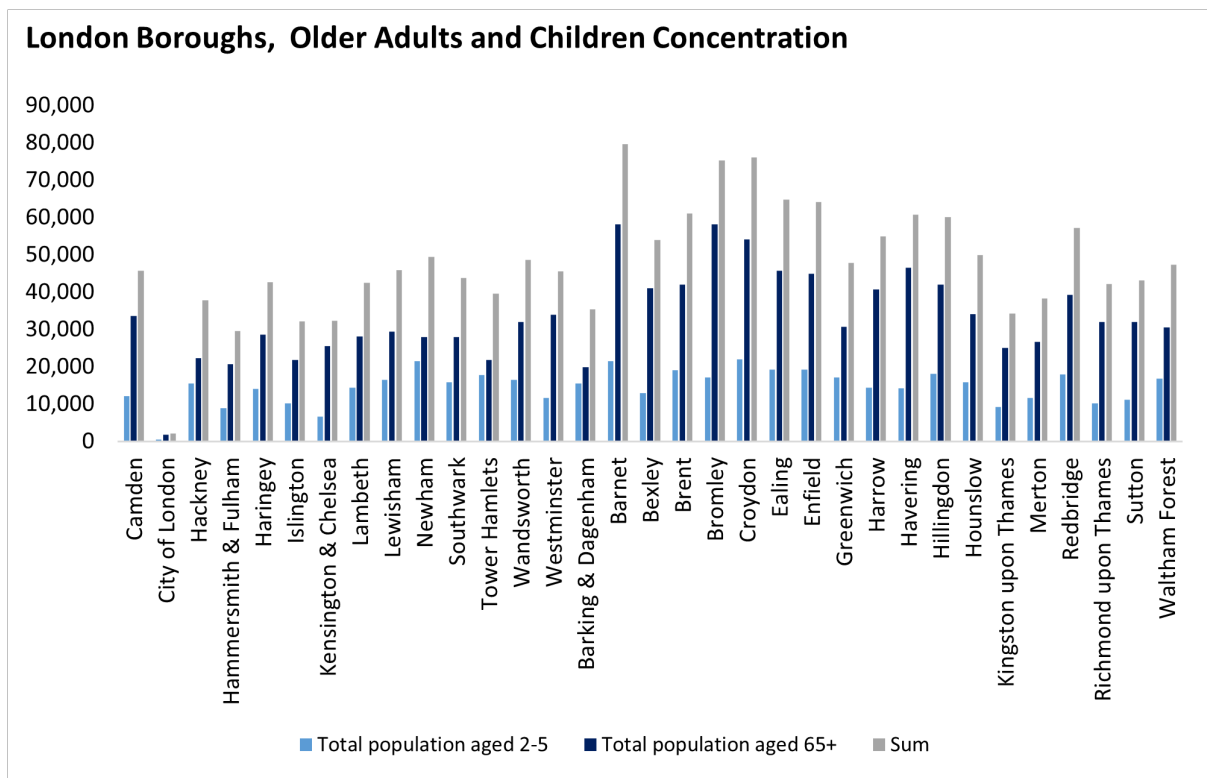
Figure 53. London Boroughs, Older Adults and Children Concentration

Source: From ONS 2021 data population estimates.

Preparing the data

The first step was studying the national census data on age demographics aggregated by borough sourced from the Office for National Statistics (2021) data population estimates. Two groups were extracted from this data source: first group is children aged 2-5 years and second group is older people aged 65+.

Geotagging the data

The second step is enriching the demographic data for the two age groups with the geographic boundaries for Greater London 22 boroughs.

Visualization

The visualization was implemented through ArcGIS web. I also used ArcGIS to merge both data sets based on borough name as a key identifier as seen in the following (Figure 54).
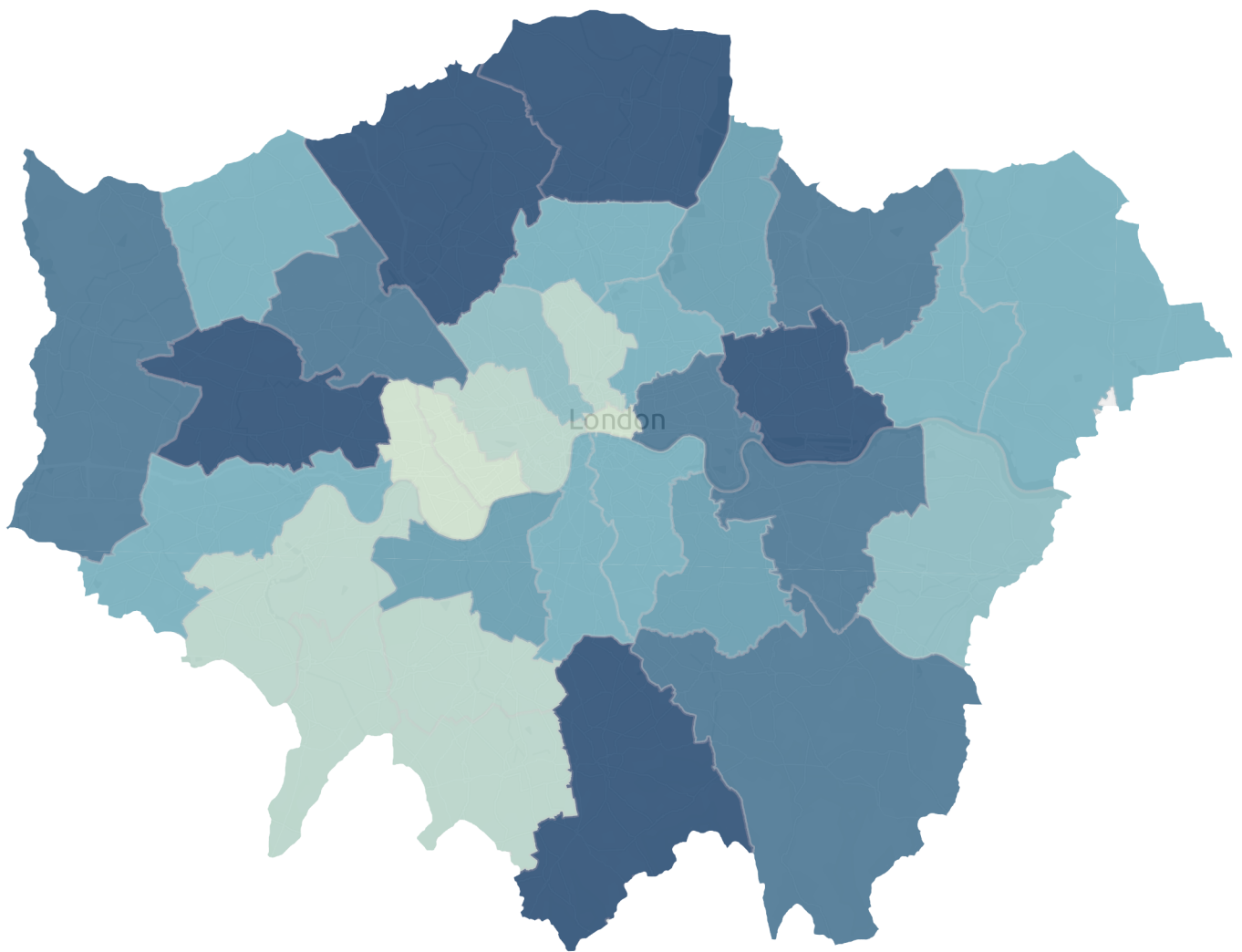
Population of Children from 2 to 5 years Old Concentration, 2021

1:328,959

Legend:
- > 19,000 To 23,000
- > 17,000 To 19,000
- > 14,000 To 17,000
- > 11,000 To 14,000
- > 9,000 To 11,000
- > 6,000 To 9,000
- > 3,000 To 6,000
- 0 To 3,000

Scale: 0 — 4.25 — 8.5
0 — 5 — 10 — 20 km
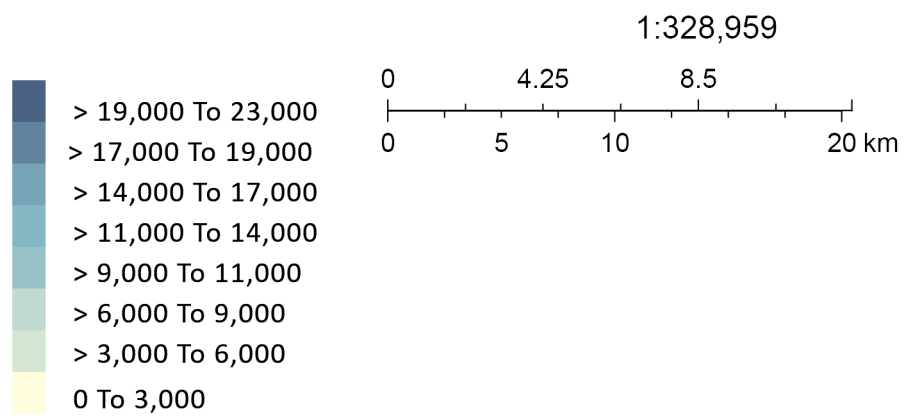
Figure 54. Ageing Patterns Children 2-5 years old – Older Adults 65+

Method: Arc GIS, Arc GIS web & Illustrator
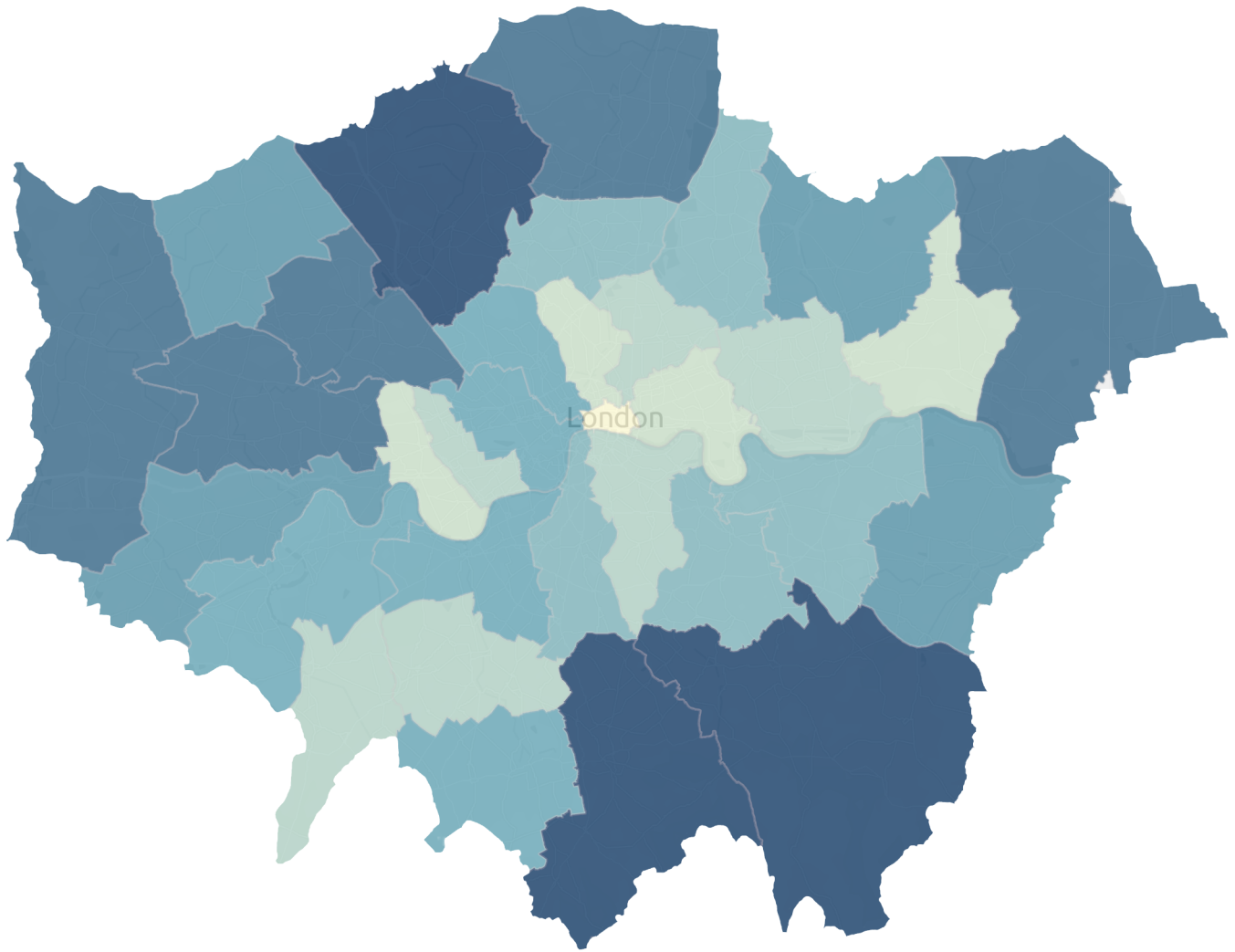
Population of Older Adults aged 65+ Concentration, 2021

1:328,959

> 47,000 To 59,000
> 42,000 To 47,000
> 34,000 To 42,000
> 31,000 To 34,000
> 28,000 To 31,000
> 22,000 To 28,000
> 2,000 To 22,000
1,000 To 2,000

0   4.25   8.5

0   5   10   20 km
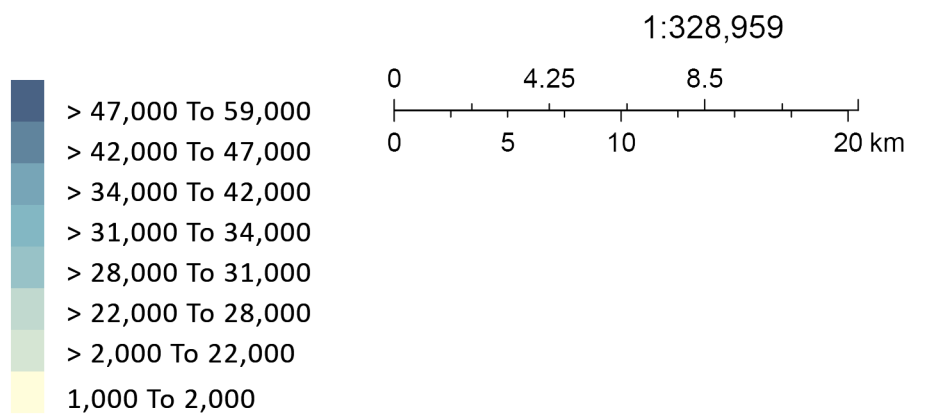
6.2 Site Investigation: Why the Borough of Barnet?

The borough of Barnet is the second largest London borough by population and the fourth largest by area. The borough was formed in 1965 from parts of the counties of Middlesex and Hertfordshire (Open Barnet, 2021). This section will analyze Barnet (the borough with the highest sum of older adults and children among other boroughs) and understand why it could be a potential site for the intergenerational model and why the mentioned two age groups are living there? Barnet is located in north London. You can reach central London King's Cross (central train station in London) in just 20 minutes, as shown in (Figure 55).
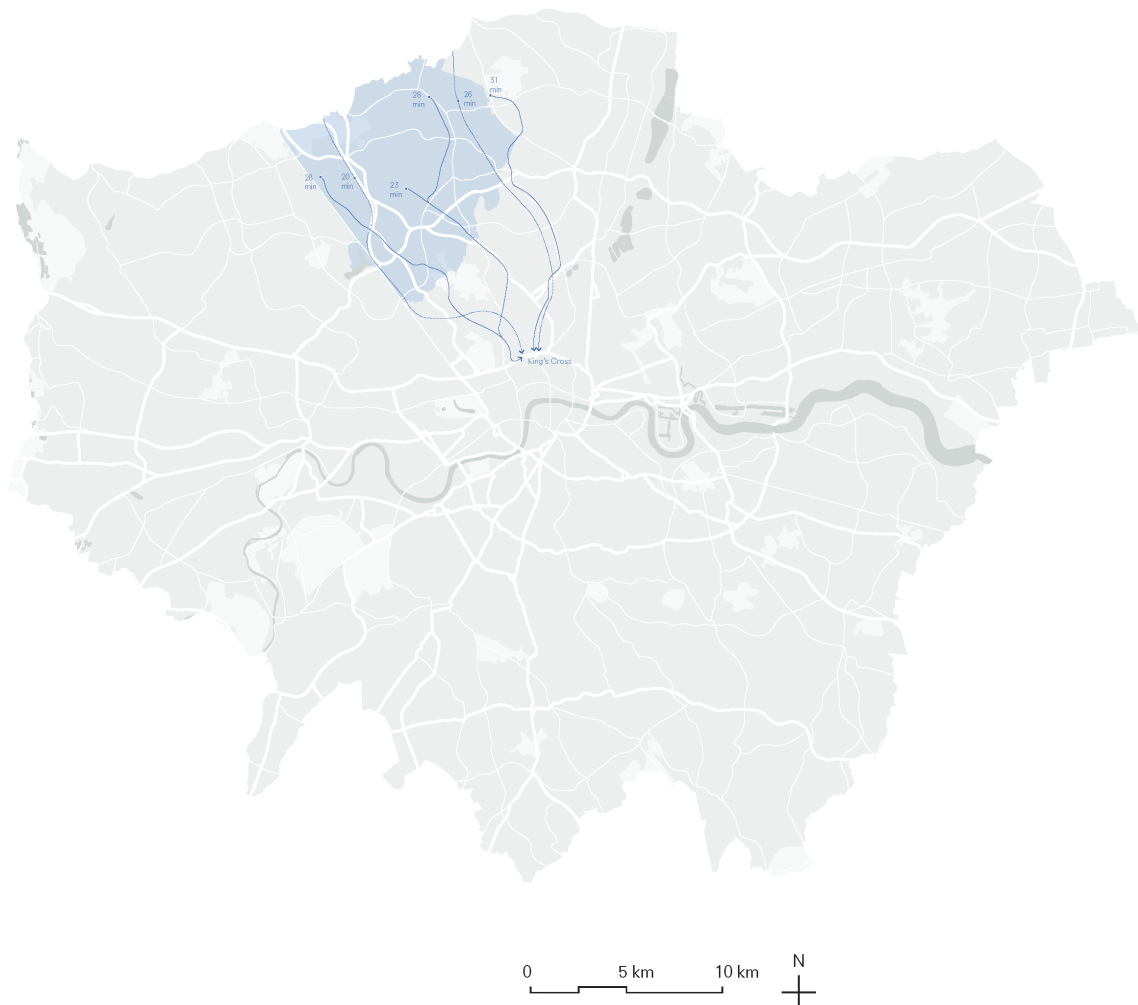
Figure 55. The Borough of Barnet in relation to Central London

Method: Illustrator

The following section of the (JSNA) Joint strategic needs assessment will provide Open Barnet (2021) information on the population, key statistics, and people living in the Borough of Barnet. According to Open Barnet (2021) the total population of Barnet is 396,709 people. By 2026, the population is estimated to grow by almost (4%) 16,000 people and by 2030, the population is estimated to grow by (6%) 24,000. (15%) of the population is 65+ (58,170 older adults) and approximately (5%) of the population is children from 2 to 5 years old (21,509 children). 30.4% of the population are white British. 47.2% are BAME (Black Asian Minority Ethnic) and 22.4% other. In Barnet, life expectancy at 65 is significantly higher than the average in England for both men and women (Open Barnet, 2021). The life expectancy of males is 82.9 years.The life expectancy of females is 86.0 years. After a period of stable fertility rates between 2010 and 2016, Barnet's fertility rate has fallen in recent years. Barnet has higher fertility rates than the rest of England and London.The Borough's population of under 0- 17-year-olds is expected to fall by 7k during the next 20 years, reflecting the changing fertility rate (Open Barnet, 2021).

Another criteria was used to asses the site was how age friendly is Barnet? The WHO (2022) Age-friendly Cities framework, outlined in the Global Age-friendly Cities Guide eight interrelated categories for identifying and addressing challenges to older people's well-being and inclusion (Figure 56). The domains of the Age-Friendly Cities Framework are connected and should intersect with each other. I examined Barnet with some drawings and site analysis from the standpoint of the age-friendly city, underlining the clear domains that are present in the city and would benefit my research.
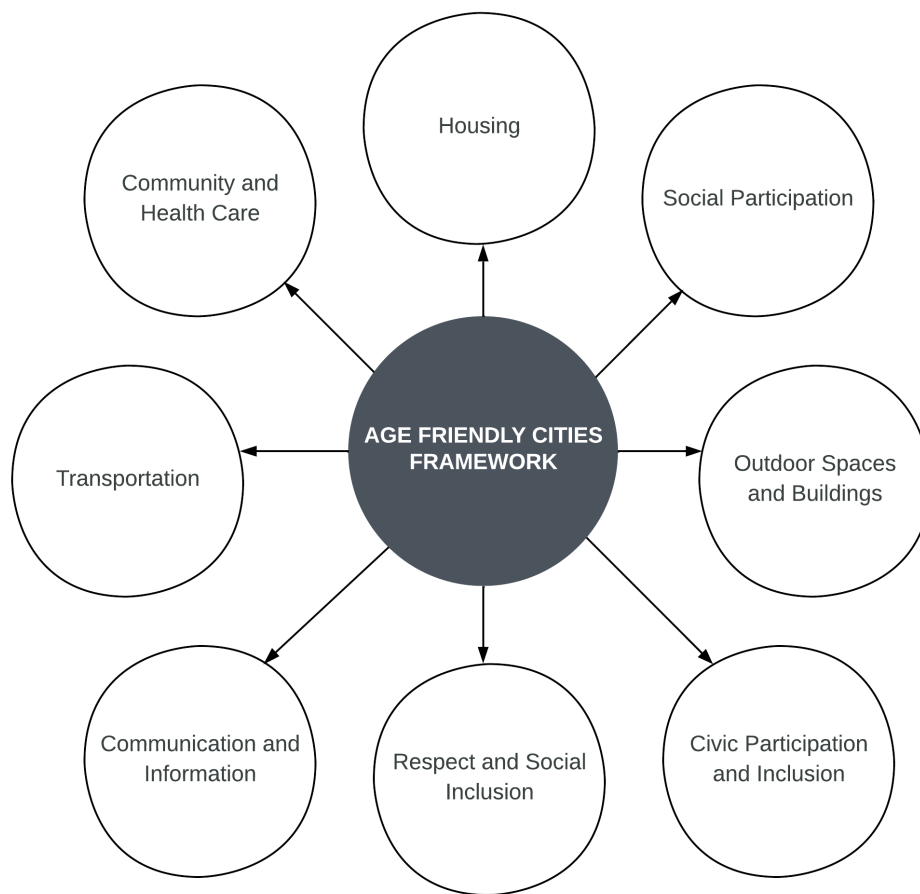
Figure 56. 8 Interconnected Domains of Urban Life

Source: WHO Age-Friendly Cities Framework

Transportation that is affordable and accessible is crucial to ensure that a city's older population has access to health and social services to age actively and remain engaged in their community. As it was mentioned before older people need public transportation that is easily accessible and affordable, so they can stay engaged with their community and have easy access to health and social services so as not to feel excluded from the community. A lack of affordable public transportation isolates older individuals who no longer drive and makes community participation harder, raising the risk of isolation and loneliness. Regardless of the mode of transportation, Barnet's transportation links are accessible and very well connected. The Northern line connects the region to central London through the High Barnet underground station, with King's Cross (train station in central London) just 20 minutes away (Figure 55). As well as

reliable bus network, Barnet is served by (TFL) Transport for London, which offers accessible and well-connected routes to destinations across the capital, as shown in (Figure 57). 62% of Barnet residents live within 1200 meters (approx. 15 minutes) of a rail or underground station, and there are 97% of bus stops within a five-minute walk of every Barnet resident, and 91% of those stops are accessible (Steer, 2020). The M25 (a major road encircling most of Greater London) is about 5 minutes away for those who prefer vehicles. Every resident of Barnet lives within a 20-minute cycle of a train or underground station (Steer, 2020).
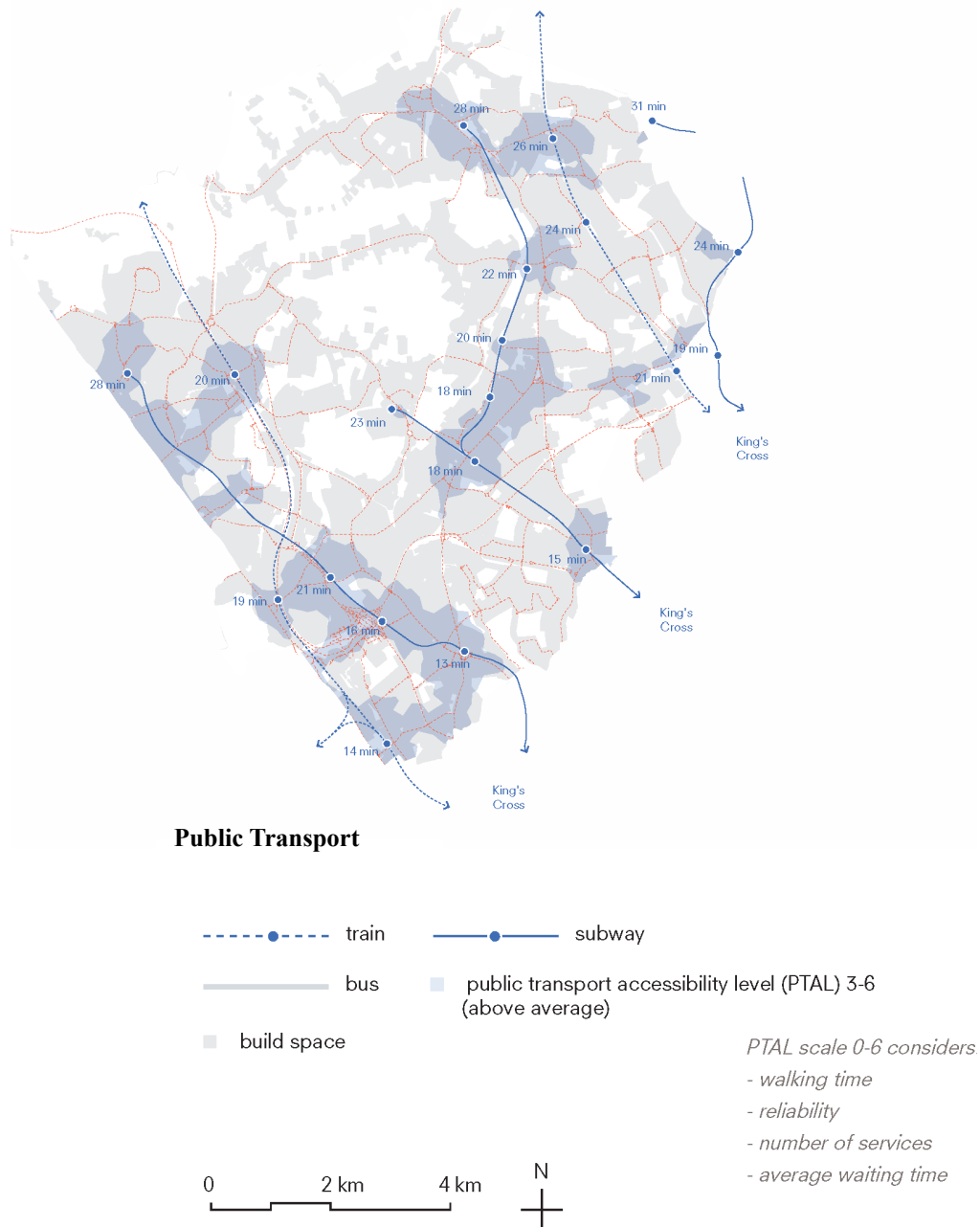
Public Transport

Figure 57. Public transport analysis, Barnet

Source: OpenStreetMap, Public Transport. Access Levels (PTALs)

Method used: Illustrator

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Outdoor spaces and buildings, along with the external environment, have a significant impact on older adults mobility, independence, and quality of life as they go about their everyday lives outside of their homes. A clean city with well-maintained recreational spaces, plenty of rest areas, well-developed and safe pedestrian and building infrastructure, and a secure atmosphere makes an ideal living environment for older adults to age in place (WHO, 2022). 28% of the borough is green with over 200 parks and green spaces   (Barnet gov, 2021) As a green and family-friendly borough, Barnet has a lot of parks and open spaces, as shown in (Figure 58) concerning residential areas and their proximity. Barnet has formal parks and gardens, wild landscapes, and extensive greenbelt areas and leafy river valleys. Trees and nature reserves make an essential contribution to the character and appearance of Barnet.. Thanks to the green belt, there are numerous other green spaces and walking trails nearby, including Hadley Greenm Pymmes Brook Trail and Dollis Valley Greenwalk. Barnet's green infrastructure contributes significantly to the local character of Barnet, particularly to biodiversity, tranquility, and sense of space. Furthermore, they add value to the setting of buildings and provide amenities for residents. Parks in Barnet are inclusive areas where people can participate in organized sports, visit a park café, take their children to the playground, or walk their dog.

One of the critical factors contributing to ageing in place is **a secure and safe environment.** A community cannot be cohesive and united if its inhabitants do not feel safe. This, in turn, discourages older people from living independently and impacts social integration between generations (WHO, 2022). According to the Joint Strategic Needs Assessment, Barnet is one of the safest boroughs in the capital, with crime rates overall declining in recent years. The Barnet Safer Communities Partnership works with the Metropolitan Police, Barnet Council, and the London Fire Brigade to reduce crime and anti-social behavior in the area (Barnet Gov, 2021). Furthermore, it was indicated in the young people's perception survey that 95% feel safe traveling to school, 95% feel safe during the day and 56% feel safe outside at night (Barnet Borough, 2019).

-
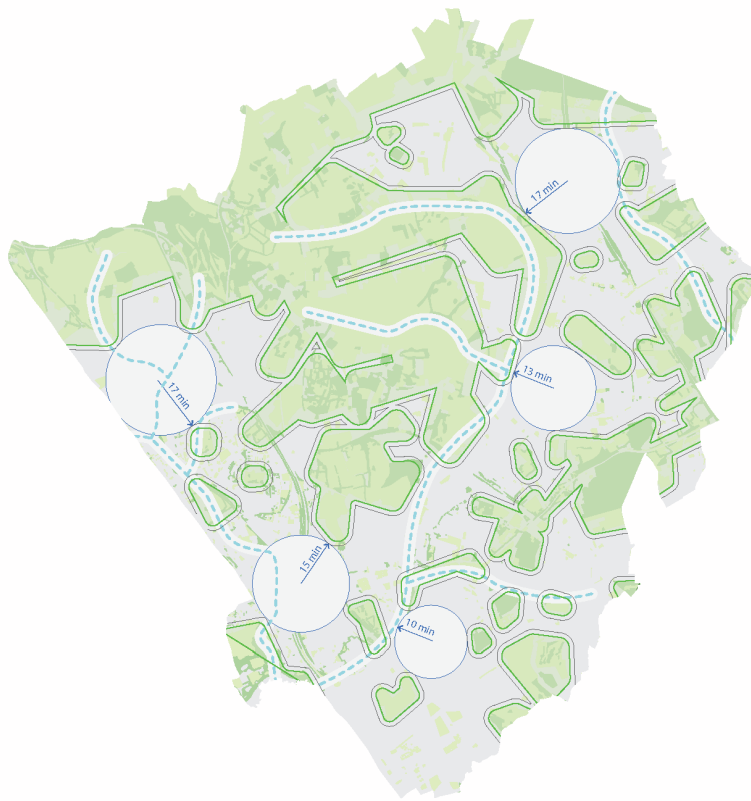
Proximity of Green Space

- - - - - - - - - -   blue structure   ☐ green structure   ☐ residential area

0   2 km   4 km   N
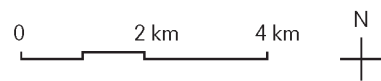
Figure 58. The proximity of Green Spaces in relation to Residential Areas

Source: OpenStreetMap

Method used: Illustrator

One of the outstanding aspects of Barnet is, its wide choice of **Community amenities and facilities** analyzed in (Figure 59). Older adults who participate in leisure, social, cultural, and spiritual activities in the community stay active and engaged within society (WHO, 2022). There is a market twice a week that sells fresh vegetables, meat, cakes, fish, and bread and a Teenage Market that encourages young people to become entrepreneurs. The markets give Barnet a small-town feel that older adults love and it also encourages participation and inter-generational integration with young people. Participation in social activities by older adults helps to reduce social isolation. Older adults like to interact with people of different ages and cultures in their communities (WHO, 2022). Barnet is perfect for shoppers thanks to the recently redeveloped Spires Shopping Centre, which features high street brands and some independent retailers. Golfers are well cared for, with three golf courses in the neighborhood. Old Fold Manor, Dyrham Park Country Club, and The Shire are all nearby, offering beautiful vistas of the Hertfordshire countryside. For the children, New Barnet Leisure Centre provides more than 80 exercise sessions every week and a pool and outdoor tennis courts. At the same time, Old Courthouse Recreation Ground features gardens, a children's play area, and a café. The outdoor spaces in Barnet are adequate for children as Barnet has outdoor sports facilities, outdoor gyms, skate parks, and many playgrounds around community neighborhoods. This map show the scale and location of the smaller communities that Barnet consists of. Moreover it shows the important amenities that bear these communities (Figure 59).

The Spires

New Barnet Leisure Centre
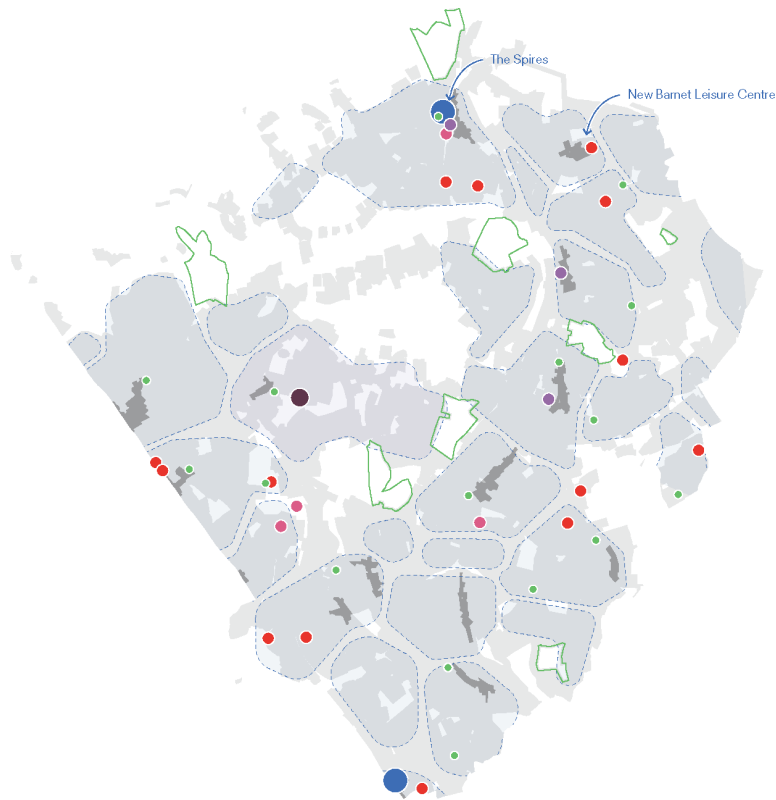
Community Amenities

- ● theater
- ● museum
- ● community centre
- ● market
- ● library
- ● makerspace
- ▢ golf course

- ⌐⌐ neighbourood community
- ■ town center

0   2 km   4 km

N
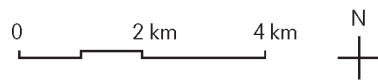
Figure 59. Community amenities and entertainment

Source: Barnet Draft Local Plan 2021, Google Maps, https://www.london.gov.uk/in-myarea

Method: Illustrator

In total, 21,509 children under the age of five live in Barnet. The map in (Figure 60) shows the total number of **nurseries and preschools** identified. According to Day Nurseries (2022), there are 89 in total mapped (66 day nurseries, 23 nursery schools) to identify the opportunity areas for the future that are in need for nurseries/preschools inclined towards the north central area. There is an eligibility criterion for the Free Early Education for two year old pupils from low-income households. Looking into the benefits o childcare in Barnet, aarly education for two-year-old is free for 38 weeks out of the year, but before year two there isn't any funding (Barnet Family Services, 2019). According to Barnet Children and Young People's Plan (2019), thw borough of Barnet was forecasted to have the largest number of children of any London borough in 2020. From 2018 to 2025, Barnet's population of children and young people is expected to grow by 3%.
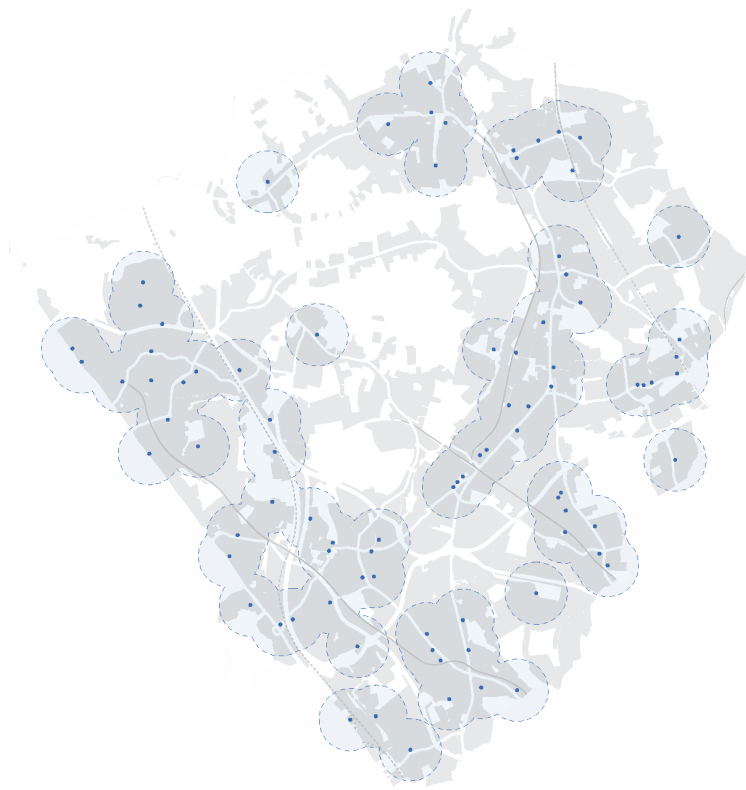
Nurseries and Preschools

nurseries, 1 km proximity

source: daynurseries.co.uk
66 day nurseries, 23 nursery schools

0   2 km   4 km   N
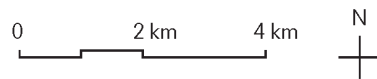
Figure 60. Nurseries and Preschools at 1 km proximity in the borough of Barnet

Source: daynurseries.co.uk

Method: Azimap, Illustrator

Adapting to a changing population in the future while still achieving **optimal densities** is a critical factor of sustainable development. Six major housing typologies were identified in the Characterisation Study in Barnet. In the context of (Table 7), it defines the major elements of these six typologies, such as density, building type, and height. They are considering the policy themes and objectives of the governance. According to Barnet's local plan (2021), low-rise development and dwellings are typically the best architectural solutions for reaching adequate densities in Barnet. Achieving appropriate density is one of the policy directions in the borough of Barnet. The local plan urges for low-rise dwellings and, at the same time, highlights the need for different types and approaches to present different types of affordable housing, which we find inlined with our research proposal. The (Figure 61) compares the urban density from London city center to the borough of Barnet with an area in between. It shows the relationship between public space and private spaces (dwellings) level compared from Barnet to central London.

Chipping Barnet   Belsize Park   SoHo   □ 500 m x 500 m square

Density
■ Build
■ Un-build
□ Public Space

0   250 m   500 m   N
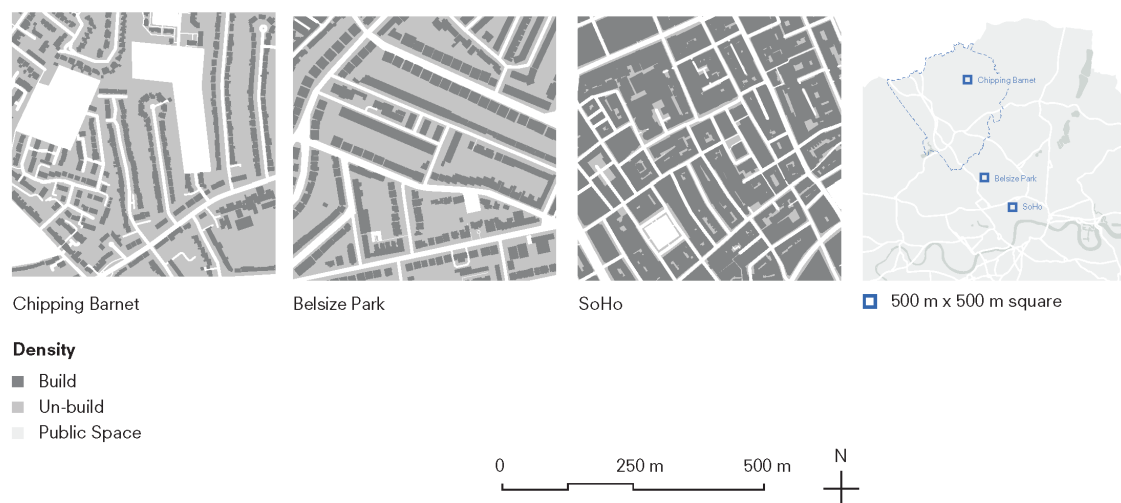
Figure 61. Urban density borough of Barnet and Central London comparison

Method: Illustrator
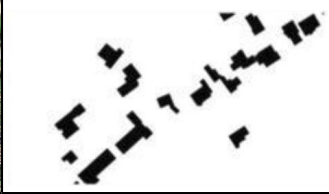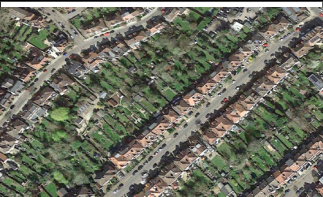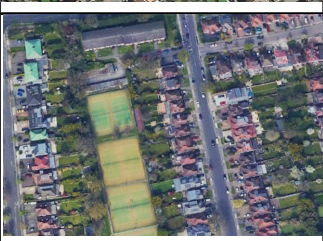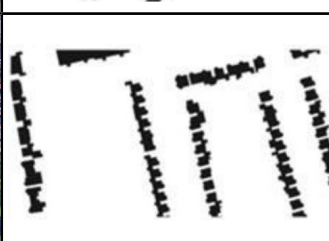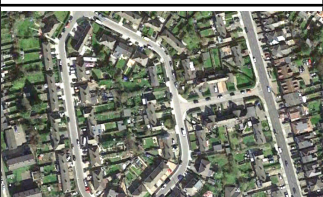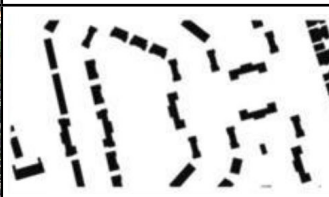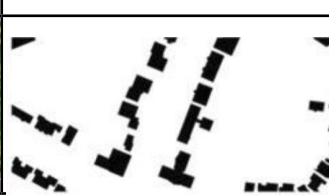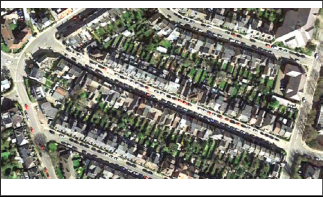
	Density (Dwellings per hectare)	Density (Dwellings per hectare)	Density	Building Types	Heights Storeys
Linear Rural			2-10 per hectare	Detached Houses	1-3
Suburban Periphery			10-15 per hectare	Detached Houses	2-3
Suburban			20-30 per hectare	Semi-detached houses	2-3
Suburban Terrace			20-30 per hectare	Terraced Houses	2-3
Urban Terrace			37-50 per hectare	Terraced Houses	2-3
Flats			80-150 per hectare	Street Facing Flats	3-6

Table 7. Primary Typologies and Density (Dwellings per hectare), Barnet

Barnet is recommended as a site for the intergenerational model not only because it's a high population area of older adults + children but because it falls into the category of an age-friendly city and other factors. Barnet is quickly becoming a highly sought-after region due to its placement between the bustle of metropolitan London and the countryside of Hertfordshire. Barnet has outstanding amenities, excellent schools, interconnected transportation and a walking-friendly city-making it ideal for families and older people who want to live in a green town but aren't ready to leave Greater London. According to CBRE (2019) study, Barnet is the third most family-friendly borough. Barnet is the location of several big new developments with dwellings geared for families due to its significant share of formerly developed land (White, 2019).

7. CONCLUSION

7.1 Provisional sketch for the intergenerational model

Preschool

Older Adults Residential Apartments
With a View On The Garden

Glazed Corridors For views

Outdoor Cafe'
Seating

Children's
Playground

Groundfloor
Communal
Spaces

Cooking School

Seats For
People to Rest

Informal   Planting
Activities Play

Elderly Gym Equipment

Trees Provide Shading
For Seated Areas

Cycle Parking
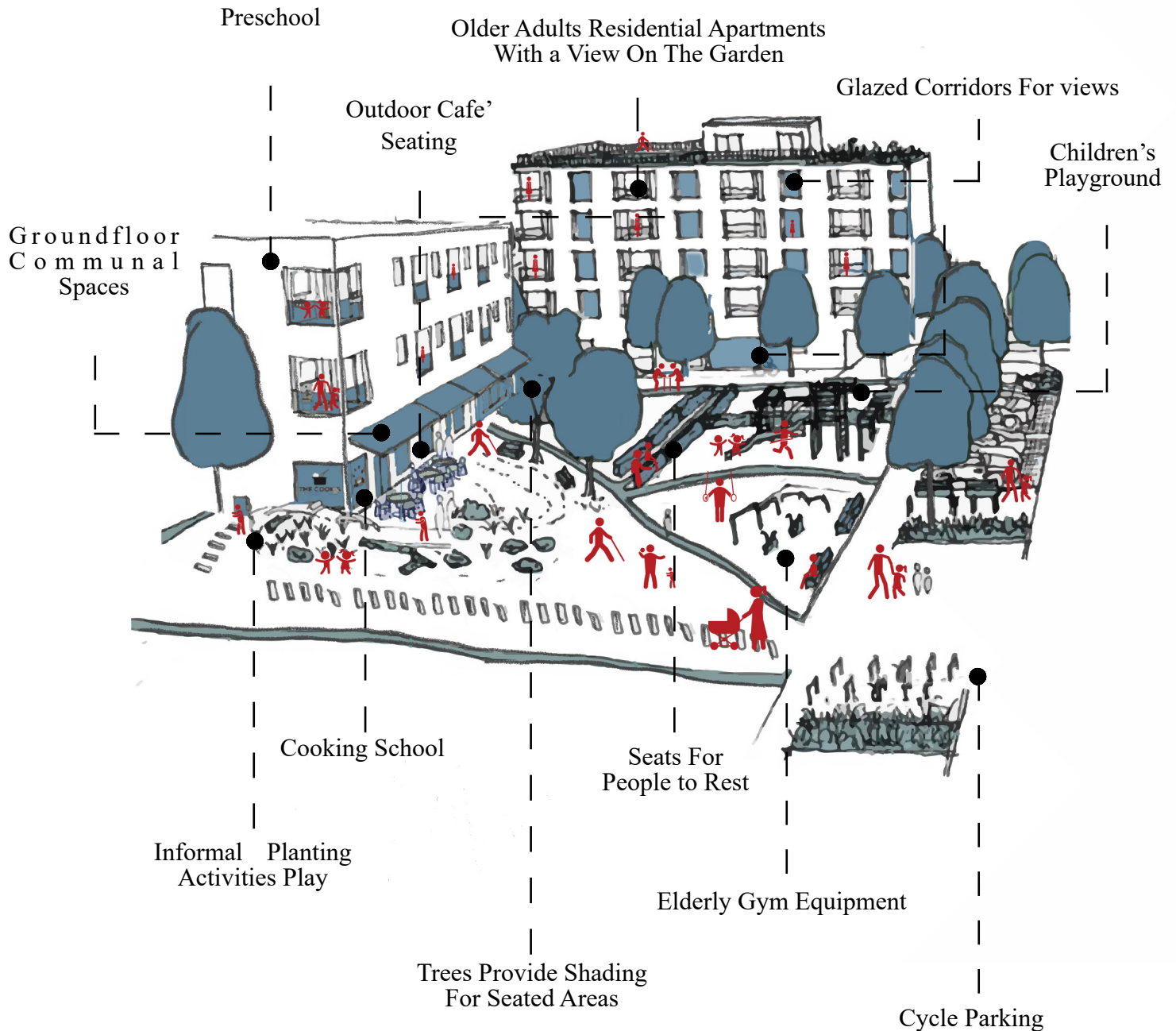
Figure 62. Conceptual Sketch for the intergenerational model showing the preschool, elderly residential apartments and the

vibrant garden with a playground

Method: Digital sketching, Illustrator

7.2 Summary of obtained results

In summary, literature review and field work revealed that Intergenerational living between children 2-5 years old and older people aged 65+ can enhance social interaction and cognitive performance. At the same time, planning integrated communities can help two of the most common issues older people now face 'loneliness and social isolation.' With the fast ageing population in the UK, space efficient households in an integrated community can help in fixing the housing demand problem for the coming years. Similarly, having more supply of childcare and early year services can fix the problem of availability and affordability. Other positive outcomes which have been found that the intergenerational model can improve children's academic performance, knowledge, and language development. It may influence positive behavior, as well as having less anxiety, advanced communication skills in the future and a conscious positive level towards the perception of ageing. Furthermore, the intergenerational program among older adults can boost their mental health, delay mental decline and even reduce the risk of diseases and death. The findings of this study set the groundwork for new perspectives on planning and policy, towards directions to inclusive mixed use land policies that can help the compact city's land density urban development and at the same time impact its users.

The study's key findings

Social level: The majority of children are sociable and have no problems with companionship until they get socially isolated. This happened during the lockdown (COVID-19 Pandemic) that the lockdown (lack of social contacts and people to interact with) had affected children's social and communication skills as well as their academic performance. Here it is very important to highlight the assessment in the literature hypothesis which supports the idea that affordability and availability of ECEC is crucial for children which will directly affect their participation so as not to spend more time isolated at home. Children Being socially isolated will negatively affect their social, academic and development skills. It is crucial to ensure the availability and affordability of childcare facilities in the UK to avoid children spending more time at home and avoid any segregation in the development level between children with unprivileged backgrounds when entering school.

For older adults, the majority of them live alone in single households, lack companionship and many feel left out and isolated. It has been argued by scholars that social isolation and loneliness are linked to various physical and mental illnesses. A sense of social connection is crucial in preventing psychological distress as social interaction is among the most effective ways to prevent depression among older adults. In addition, reducing loneliness at earlier stages can save the government more than half of its future health care costs.

Policy Level: The majority of mothers are suffering from childcare and early years services high costs in London. They want more government support, funding, benefits, or lower prices. In order to prevent childcare costs from being a barrier to working, the government needs to support and implement innovative strategies to solve the problem of affordability and availability while not compromising the quality of early years services.

For older adults, the majority of them believe that the government isn't providing enough support for those who are aged 65+. It is crucial to explore innovative solutions to resolve the issue of loneliness and social isolation for older people as it has been discussed that the elderly will become more than a quarter (25%) of the UK's population in the coming years. New Policy directions must propose a regulatory framework with innovative solutions to help alleviate the loneliness and social isolation of the elderly to overcome future implications in health care costs.

Spatial and social dimension: The majority of mothers believe that ECEC is important because of social skills more than academic skills, as ECEC should be able to prepare the children for the real world. The most important spatial aspect in childcare and early years services according to mothers, is having a vibrant interactive outdoor space for children with a variety of activities.

For older adults, the majority's spatial needs is to have an open interactive green space in the residence to meet each other, an apartment with a view and they want it in the heart of the city. For them, home is a psychological need or a feeling, a place where they do the things they love and feel comfortable. Most of them in their free time, aspire to have a walk to get exposed to

nature or conquer boredom, while the majority's main issue is the need for self-worth (the urge of doing something) and a constant feeling of despair. A large amount of older people babysit their grandchildren in their free time.

Can the needs of two aged groups be combined in one space? If we link the needs of both age groups in one space, an integrated vibrant community in a green space combined with a playground with various activities for the young and old can be achieved where both groups benefit from each other. Most of the older people like to go for a walk and get exposed to nature in their free time or babysit their grandchildren. Older adults can conquer boredom and have something new to talk about that would bring a smile to their faces among each other when children are around. They can also share historical stories and read or play with children if they want to fulfill their need for self-value. Not all children have extended families living in London, so interacting with older adults occasionally or on a planned level can help children socialize with different generations, a different kind of experience that will enhance their social skills and cognitive development. This is an essential need in ECEC selection criteria for mothers nowadays.

Intergeneration Tolerance: The vast majority of children feel happier and like to bond with their grandparents. Grandparents also feel happier and have a strong relationship with their grandchildren. Most of the mothers believe it's a great idea and wouldn't mind putting their children in the intergenerational program. Similarly, most of older adults think it's a great idea. Only a small portion didn't mind as long as they have their own private space.

Planning Level: To achieve optimal results in a dense area like the compact city of London, it is vital to make the best use of land, spot the opportunity from a socio-spatial perspective, and propose innovative solutions that encourage land use integration with an impact on its users.

Urban Sociology Level: It is vital to evaluate and comprehend implications after implementing intergenerational living projects and how they will impact individuals and society to be able to facilitate integrated land-use projects in planning policies.

Strategic level: It is crucial to understand the demographic change and the need for a strategic plan to be able to fit all the older people in the future without wasting land space for non-efficient single or stand-alone households.

It is crucial to ensure availability, affordability and good quality childcare facilities and understand the value of ECEC on children and on parents that will directly influence the city's economic growth on a broader scale.

7.3 Cities that work

Building inclusive, healthy, resilient, and sustainable cities requires intensive policy coordination and investment choices to enable future development and opportunities for all (World Bank, 2022). Professor Edward Glaeser, Professor of Economics at Harvard University and the Director for the Cities Research Programme at the International Growth Centre, discussed the future of developing cities depending on five lessons for urban policy "Infrastructure – Housing - Urban Land - Employment and Education - City finances." (Glaeser, 2017). The following (Figure 63) shows how this research can help the city's future development by highlighting three aspects. A) Housing: Boosting the supply for retirement communities to keep up with the demographic changes and housing challenges for the future. B) Urban Land: Promoting regulations that require better land use and strategic density while accommodating assessed needs for users to develop inclusive growth. C) Education: Increasing the supply and quality of early childhood education and care to foster economic growth and development.

CITIES THAT WORK

INFRASTRUCTURE   HOUSING   URBAN LAND   EMPLOYMENT & EDUCATION   CITY FINANCES

Study implications

SOLVE HOUSING CRISIS   BETTER LAND USE REGULATIONS   (FUTURE) POWERFUL CHILDREN

AGE FRIENDLY COMMUNITIES
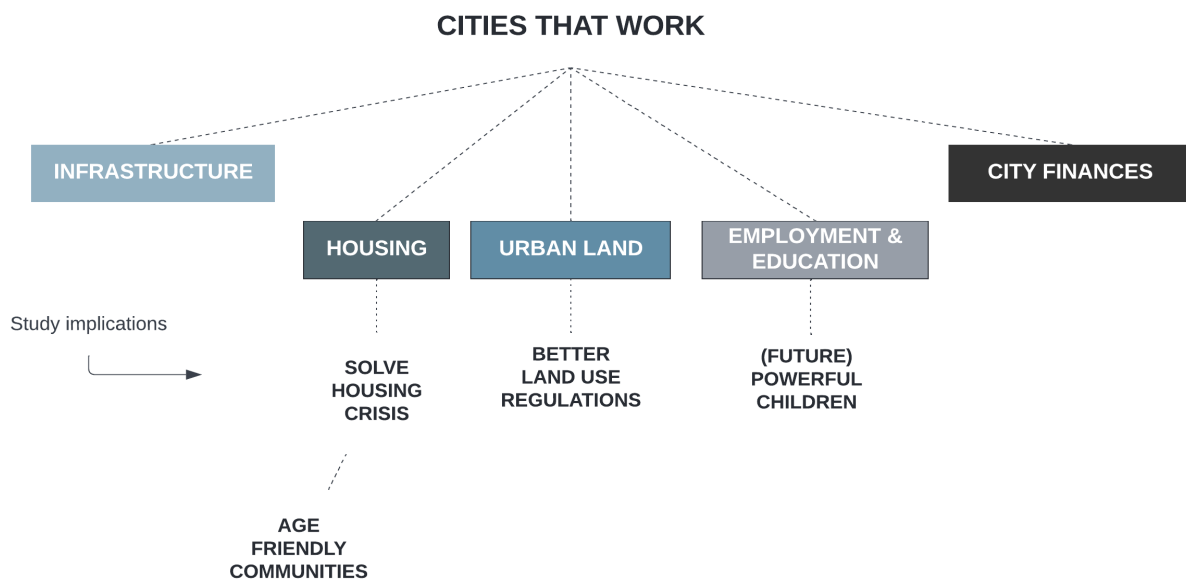
Figure 63. 'Cities that work' analysis with the study implications

Source: Professor Edward Glaeser, Professor of Economics at Harvard University

In the next part, I will focus more on inevitable urban policy recommendations for national and local governments to follow for the future of their development. London's growth and development is shaped by the daily decisions made by planners, decision-makers and Londoners across the city (GLA, 2021).

7.4 URBAN POLICY RECOMMENDATIONS

It is recommended to develop a regulatory framework for all boroughs of London that serves as a blueprint for the city's future development. Two sets of recommendations are created as a result of the literature review (chapter 2), fieldwork analysis (chapter 5), and the urban policy inputs of Greater London (chapter 4). The first set of recommendations is directed to "Better use of space" and the second is dedicated to "Better strategic planning for urban communities." Dedicated to one end goal supporting and planning an urban policy toward "The intergenerational program."

7.4.1 Better use of space to better implications for urban developed cities

Intergenerational Living

Prevent social isolation and loneliness (Older Adults) enhance social interaction (Children)

Provide conveniently a certain percentage of new urban developments to intergenerational living projects for the best land use, integrating older adults' residential apartments with preschools in a mixed land community. This should enable intergenerational environments that can enhance academic performance and social skills for children, prevent social isolation and loneliness for older adults and improve social interaction and cognitive performance of both.

Land use efficiency, the need for mixed use land use vs overcrowding

Prevent overcrowding in compact cities

Support and promote mixed-use land policies that can impact its users while dealing with such a level of city growth. Plan for spaces, services and amenities in the intergenerational community that provides opportunities to be shared by different age groups for better use of space and

entertainment purposes. To maximize socialization, examples could include but are not limited to communal lounges, entertainment spaces, shared activities spaces, a common room for special events, and a shared kitchen for cooking classes. Layout, design and circulation should be arranged for mutual use to accommodate children and older adults.

Mutual inclusive garden/playground

Avoiding disassociation from the surrounding and natural environment

Applying a space-efficient usage approach for the best use of natural resources. Providing a safe environment for children and older adults. Planning a mutual garden for older adults to promote a sense of community and integrate equipment to encourage senior exercise and being active while providing a playground in specific spaces in the garden for children. The area should be inclusive where everyone can use it confidently, independently, and with dignity, without segregation or separation. Ensure children spaces enable them to move freely and independently between indoor and outdoor spaces. Having a vibrant playground can create an inclusive community that supports intergenerational connections.

Towards space-efficient households in an integrated community

Reduce waste of space in residential apartments where older adults use only a small portion of the space.

Ensure the residential apartments are designed adequately to fit retired older adults who can live independently. Take appropriate measures to have a space that accommodates their needs to continue living independently. Ensure good quality experiences for all older adults by creating a balance between indoors, outdoors, and communal private areas only for them. This should enable privacy and a sense of community setting to continue providing high-quality spaces and experiences for all.

Non-structured physical barriers

Apply a design-led approach to determine the optimum social interaction between two age groups.

Open circulation regulations with safety factors considerations should be the best practice for better implications of the intergenerational model to encourage social interaction between the two age groups. When planning the space, maximize the flexibility of the use of space without structured physical barriers. Encourage the provision of inherently flexible features that can be removed or adjusted depending on intergeneration activities and space usability. Achieve a nonformal setting; examples include but are not limited to open classrooms, allowing older people to join or leave the activity anytime they desire. This should allow older people to join or leave anytime and children move freely without barriers.

7.4.2 Best strategic planning for urban communities

Need for connected services and amenities in the neighborhood.

Fighting disconnected communities (older adults)

To create a well-connected sustainable community those involved in planning and development must urge the location of the intergenerational model to be well connected to (public services - transportation – leisure activities – medical services). Among the proposed urban services are: post office services, shopping facilities, pharmacies restaurants and cafés, to avoid social exclusion for older adults. Close by amenities such as parks, sports and entertainment facilities, and a public library to be able to lower the risks of social isolation. The existence of public transportation close by can encourage older people to go out.

 A number of social relationships can be fostered outside the elderly housing community or the building if a functional system (services and transport) in the urban environment is accessible. The neighborhood characteristics and adaptations that the local government can support can make it easier for older people to get around their neighborhood and to be more independent in their daily errands and social interactions.

Expanding childcare and early years services across London

Tackling undersupply to solve early years childcare affordability and availability (Children).

Ensure all boroughs have enough supply of childcare for working parents to overcome children getting socially isolated and Inequity: Children from disadvantaged families are being left behind, often in poorer quality childcare or receiving no early education at all. Increased supply of early years childcare within the intergenerational model should be prioritized to improve availability and affordability and enhance service quality across London. Greater London Authority should plan the wider provision of childcare facilities with the aim of helping working parents mitigate the short-run risk of social isolation of their children and long-run risk of social segregation. Increased provision should stimulate competition within the London childcare facilities market, which would lead to better quality, lower prices and, ultimately, improved welfare of working families with children. Children will also benefit, both in the short and long term, from better quality care provision, leading to improved cognitive, behavioral and social skills.

7.5 Limitations of the study

This research is an attempt to establish 'intergenerational living' as a viable forward-looking solution for the upcoming tremendous socio-demographic changes in the United Kingdom. The aim of the study was to integrate urban sociology with urban policy and propose a solution that would socially impact human interactions and develop a transformation for the city's development and growth. The study shows that we have a chance to solve problems effectively and the consequences that inhabitants face if we focus on the right planning strategies.

First, the theoretical framework introduced and described the research problem, its consequences and its impact on an individual level and society. Second, case studies were presented for empirical evidence of what was discussed in theory. Then a proposed solution for the provisional idea and how it will impact the users. Later, studying and analyzing the city's current and provisional urban policy regulations and spotting the opportunity for future provision. It was essential to evaluate the theoretical framework by examining the provisional idea among the primary users of the space with surveys and assessing the idea through experts' interviews. The study was not limited to the theoretical framework, provisional concepts, fieldwork analysis and policy recommendations. It also proposed a site recommendation that analyzed the site profoundly to have something tangible to begin with when implementing and planning the project.

This study has been constructed to make it as reliable and valid as possible, yet there are limits to generalizing the findings. The population and setting of this study are unique. First, any conclusions are limited by the characteristics of the selected sample. This study focused on preschoolers only from 2 to 5 years and 65+older adults that are retired and in good health without physical disabilities. Second, the setting of this study is constrained to Greater London and it's unique urban policy regulations. The theoretical concepts and conceptual provisions in this thesis contribute to a new planning paradigm, yet one of the serious limitations is fully understanding the operational and financial issue for planning, building, investing, and supporting intergenerational communities. Most of the case studies were intergenerational programs only limited to the concept of children visiting older adults in care homes not having a structured integrated community living or a constant common space they share. That's why the

newly proposed provision needs practical investigation and a deeper understanding of urban planning development and its impact on people. It is beyond the scope of the study the scale of the building as the study is Strictly focusing on the role of urban planning and policy approaches.

7.6 Suggestions for further research in the field

These studies may require interdisciplinary knowledge and collaboration with specialists from fields with similar interests, such as psychology, sociology, environmental psychology, interior design and architecture. Additional studies could examine intergenerational programs from different perspectives and focus on further inputs of the proposed intergenerational provision.

Additional studies could examine different spaces, facilities, geography, cultures, countries, and age groups. Other age group samples could be studied to implement the intergenerational program in different age group models, not limiting it to a specific age.

Studying the operational and financial matters when planning this model may be worthwhile and how the government can financially support intergenerational communities in planning policies could benefit the project's implementation.

This study is an example of integrating urban sociology with urban policy and recommending a strategy to transform the city's development and growth that impacts human social interactions and inclusion. This research may not solve all health problems of an older population. Still, it can decrease two of the most common issues for older people: loneliness and social isolation, which can severely affect their mental and physical health. As for children, I believe that the modern world now requires excellent social skills and should be developed in the early years. Social skills give kids a wide range of benefits and success in school, social networking in their future and better relationship with their peers.

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ANNEX A

Answers from the open-ended question **"Is the government is doing enough?"**
Part of Mothers Questionnaire

Comments	Comments and Remarks
No, I think the government cuts on childcare funding have ruined the system and weakened small childcare businesses and childminders. Only big nurseries with more established chains of business survived. They compromise on the quality of childcare and maximize the ratio of their staff to a number of children to make more money but this isn't beneficial for the children. The government needs to invest more in early years childcare provision which was hit badly during COVID.	"No. More support is needed especially for parents who are studying. Nurseries' fees are ridiculously expensive in London and most of the students don't work or work only 20 hours per week (the maximum allowed number of hours)."
"Not really, childcare is quite expensive, costing 500-1000 a month, that's almost the cost of private schooling for secondary education! Spaces are very limited with up to a two-year waiting list, we'll into school age. Facilities are not inspected frequently enough."	"I think there are enough childcare facilities however there isn't enough variety, so parents have limited choice as to what is best for their child. For example, places where children interact across age groups, forest schools, multilingual facilities, etc... are very few and far between and the ones that exist have long waiting lists or are very expensive."
No, as **a lot of childcare facilities have closed.**	"No. **Nurseries, where we live, are being closed continuously. Staff are not Paid enough and often have little or no training**. I worry they are unsafe."
"I think there is more the government can do. Childcare is really expensive that if a mum chooses to work full time, in most cases all her salary goes towards childcare costs."	"No! It's a disgrace how much working parents are penalized for working. Before the childcare grant comes into play at age 3 years, the average childcare bill for us as a family was over £1k. Also, reducing staffing ratios in childcare settings is a disgrace. Post covid out childcare setting reduced their working hours - but still charged the same money! So many hurdles for working parents!"
"They should do more to ease the accessibility for families."	"No, should be more funding and lower prices."
"Not enough financial support. Childcare in the UK is really expensive."	"No some are too expensive for working parents under the age of 3 and nonworking parents get funded hours when the child is 2."

"No, more needs to be done before the age of 3."	"Would be great if the government offered some funded hours for under 3-year-olds for working parents."
"With the Neuro typical children, but with the special needs it's quite poor."	"Access to services needs to be changed and quality of service providers. Most work outside of normal daily hours and there seems to be limited provision for those who work unsociable hours."
"Yes, I think they are trying but still more to do."	"Absolutely not, those who are on benefits and likely to be at home are subsidized with childcare hours. Mid earners are not and the cost of childcare is very high. When I was training to become a teacher, I was in an unsalaried position and had to pay nearly a grand in childcare every month."
"I am not sure as I don't have clear vision of governmental plan for childcare."	"Access to services needs to be changed and the quality of service providers. Most work outside of normal daily hours and there seems to be limited provision for those who work unsociable hours."
"No i don't think they do, for example, I'm a twin mum and there was no scheme that helps to apply for them especially since nurseries are very expensive here."	"No. Children do not receive free childcare until they turn 3. This in my opinion is a very late age for them to start interacting with new people in new environments."
"No it puts so much pressure on working parents due to the cost - I barely break even after childcare costs and we then rely on my partners salary to pay other bills."	It needs more facilities and staff too. also the number of nurseries should increase, the waiting lists are unbelievable!
"No. I think government regulations make childcare a no option for parents. Basically push 1 parent to stay home."	There's definitely room for improvement. It's sometimes a question of whether to even send a child to nursery because the cost for some people is almost equal to a one parent's salary. There should be more funding for childcare to make sure nurseries employ a good quality of key workers.

"No, women always stay at home with their baby's because nurseries are too expensive."	Not really … it's too expensive and the outstanding one is always fully booked .. and the time they close around 6 it makes it too difficult to find a job accepting to leave earlier to pick up your kid, so you will find someone only to pick up or to drop the kids .. and that's cost money too. I think the government must put a limit on these nurseries and make them affordable and make the hours until 7pm.
"Needs to be much more affordable. I can't afford to put them both in the nursery as if I worked wages would pay just for that."	"No, they need to make it free for those mothers who work as money is tight when mums have been off work for a year."

ANNEX B

Interview: Judith Ish-Horowicz MBE Interview, Co-founder and Director
Apples and Honey Nightingale, first nursery co-located within a care home

1-What was the need that made you think of the intergenerational idea?
Many of the children at my nursery did not have grandparents living near by and had limited exposure to intergenerational experiences. I decided to visit a local care home as part of the nursery's educational programme. Seeing the impact our occasional meetings had on both the children and the residents and the beautiful relationships that were formed, inspired me to approach the Care Home and ask if I could open a daycare and pre-school in their grounds so we could meet up daily with a purposeful and equally valuable programme for all particpants.

2-What makes it a good childcare/nursery from your point of view?
The main purpose of Early Years settings, other than looking after children so parents can go to work, is to give them the skills, tools and attitudes to be able to reach their full potential; to be curious and active learners, to live fulfilled lives and to be responsible, productive and valued members of society. At an intergenerational childcare and pre-school, the children have an amazingly rich experience, learning from living history through the life stories of their grandfriends, experiencing the ageing process in a natural way. They are in an extended family set up where there are people with time to listen and to give them extra attention.

3-What are the main problems that the children have nowadays from your point of view?
We live in a fractured society where people are under constant pressure and stress and are bombarded with information and news. There is not the extended family set up that used to give structure and support and parents and carers do not time to give the attention children need and deserve. TV and other electronic devices are used to occupy children so that their parents can get on with other things and there is not the freedom to just go out and play and explore.

4 -If you are moving to a new location that also integrates children and older adults, what do you think are the important needs related to the "Space" that must be considered for children and older adults? (e.g., more open spaces/…)
Our older 'grandfriends' need space for their wheelchairs and walkers. Children need space to run around freely and safely.Spaces need to be accessible eg ramps. The children and their grandfriends need to be at the same level so that they can converse comfortably and make, bake, play etc at easily. Spaces need to be safe and secure but also accessible. Funriture needs to be ergonomically suitable for people with varying physical and mobility issues and but also not too expensive.

5-How do you overcome unsociable children and how can you embrace social inclusion in your program?
We offer highly subsidized places to the children of the care staff at the home and, if funds permit, to low income and looked after children.

Children who do not want to participate are not forced to but we always take them along and invite them to take part as they may change their minds, nothing is set in stone.

6-Have you noticed any differences in social behavior after COVID 19 lockdown on children?
(e.g., shyer, anxiety, excessive screen time ...,..)
The changes in children's social skills, their communication and language is marked but we have suffered less than many others as we have been able to maintain our programme throughout the pandemic, though it was reduced and adapted as necessary.

7-Do you think having a nursery in a care home helped entertain kids and decrease the amount of screen time? I don't think that that is because the nursery is in a care home. Rather it's because it's a good nursery that does not include screentime in its curriculum planning.
8-How do you think you are helping working mothers in your nursery/childcare?
Like all good early years settings we give children life skills they will need to achieve their full potential when they leave us. We keep them safe whilst their parents/carers are at work and give them a variety of experiences that encourage them to explore, investigate and be curious. We teach them self-care skills, encourage listening, sharing, turn-taking and focus. We concentrate on developing self-regulation and personal responsibility.

9-Do you think when children interact with older adults, it helps their academic skills or cognitive skills (e.g., speech development, language, grammar, perception of the real world,....)
Yes, we have seen that the children who leave our intergenerational setting have more advanced communication skills than many of their peers.
10-Are there any particular cases where you found that the intergenerational program transformed faulty behavior of certain children? Can you give us an example?
One child who came from a divided family and displayed very anti-social behaviour when with his peers, was sitting by a 'grandfriend' who was wheelchair bound and had lost the ability to communicate verbally, following a stroke and was very angry and often aggressive in her frustration. Without prompting, he placed his had on hers and sat quietly during an intergenerational setting, calming her and being very gentle. It was totally unexpected behaviour and very moving.

11-When children deal with older adults, does that help their social skills in general? Can you give us an example?
Yes it does. They learn about delayed gratification, that you can't have everything you want, just when you want it. They display greater responsibility for others, when they are jumping or running around in a session, they are very careful around their grnadfriends' feet and wheelchairs.

12-Which is more common in older adults nowadays, the ratio of mental illness to physical illness?
I can't answer that.

13-Can you describe the behavior of the elderly around children and their emotions towards them?

Some residents are not interested in joining the intergenerational programme and some even dislike it but the majority love it and their faces light up when they see the children. It can motivate them to 'try a but harder' when we have an IG programme and certainly makes them more physically active.

14-What are the challenges that you face in the intergeneration program?

Various. The main challenges are peoplepower and culture. It is very volunteer heavy as many residents need someone to bring them to the session and most care settings are short staffed and cannot release staff to support a full intergenerational programme. The other is the culture. If you are joining an organisation that is well established and fixed in its ways, it can be difficult to change that culture to be inclusive and to welcome an outside organization that wants you to adapt. Communication is always a challenge.

15-Do you think there is a low supply in childcare facilities in the UK?

Yes, there is a shortage of good, affordable childcare.

16-Do you think the government is doing enough to facilitate childcare facilities for parents?

No. It does not fund childcare at the level that would ensure the quality of settings and staff is good.

17-Do you have any suggestions on how policymakers can support more intergenerational programs?

They could invest in it.

18-**What do you think of the idea "where older adults who are in good health and can look after themselves live independently in serviced residential apartments but share the open spaces, facilities, services and common areas with a preschool?**

I think it's an excellent idea.

19-From your experience, do you have any suggestions for this idea?

There are many models of this type internationally and more are being developed as I write. I believe that any such model should also have a professional to facilitate Intergenerational engagements in a skilled, effective way so that they are equally therapeutic and developmentally valuable for all age groups.

ANNEX C

Interview: Gamila El Leithy who is studying PGCEi (Post graduate certificate in Education-international) At the University of Nottingham and an art teacher.

1-What is your name?
Gamila Tarek El-Leithy

2-What did you study?
I graduated with a bachelor's degree in production design then after several years in teaching I took my PGCEi from the University of Nottingham.

3-Can you describe your contact with children and the nature of your job?
I'm an art teacher and deal with children daily. I teach 7 different classes, I teach each class 2 lessons per week which is a total of an hour and twenty minutes. I also interact with them during morning, break and pick-up duties.

4-Which age do you teach?
I teach children in Key stage 1, which includes year 1 and 2, from 6 to 8 years old.

5-Have you ever seen any contact between the children and their grandparents and can you describe it? (e.g., the children talking about them or mentioning them or the grandparents picking them from school)
I have seen grandparents coming to pick their grandchildren up a lot in the past 6 years, and there are certain grandparents who have consistently come and picked their grandchildren up for the past 6 years. I have also heard many children speak about and mention their grandparents a lot in their stories. I remember one day when I spotted a girl in year 2 crying one day during the break and when asked what was wrong, she replied by saying that she misses her grandfather who recently passed away. I then told her to remember all the good memories she had with him and to mention one of them and she said that he used to get her presents during Christmas when they were in her home country Venezuela. I remember how genuine and sincere her feelings were and how she was really just thinking of him on a random day at school, it says a lot about the kind of relationship and bond that they had.

6-Do your students deal with any of the elderly staff in your school (60+), can you describe their behavior around them and their emotions towards them?
In the school that I work at we almost don't have senior staff, but when they interact with elderly staff; they usually treat them with more respect and usually look up to them more than they would to someone younger. I think they would also be more curious and ask lots of questions because they are used to that with their grandparents. I have a student in year 2 who has a very special relationship with her grandfather where she mentions him a lot and when I spoke to her mother, she told me that he can sit with her for hours and talk to her about different topics and she would ask questions and retain that knowledge much more than she would in different contexts even at school; and maybe that's because he talks about topics that might be beyond her age and that she wouldn't be able to talk about with younger people or who would maybe over-simplify.

7-Are the children you are teaching socially interactive, or do they prefer to sit alone and socially isolate?
The majority of children I teach are socially interactive; however, we do have some children with ASD or with different needs who might find it difficult to interact with others.

8-How do you overcome unsociable children and how you can embrace inclusion In your class?
We usually try to pair them up with other students who might be more tolerant than others or who might share the same interests. This year we have a girl with ASD who is non-verbal and doesn't really like playing with others but there were two other girls who enjoyed hanging out with her even though they weren't asked to. Sometimes we also monitor them during their breaks and try to step in to make sure they are not sitting alone and that they are able to deal with their friends in a healthy manner.

9-Have you noticed any differences in social behavior after COVID 19 lockdown on children? (e.g, more shy, more anxiety, excessive screen time ...,..)
That's for sure, children after lockdown have become a little less patient and that might be due to the increase screen time and exposure to technology. There are also some children who are were a little extra shy because they haven't dealt with a lot of people for 2 very critical years of their lives. The upside to this is that it has almost been a year without lockdown so things are slowly going back to normal, but I remember right after the lockdown, we noticed many changes in the children where they were less energetic and would get bored more easily. Some children were also becoming less flexible and tolerant because they were only dealing with a limited number of individuals for a long time.

10-How much a day does your school allow screen time?
We are usually conscious about that in the school, and since we don't use tablets on a daily basis, the children don't get exposed to a lot of screen-time other than the projector in class.

11-Do you think when children interact with older adults will help their academic skills or cognitive skills (e.g. speech development, language, grammar, perception of the real world,....)
Yes, for sure! I have seen many examples of that in my students where children who have strong relationships with their grandparents usually have developed language skills and have knowledge beyond their age which impresses me in may situations. I have also seen that with my younger cousins who used to have deep conversations with my grandfather and who would be able to carry out conversations in a mature way in different contexts. I was also amazed at how they would retain the knowledge or information shared by their grandparents and would use it in different contexts correctly.

12-Do you think when children interact with older adults it will affect their behavior in a positive way on the long run?
I think so, because this gives them a chance to see the world through a different lens and make them more aware of different aspects of the world around them.

13-What makes it a good childcare/nursery from your point of view?

I think it would be a place where the children feel loved, nurtured and cared for. I think it would also be a place where children are exposed to different experiences and are left to explore the world around them in creative ways.

14-What are the main problems that the children have nowadays from your point of view?

I think it would include: being too dependent on technology, not wanting to explore their environments and rely on sitting in front of screens and not having opportunities to discover different things and experiences.

15-What do you think are the spatial needs for children in a preschool/nursery?

I think it would be a place with indoor and outdoor spaces with room for different activities and a chance to explore different sceneries, materials, textures, and experiences.

16-Does most of the mothers of your students work?

A number of them are saty at-home moms, others are teachers at the same school which makes it convenient for them to be around their children and near them. And the others work all different kinds of jobs, some work in finance, some work in advertising, some work in the healthcare industries and many other professions.

17-Do you think that nurseries/preschools enhance children's their social interaction? (Do you have an example)

Yes, I do; I have seen many children who became more sociable right after they started Attending nursery. My cousin's son had a speech delay and struggled socially a little and there was noticeable progress a few months after he started going to the nursery. From observation, I have noticed that children who usually go to nurseries deal better than children who don't in both familiar and unfamiliar social contexts.

18-If it was proven scientifically that putting your children in daily interaction with older adults (e.g. improve social behavior, language and speech, social interaction,…). Putting safety factors into consideration, would you agree to let your students interact with elderly on daily basis in a nursery/preschool.

I definitely would, I think it would definitely benefit them and positively affect their development.

19-Do you have any suggestions for the project?

I think It would be nice if this model was presented to different nurseries/ preschools and elderly homes so that they would consider the idea and maybe arrange events during the year if having a regular and fixed program with integration would be difficult. I think awareness about the benefits of this project based on empirical evidence would make parents more convinced to enroll their students in preschools of that sort.

ANNEX D

Interview: Fernanda Ahumada, who obtained a degree in Early Childhood Education and *a master's degree in Developmental Psychology* who teaches children in a public school

1-What is your name?
Fernanda Ahumada

2-What did you study?
I have an undergraduate degree in Early Childhood Education and a master degree in Developmental Psychology.

3-Can you describe your contact with children and the nature of your job?
Although currently I am not teaching in any educational centre, now I am doing research with children. I observe children to know their interests and need, and then I support them in their own research projects.

4-Which age do you teach?
4 to 6 years old.

5-Have you ever seen any contact between the children and their grandparents and can you describe it? (e.g., the children talking about them or mentioning them or the grandparents picking them from school): When I was working in a public school in Chile, some grandparents picked up their grandchildren from the school. We use to have conversations about the children, they were always highlighting the great skills of their grandchildren.
Additionally, children constantly talked about their grandparents. How do they spend time together when their parents were at work and how much fun they have with them.

6-Do your students deal with any of the elderly staff in your school (60+), can you describe their behavior around them and their emotions towards them?
Not in this moment.

7-Are the children you are teaching socially interactive, or do they prefer to sit alone and socially isolate? They interact with each other.

8-How do you overcome unsociable children and how you can embrace inclusion In your class?
I use different strategies but the first one is to observe and see what is going on. Then, and depending on the reason why the child is not interacting, I approach to the child and talk about the situation, then I talked with the families to see if there is any problem at home. I also talk with other children or with some of them and then I create different circunstances and learning experiences to support their positive interaction.

9-Have you noticed any differences in social behavior after COVID 19 lockdown on children?

(e.g, more shy, more anxiety, excessive screen time ...,..) Yes. They are showing more externalizing behaviours.

10-How much a day does your school allow screen time?
There is no protocol for this.

11-Do you think when children interact with older adults will help their academic skills or cognitive skills (e.g. speech development, language, grammar, perception of the real world,….): I think it depends of the interaction and the temperament of the children and the older adult. However, I think it would be a positive social experience.

12-Do you think when children interact with older adults it will affect their behavior in a positive way on the long run? It will depend of the interactions, its quality, the frequence of the interaction, the relationship between them, among other factors. I guess the effect will be positive but I am not sure it will be a long-term effect.

13-What makes it a good childcare/nursery from your point of view?
For me, a good childcare is someone who is sensible and respectful to children's needs and interest.

14-What are the main problems that the children have nowadays from your point of view?
Dealing with all the pressure and anxiety of adult's decisions. Especially climate change and covid measures.

15-What do you think are the spatial needs for children in a preschool/nursery?
 I think children are the ones who knows their needs, but from what I have observed, they are interested in non-structured and natural spaces.

16-Does most of the mothers of your students work?
Yes.

17-Do you think that nurseries/preschools enhance children's their social interaction? (Do you have an example) Yes. That is one of the main goals of early childhood education. They promote it throough offering different settings and materials to play and explore.

18-If it was proven scientifically that putting your children in daily interaction with older adults (e.g. improve social behavior, language and speech, social interaction,…).
Putting safety factors into consideration, would you agree to let your students interact with elderly on daily basis in a nursery/preschool. Yes, of course!

19-Do you have any suggestions for the project?
To consider children and older people's interest and needs.

APPENDIX A

Older Adults Questionnaire

A preschool inside an older adults residential community

You are invited to participate in this survey about Mothers with children aged 2-5 years in the UK.

The survey is part of a master's thesis research study conducted by Haya Arafa at the Politecnico Di Milano University in Italy, under the supervision of Professor Marta Cordini.

I would be grateful if you could spare 7 minutes only to share your input with me by filling out this survey.

Responding to the survey is voluntary. Your responses will be anonymous if you prefer so. Collected data will remain confidential and used solely for research purposes.

If you are interested to know more about the survey results or would like to withdraw your answers at any time please contact the researcher via email: hayamohsen.arafa@mail.polimi.it

Thank you for your time and valuable input!

* Required

1. Age Group *

   Mark only one oval.

   ◯ 25 to 30

   ◯ 30 to 35

   ◯ 35 to 40

   ◯ 40 to 45

   ◯ 45+

   ◯ Other: _____

2. **Marital Status?** *

Mark only one oval.

◯ Single (never married)

◯ Married, or in a domestic partnership

◯ Widowed

◯ Divorced

◯ Separated

◯ Other: _____

3. Gender *

Mark only one oval.

◯ Female

◯ Male

4. Where do you live? *

Mark only one oval.

◯ Central London

◯ North London

◯ South London

◯ East London

◯ West London

◯ Other: _____

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5.   I often see my child "prefers sitting alone" *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly Agree

6.   My child is not very social and sometimes lacks companionship *

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

7.   Is your child facing problems with language development or speech *

Mark only one oval.

◯ Yes

◯ No

◯ Maybe, a little bit

◯ Other: _____

8.   How often do your children interact with their grandparents? *

Mark only one oval.

◯ They don't have grandparents

◯ Daily, we live together

◯ Once a week

◯ Once a month

◯ Barely, only a couple of times a year

◯ Once a year, they live in another city/country

◯ Other: _____

9. It is complicated to visit grandparents: *

Mark only one oval.

◯ No, they live close by

◯ No, it is okay for me even if they live far away

◯ Yes, it is really complicated because they live far away

◯ Other: _____

10. My child feels happier when they sit/play with their grandparents and love   *
listening to their stories.

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

11. COVID-19 lock down has affected my child's social interaction *

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

12. Have you noticed any signs of poor academic performance or delayed   *
development for your child?

Mark only one oval.

◯ Yes

◯ No

◯ Maybe, a little bit.

◯ Other: _____

13.   My child prefers having a screen time rather than sitting with us *

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

14.   How much screen time does your child have? *

Mark only one oval.

◯ I don't allow screen time (my child is very young)

◯ 30 minutes a day

◯ 1 hour a day

◯ 2 hours a day

◯ 3 hours a day

◯ Other: _____

15.   Did you make any career changes when your child was born? *

Mark only one oval.

◯ I do not work.

◯ No, I only took my maternity leave and my child went to childcare.

◯ Yes, I had to take an unpaid for a long time.

◯ Yes, because I struggled a lot to find availability in childcare facilities.

◯ Other: _____

16. Early childhood education and care for children is important as it helps their *
social skills

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

17. For me childcare/preschool/ nursery is important because of social skills *
more than academic skills

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	◯	◯	◯	◯	◯	Strongly Agree

18. What are the issues that you face when searching for childcare/ *
kindergarten/preschool?

Check all that apply.

☐ Availability (always booked)
☐ Affordability (very expensive)
☐ Mobility (to find one near my job/house)
☐ Other: _____

19. What makes it a good childcare/preschool/kindergarten/nursery? (you can   *
    pick more than one)

    Check all that apply.

    ☐ Outdoor spaces: A nice interactive and vibrant playground
    ☐ Lots of activities
    ☐ Academic and language development program
    ☐ Social interaction and how they introduce them to the real world before school
    ☐ Quality of spaces
    ☐ Other: _____

20. Do you think there is low supply in childcare facilities in UK? *

    Mark only one oval.

    ◯ Yes
    ◯ No
    ◯ Maybe

21. If it was proven scientifically that putting your children in daily interaction   *
    with older adults (e.g. improve social behavior, language and speech, social
    interaction,...)., Putting safety factors into consideration, would you agree to
    let your child interact with the elderly on daily basis in
    childcare/kindergarten/preschool.(e.g. interact certain hours of the day in a
    playground)

    Mark only one oval.

    ◯ Yes, it's a great idea!
    ◯ No
    ◯ Maybe, it depends.
    ◯ Other: _____

22. Do you think the government is doing enough to facilitate childcare facilities   *
    for parents ? (please share your insights or if you have any suggestions)

    _____

    _____

    _____

    _____

    _____

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APPENDIX B

Mothers of Children Questionnaire

A preschool inside an older adults residential community

You are invited to participate in this survey about Mothers with children aged 2-5 years in the UK.

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I would be grateful if you could spare 7 minutes only to share your input with me by filling out this survey.

Responding to the survey is voluntary. Your responses will be anonymous if you prefer so. Collected data will remain confidential and used solely for research purposes.

If you are interested to know more about the survey results or would like to withdraw your answers at any time please contact the researcher via email:
hayamohsen.arafa@mail.polimi.it

Thank you for your time and valuable input!

* Required

1. Age Group *

   Mark only one oval.

   ◯ 25 to 30

   ◯ 30 to 35

   ◯ 35 to 40

   ◯ 40 to 45

   ◯ 45+

   ◯ Other: _____

2. 2. Where do you live? *

Mark only one oval.

- ( ) Central London
- ( ) North London
- ( ) South London
- ( ) East London
- ( ) West London
- ( ) Other: _____

3. 3. Marital Status? *

Mark only one oval.

- ( ) Single (never married)
- ( ) Married, or in a domestic partnership
- ( ) Widowed
- ( ) Divorced
- ( ) Separated
- ( ) Other: _____

4. How old is your child? *

Mark only one oval.

- ( ) 0 to 2 years
- ( ) 2 to 4 years
- ( ) 4 to 6 years
- ( ) 6+ years
- ( ) Other: _____

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5. Do you live alone? *

Mark only one oval.

◯ Yes

◯ No

◯ Other: _____

6. How often do you feel you lack companionship? *

Mark only one oval.

◯ Always

◯ Often

◯ Sometimes

◯ Rarely

◯ Never

7. How often do you feel isolated from others? *

Mark only one oval.

◯ Always

◯ Often

◯ Sometimes

◯ Rarely

◯ Never

8.   How often do you feel left out? *

Mark only one oval.

◯ Always

◯ Often

◯ Sometimes

◯ Rarely

◯ Never

9.   What do you do in your free time? (you can pick more then one) *

Check all that apply.

☐ Volunteering

☐ Gardening

☐ Cooking classes

☐ Community groups

☐ Go to the park

☐ Babysit my grandchildren

☐ I don't feel tempted to do anything

☐ Watch TV

☐ Other: _____

10.   What are the common problems that you face? (You can pick more than one) *

Check all that apply.

☐ Lack of Entertainment

☐ Need for Self-worth (The urge of doing something)

☐ Health issues

☐ Persistently sad

☐ Dementia

☐ Lack of energy

☐ Other: _____

11.   When was the last time you met a friend? *

Mark only one oval.

( ) Last week

( ) Two weeks ago

( ) Last month

( ) I can't remember

( ) Other: _____

12.   What are two main reasons that tempt you to visit a park? (you can pick   *
more than one)

Check all that apply.

[ ] Meeting friends

[ ] Have a walk

[ ] Conquer boredom

[ ] See families and children playing

[ ] Getting exposed to nature

[ ] Watch people around

[ ] Walk my pet

13.   How often do you see your grandchildren? *

Mark only one oval.

( ) I don't have grandchildren

( ) Daily, we live together

( ) Once a week

( ) Once a month

( ) Barely, only a couple of times a year

( ) Once a year, they live in another city/country

( ) Other: _____

14. 12. Do you feel happier when you play with your grandchildren? *

Mark only one oval.

	1	2	3	4	5	
Not Happy	◯	◯	◯	◯	◯	Very Happy

15. What makes you feel home? (you can pick more than one) *

Check all that apply.

☐ Comfort (Warmth, cozy, secure)
☐ Routine
☐ Self-expression (Hobbies, doing your own things)
☐ Privacy (Being yourself, your own bed, naked emotionally and physically)
☐ Family (communication, dinner with family)
☐ Other: _____

16. If you are moving to a new community with serviced residential apartments *
     that accommodate older seniors needs. Would you welcome the idea of
     sharing the common spaces and facilities (e.g. playground/garden) with a
     Nursery/Preschool while having your own personal space?

Mark only one oval.

◯ Yes, great idea!
◯ No
◯ Maybe
◯ Yes as long as there is privacy in my personal space
◯ Other: _____

17. Please mark your main needs if you want to move to a better place (pick   *
     more than one)

     Check all that apply.

     ☐ More sunlight in apartments

     ☐ Apartment with a view

     ☐ In the heart of the city

     ☐ Amenities and services inside the community

     ☐ An open interactive space for all the residents to meet (Garden/courtyard)

     ☐ Common area to eat together

     ☐ Entertainment programs

     ☐ Spaces dedicated for activities: Craft rooms, cooking school, gardening school

     ☐ All

     ☐ Other: _____

18. Do you think the government is doing enough to integrate older adults in the *
     community? (Please share your insights or if you have any ideas)

     _____

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